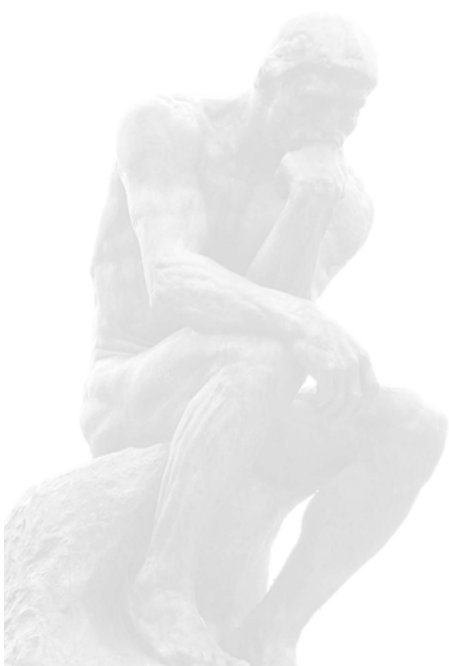




GRADUATE ACADEMIC CATALOG
SUMMER 2023 – SPRING 2024



UNIVERSITY OF
LOUISVILLE®

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GRADUATE



The **Graduate Catalog** is applicable to students who enroll at the University beginning Summer 2023 through Spring 2024.

The Graduate Catalog is the official listing of the policies governing graduate education at the University of Louisville. This catalog documents policies and procedures set by the Graduate Council and is updated each academic year to reflect changes and updates to policy. While every effort has been made to make the catalog accurate as of the date of publication, the University of Louisville reserves the right to change programs of study, academic policies, academic requirements, fees, course information, procedures for the confirmation of degrees, or the announced academic calendar and related deadlines without prior notice.

Revised May 2021.

The University of Louisville is accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) to award associate, bachelor, master, specialist, doctoral, and first-professional degrees (DMD, JD, MD). The University of Louisville also may offer credentials such as certificates and diplomas at approved degree levels.

Questions about the accreditation of the University of Louisville may be directed in writing to the **Southern Association of Colleges and Schools Commission on Colleges** at 1866 Southern Lane, Decatur, Georgia 30033-4097, by calling (404) 679-4500, or by using information available on SACSCOC's website (sacscoc.org (<http://sacscoc.org/>)).

The University of Louisville reserves the right to change programs of study, academic policies, academic requirements, fees, course information, procedures for the confirmation of degrees, or the announced academic calendar and related deadlines without prior notice.

The provisions of this publication do not constitute an express or implied contract between the University of Louisville and any member of the student body, faculty, or general public.

The University of Louisville is committed to and will provide equality of educational and employment opportunity for all persons regardless of race, sex, age, color, national origin, ethnicity, creed, religion, diversity of thought, disability, genetic information, sexual orientation, gender, gender identity and expression, marital status, pregnancy, or veteran status – except where sex, age, or ability represent bona-fide educational or employment qualifications or where marital or veteran status are statutorily defined eligibility criteria for Federal or State benefit programs. If responses from the unit staff are unsatisfactory, inquiries or complaints about illegal discrimination including sexual harassment

or handicap access can be made to Employee Relations and Compliance (<https://louisville.edu/hr/employeerelations/>) by calling (502) 852-6538.

The Redbook is the official statement of the organizational structure, the rules of governance and procedures, and university-wide policies of the University of Louisville. If there is any conflict between the policies, procedures or other statements contained within this catalog, *The Redbook* shall govern. A copy of "*The Redbook*" (<http://louisville.edu/provost/redbook/contents.html>) *The Redbook*" is available electronically.

Additional policies and information covering students can be found in the Student Handbook (<http://louisville.edu/dos/students/studentpoliciesandprocedures/student-handbook/>).

Admission criteria for many of the colleges and schools are reviewed periodically. Students should contact their anticipated unit or the Graduate School, Graduate Admissions, for information on the requirements in effect at the time of admission.

Letter from the Dean



Welcome to the University of Louisville's Graduate School.

As a graduate student at the University of Louisville, you will face many exciting and rewarding challenges. Whether you are pursuing a masters or doctoral degree or a professional certificate, you are about to

discover that graduate study is quite different from your undergraduate experience. Instead of taking coursework from a broad range of disciplines, you will have a much narrower—and much deeper—focus. The opportunities to work with faculty members one-on-one are considerably greater than generally found in most undergraduate programs. Graduate programs also usually require much greater individual initiative than undergraduate courses of study, and you will be responsible for your own progress toward the degree.

Your intellectual life will revolve around your program's curriculum and the faculty and students in your cohort. You may have a faculty mentor who serves as an advisor and who will help guide you through your program of study. The relationship that you develop with your mentor will be of the utmost importance to your successful pursuit of a graduate degree. Good mentoring is critical to your success in graduate school, and the Graduate School is making every effort to ensure that the highest quality level of guidance is provided to you. The University of Louisville has a strong faculty dedicated to graduate education, research and creative works. As you learn from them, you will find yourself breaking new intellectual ground and contributing to the academic and professional conversations in your field. You will join a community of scholars composed of distinguished faculty and talented students. Each member of this learning community shares common interests in scholarship and yet individually pursues new knowledge about a particular area of science, social science, humanities, engineering, medicine or business.

Although there is a great deal to learn within the discipline that you have chosen to study, take the time to interact with faculty and students from the larger community of scholars at the university by attending talks, seminars, exhibitions and classes offered across the university's schools and colleges.

Success in graduate school depends on careful planning, and the Graduate School is committed to helping you plan your academic and professional future. We have a professional development program for graduate students with the acronym of PLAN, and during your time at the University of Louisville, we will facilitate your Professional growth, your development of Life skills, your Academic success, and your ability to successfully Network. Take advantage of the many workshops and professional development opportunities offered by the Graduate School and your own program to acquire "essential skills" like time management, teamwork, grant writing, publishing and teaching, all of which are translatable beyond the bounds of your specific disciplinary studies or your time in graduate school.

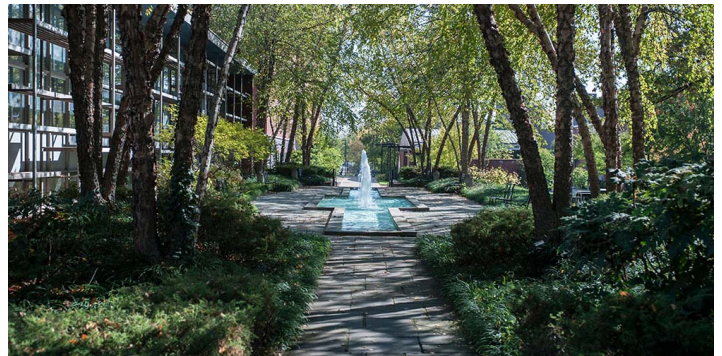
Finally, you have chosen to attend graduate school at a university in a terrific, vibrant city. Louisville offers many cultural, recreational, and entertainment opportunities, so make sure to make the most of your time here as you advance your career goals.

I wish you the best of luck in your graduate studies.

Beth Boehm, PhD

*Vice Provost for Graduate Affairs
Dean of the Graduate School*

Mission Statement of the University of Louisville



The University of Louisville pursues excellence and inclusiveness in its work to educate and serve its community through:

- teaching diverse undergraduate, graduate, and professional students in order to develop engaged citizens, leaders, and scholars;
- practicing and applying research, scholarship and creative activity; and
- providing engaged service and outreach that improve the quality of life for local and global communities.

The University is committed to achieving preeminence as a nationally recognized metropolitan research university.

History of the University



On April 3, 1798, eight men declared their intention to establish the Jefferson Seminary in Louisville and called upon their fellow citizens to join them in pledging funds for land, buildings, and teachers. Occurring a few weeks after the Kentucky legislature had chartered this academy and several others in the new state, this event marked the beginning of an advanced level of education for the young people of a frontier settlement barely two decades old. Near the end of the eighteenth century these early Louisvillians took the first steps on a journey that would link them with succeeding generations to the modern University of Louisville.

Jefferson Seminary struggled. It did not open until the fall of 1813, and in 1829 it closed. The Louisville Medical Institute (LMI), chartered in 1833, opened in 1837, and the Louisville Collegiate Institute (LCI) was chartered the same year. In 1840 LCI was renamed Louisville College and in 1844 it inherited the portion of the estate of Jefferson Seminary designated for the use of higher education in Louisville. LMI attracted large enrollments and prospered financially, but the college had difficulty remaining open.

Proponents of grass roots democracy wanted to divert a portion of the medical school's resources to the college. They won a partial victory in 1846, when the Kentucky legislature created the University of Louisville proper, combining the medical school, the college and a newly created law school. Although there was now a common board of trustees, each division retained financial autonomy, and the college did not survive.

During the 19th century most of the professors in UofL's medical and law schools were drawn from the ranks of local physicians and attorneys who considered teaching a part-time vocation. By the 1880s and 1890s, however, the university felt pressure from educational reformers who not only believed schools should employ full-time instructors but who also advocated well-enforced national standards for academic training. In 1907 this trend contributed to the revival of the liberal arts college, which had been all but forgotten during the second half of the century. A much more vibrant university added new programs – the Graduate School (1915), School of Dentistry (1918), Speed Scientific School (1925), University College (1928-1982), Louisville Municipal College for Negroes (1931-1951), School of Music (1932), and Kent School of Social Work (1936) – conformity to accreditation guidelines became increasingly important. Expanded academic programs and the adherence to higher educational standards led to the appointment of full-time administrators before America's entry into World War I.

World War II and the postwar era brought major changes to UofL. Shortly after the war, a movement began to close the all-black Louisville Municipal College and desegregate the university on all levels. This was accomplished in 1950 and 1951. In 1953 the School of Business was created. Perhaps the most dramatic development of the postwar period was the movement of tax-paying citizens from the city to the suburbs. Because UofL was municipally funded, this caused a damaging drain on the school's revenue. As early as 1965, a governor's task force suggested the possibility of the university's joining the state system of higher education, which it did in 1970.

Since the late 1960s the university has added several new academic units, including the School of Education (1968), the School of Justice Administration (1969), the School of Nursing (1979), and the College of Urban and Public Affairs (1983). In 1992 the latter school was eliminated and its functions distributed to other units. In the same year the School of Justice Administration moved to the College of Arts and Sciences, and the Kent School of Social work joined the Division of Allied Health to form the new College of Health and Social Services. In 1996 the functions of the College of Health and Social Services were realigned resulting in a separate Kent School of Social Work and a School of Allied Health Sciences. By 1999 Allied Health had given way to the School of Public Health and Information Sciences. In 2001 the School of Education became the College of Education and Human Development, and in 2003 the Speed Scientific School was renamed the J.B. Speed School of Engineering.

All of these schools have won their share of national acclaim. So too have UofL's athletic programs, with multiple NCAA Division I men's basketball championships; competitive football and baseball programs; and top-flight women's basketball and volleyball teams, among others. During "The Year of the Cardinal," in 2013, the Louisville Cardinals became the first university ever to win a BCS Bowl game, place both men's and women's basketball teams in the NCAA Final Four and reach the College World Series.

One of the nation's first city-owned, public universities, UofL has a long history of dedication to the needs of the Louisville urban area. In 2007, the university reaffirmed that mission through implementation of

its Signature Partnership initiative, which formalizes its commitment to improving the lives of residents of some of Louisville's most disadvantaged neighborhoods. In 2019, the university's presence in West Louisville was expanded to include a newly remodeled building in the Portland neighborhood, dedicated to additional space for the College of Arts & Sciences' Fine Art and Anthropology programs.

The university continues to grow and innovate to meet the changing needs of the commonwealth. New academic programs and innovative forms of instruction further UofL's place in helping meet the needs of students and of the 21st-century economy. Expanded and improved campus facilities include new housing options, the Student Rec Center, updates to the Floyd Street corridor, expansion and remodeling of the Student Activity Center, expanded and updated facilities on the Health Sciences Campus, and the Belknap Academic Building – over 150,000 square feet of new space including new state-of-the-art classrooms and laboratories, group study areas, gathering spaces, and a Student Success Center – which opened in fall 2018.

Celebrating its 225th anniversary in 2023, UofL is uniquely positioned to create a thriving future for Louisville, for Kentucky and for the world.

For more information, see Dwayne D. Cox and William J. Morison, The University of Louisville (Lexington: University Press of Kentucky, 2000). Content provided by University Archives & Record Center and the Office of Communications and Marketing.

Administration

Dr. Kim Schatzel, President, University of Louisville

Kim Schatzel became the 19th permanent president at the University of Louisville on February 1, 2023.

Board of Trustees

In accordance with the statutory authority of the Commonwealth of Kentucky and implemented in the By-Laws of the Board of Trustees and the governmental procedures for the university, the Board of Trustees is the governing body of the University of Louisville. Within the limits set by the Federal and State Constitution and federal and state law, the Board shall actively engage in policy making, be responsible for aiding the university to perform at a high level of excellence, adopt an annual budget and ensure that the financial resources of the university are sufficient to provide a sound educational program, and periodically evaluate the university's progress in implementing its missions, goals and objectives.

It selects the President of the university; upon recommendation of the President, it makes all appointments to the faculty and all appointments of individuals in administrative capacities who serve at the pleasure of the Board.

The Board of Trustees grants all degrees conferred by the university.

More information on the Board of Trustees, including current membership can be found at the Board of Trustees website (<http://louisville.edu/president/board-of-trustees/>).

University Leadership

Kim Schatzel, PhD
President

Lori Stewart Gonzalez, PhD
Executive Vice President and University Provost

Kevin H. Gardner, PhD
Executive Vice President for Research and Innovation

Toni Ganzel, MD, MBA
Vice President for Academic Medical Affairs

Dan Durbin, MPA
Vice President for Finance and Administration/Chief Financial Officer

Associate Dean of the Graduate School

Graduate Student Council

Alexandria (Allie) Underwood
GSC President

School and College Deans

David S. Owen, PhD

College of Arts and Sciences
(Interim)

Jeff Guan, PhD
College of Business
(Interim)

T. Gerard Bradley, DrMedDent
School of Dentistry

Amy Shearer Lingo, PhD
College of Education and Human Development
(Interim)

Emmanuel Collins, PhD
J.B. Speed School of Engineering

Beth Boehm, PhD
Graduate School

Melanie B. Jacobs, JD
School of Law

Toni M. Ganzel, MD, MBA
School of Medicine

Teresa Reed, PhD
School of Music

Mary DeLetter, PhD, RN
School of Nursing
(Interim)

Craig H. Blakely, PhD
School of Public Health and Information Sciences

Crystal Collins Camargo, PhD
Kent School of Social Work
(Interim)

Robert E. Fox Jr., MLS, MBA
University Libraries

About the Graduate School



The legislative functions of the Graduate School are vested in the Graduate Council, which consists of elected representatives of the Graduate Faculty. The Council establishes minimum guidelines and policies that maintain high standards for administering graduate education at the University of Louisville. The dean of the Graduate School serves as chair of this body and of the Graduate Faculty.

The dean and the dean's staff are responsible for the administration of the rules and regulations of the Graduate School and are expected to maintain and safeguard the standards and policies of the school as outlined by the Graduate Faculty and the Graduate Council.

Graduate students participate in the operation and decision-making process of the Graduate School through the Graduate Student Association (<https://louisville.edu/graduate/gsc/>)—to which all graduate students belong—and its executive committee, the Graduate Student Council, which consists of one elected representative from each graduate program. A representative of the Graduate Student Council serves as a voting member of the Graduate Council.

Graduate students are actively sought as members of many of the standing committees of the Graduate School, and they are urged to participate and become involved in the administration of the Graduate School through these channels.

Administrative Officers of the Graduate School

Beth Boehm, PhD
Vice Provost for Graduate Affairs
Dean of the Graduate School

Paul DeMarco, PhD

Mission Statement of the Graduate School



The mission of the Graduate School is to advocate and provide support for graduate education, graduate students, and interdisciplinary programs, and to promote the advancement of knowledge through the teaching and training of post-baccalaureate students.

By fostering the spirit of inquiry and research in the members of its faculties, it not only strengthens undergraduate instruction but also advances knowledge.

Through its graduate courses, it furnishes advanced preparation for those who are planning to become investigators or teachers in the social sciences, humanities, and natural sciences.

It also partners with the academic units to support graduate students, financially and professionally, and help those units recruit, retain, and prepare students for successful careers.

Application and Admission



It is the applicant's responsibility to consult the appropriate department, school or program for application deadlines and specific program requirements. The university reserves the right to change programs of study, academic requirements, tuition and fees (<https://louisville.edu/bursar/tuitionfee/>), schedule of courses (<https://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>), the announced academic calendar (<http://louisville.edu/calendars/academic/undergrad-grad/>) and deadlines without prior notice.

Minimum Application Requirements for All Graduate Programs

- Application for graduate admission
- Application fee
- Official transcript(s) from all previous colleges and universities attended
- Letters of recommendation (at least two) (check program requirements)
- Standardized Test Scores (check program requirements)

Some programs require additional materials, such as a personal statement, writing sample, etc. (consult specific program requirements in the graduate catalog (<https://catalog.louisville.edu/graduate/programs-study/>)).

Application for Admission

Apply online at louisville.edu/graduate/apply (<http://graduate.louisville.edu/apply/>).

Credentials should be sent to the address below:

University of Louisville

Graduate School

Graduate Admissions

2211 South Brook Street, Houchens Building, Suite 105
Louisville, KY 40292

Programs have different deadlines and may require additional credentials or materials. Applicants should consult the pertinent program section of this catalog and check directly with the department.

The application and supporting documents become the property of the University of Louisville and will not be returned to the applicant or forwarded to another university.

If you do not enroll, your academic credentials will be retained in the Graduate School for two years.

Application Fee

A non-refundable application processing fee is required. When applying online, the fee may be paid with a credit card or electronic check.

Students receiving public assistance may be exempt from the application fee and may request an application fee waiver with appropriate documentation. Submit appropriate documentation along with the application or send to gradadm@louisville.edu.

Applications will not be processed until the application fee is received.

Transcripts

All applicants must submit **official transcripts showing** all degrees awarded and all undergraduate and graduate work (all courses) completed from each accredited college/university previously attended. Transcripts must be original documents bearing the institutional seal and official signature of the Registrar or copies verified by a school administrative officer. The minimum requirement for admission is the baccalaureate degree or its equivalent from an accredited institution¹. Students applying with a baccalaureate or an advanced degree from a nationally accredited institution will be considered at the discretion of the

admitting unit with approval via a variance request to the Vice Provost for Graduate Affairs.

International applicants with transcripts that are not in English, in addition to submitting official copies of native language records, must also submit a notarized, verbatim translation in English prepared by an appropriate university or government official. The records must show both the degree granted and all coursework taken during the course of study. Applicants who are submitting transcripts from outside the United States must verify their records by submitting them to one of the following organizations: World Education Services (WES)(www.wes.org (<http://www.wes.org/>)), Educational Credential Evaluators (www.ece.org (<http://www.ece.org/>)), Educational Credential Evaluators (ECE), and other NACES approved evaluators found here: www.naces.org/members.

¹ Recognized accrediting agencies include: Middle States Association of Colleges and Schools (MSA), North Central Association of Colleges and Schools (NCA-HLC), Northwest Commission on Colleges and Universities (NWCCU), New England Association of Schools and Colleges (NEASC-CIHE), Southern Association of Colleges and Schools Commission on Colleges (SACSCOC), The Western Association of Schools and Colleges (WASC-ACSCU, WASC-ACCJC)

Test Scores

The Graduate Record Exam (GRE) is not required for consideration for university fellowship and scholarship awards. GRE scores may be required for admission to some graduate programs. Please check directly with the department regarding test requirements. **The University of Louisville institution code for score reporting is 1838.**

Letters of Recommendation

A minimum of two letters of recommendation are required; however, some graduate programs require more. Letters should be written by someone who can speak to the applicant's academic and/or professional capabilities. Letters of recommendation may be sent to gradadm@louisville.edu or by regular mail to the address listed above.

International Students

All international students shall comply with regulations of the U.S. Department of Immigrations and Customs, its Student and Exchange Visitor Program and all related policies of the University of Louisville International Center.

All international students must be registered with the University of Louisville International Center and must present evidence of financial resources that are adequate to support their educational and living expenses in the United States for the duration of their studies. Documentation showing that a University Fellowship or Graduate Assistantship has been awarded is normally considered evidence of adequate financial resources.

International students for whom English is not their primary language must show English language proficiency by demonstration of level of proficiency, specified by the program, on the TOEFL examination (www.toefl.org (<http://www.toefl.org/>)), IELTS examination (www.ielts.org (<http://www.ielts.org/>)), Duolingo examination (www.englishtest.duolingo.com (<https://englishtest.duolingo.com/applicants/>)) or demonstration of an accredited degree awarded by an acceptable institution which uses English as the primary language

of instruction. Scores must be sent to the Graduate School, Graduate Admissions directly from the testing agencies. The school code is 1838.

International student services and programs are organized and administered by the International Student and Scholar Services (ISSS) staff, located in the International Center. The Office serves as an administrative, advising, and programming unit for all international students at the University of Louisville. The staff is trained to assist international students in solving problems, handle matters with immigration, and answer general questions about life in Louisville or in the United States.

Please refer to the International Center website (<https://louisville.edu/internationalcenter/>).

Admissions

Upon receipt of the application for graduate studies, application fee and credentials, the graduate program will evaluate the application package and specify the admission status and any conditions of admission. The official admission letter will come from the graduate program or the enrollment unit Dean or designee.

Degree status – good standing: In order for a student to be recommended for admission without conditions to degree status in good standing, all admission credentials must have been received and evaluated. The applicant must have earned a minimum grade-point average as specified by the enrollment unit. Each applicant should consult the specific graduate program descriptions in this catalog to determine any additional admissions criteria or any more restrictive requirements for admission to this status.

Degree status – provisional: This status is intended for students whose application materials are incomplete (usually missing required credentials or letters), but who have submitted the application form and application fee. Students in provisional status must also meet the general academic requirements of their program. Students may not enroll for a second consecutive term in provisional status. Not all graduate programs allow admission on a provisional basis. A student admitted on a provisional basis has one semester to furnish any credentials missing at the time of admission.

Degree status – special conditions: This status is intended for students whose applications are complete, but whose academic background is below the minimum for their program. Students admitted in this status will be expected to meet certain criteria within a specific time-frame outlined by the admitting graduate program.

Degree status – provisional/special conditions: An applicant who has both an incomplete application and academic criteria below the minimum may be admitted in this status, pending program approval. Students in this status will be expected to meet certain criteria within a specific time frame outlined by the admitting graduate program, as well as one semester to furnish any credentials missing at the time of admission.

Degree status – provisional probation: An applicant who does not meet graduate school and department/unit's minimum requirements may be admitted in provisional probation. The unit/department must file for admission variance request to the graduate school. The admission variance request will be reviewed and approved and/or denied by the Vice Provost for Graduate Affairs. Students admitted in this status will be expected to meet certain criteria within a specific time frame outlined by the admitting graduate program.

Graduate Admissions Hold

Graduate students admitted Provisional Probation/Provisional/Special Condition status will have a Graduate Admissions Hold placed on their academic record. This hold will be placed approximately one week prior to the beginning of registration on all current students whose status has not been changed to good standing. The hold will be placed by the Graduate School.

Returning students who were admitted Provisional Probation, Provisionally, and/or with Special Conditions who wish to re-enroll will be evaluated to determine if their conditions were met. Upon submitting a request to re-enroll form to the Registrar's office, the Registrar's office will forward for review by the Graduate School. If the student is not eligible to be changed to good standing, a Graduate Admissions Hold will be placed on the student's academic record prior to the processing of the re-enrollment form.

Additional Considerations for Admission to Degree Status

A student admitted with an undergraduate grade point standing of less than the minimum of the enrollment unit may be subject to program limitations on the number of hours in which he/she may enroll for each semester. Students who do not meet any other departmental requirements outlined in the admission letter may be subject to academic dismissal from their program.

No applicant with a grade-point average of less than 2.50 will be admitted to a program of graduate study. Under unusual circumstances, programs that wish to admit students who do not meet this standard must submit a variance request to the Vice Provost for Graduate Affairs.

Non-degree status

Applicants who do not desire to seek an advanced degree but wish to take graduate course work may be permitted to enroll in non-degree status. Please note that not all programs will admit students to non-degree status. Application credentials must include a completed application for admission, application fee and an official transcript showing the award of a baccalaureate degree. No more than nine (9) credit hours of course work taken in a non-degree status may be applied to a graduate degree program with departmental approval, and no more than fifteen (15) credit hours may be accumulated while in non-degree status.

Visiting Students

A graduate student from another university or college may enroll for graduate course work as a visiting student at the University of Louisville with the approval of the graduate program director or department chair. The visiting student is responsible for having the home institution provide a letter certifying that the student is in good standing. A graduate application and fee are required and transcripts may also be required by some departments.

University of Louisville graduate students who attend another college or university as visiting students must have the permission of their department chair, program director or major advisor. The guidelines for the Transfer of Credit (p. 11) stated in the graduate catalog apply to all credits earned as a visiting student. Visiting student status may be granted only to a student who is in good standing.

New Graduate Student Information Overview

The University of Louisville operates on a semester system that includes a Fall semester, Spring semester, and Summer semester with multiple terms. The university has a computerized admissions and registration system. Students are advised to include their full name and date of birth on all correspondence with the university to facilitate the identification of admission credentials and requests for information. Students who do not enroll for the semester for which they apply may contact their department and request their admission be changed to a future date. In some cases, applicants may be asked to reapply and resubmit credentials. The university holds credentials on applicants for a limited time.

Student Responsibility

It is the responsibility of the graduate student to become familiar with and observe all policies and requirements of the Graduate School and of his or her particular degree program and department. Policies, procedures, and requirements are subject to change, and it is the responsibility of the graduate student to keep her/himself apprised of current regulations. All students must respond to official notices issued by administrative offices and instructors, whether these notices be posted on official bulletin boards, are sent through postal, or email. A student's status is not dependent upon a written notification but is a consequence of circumstances in the admission process and the student's academic performance. Written notification is simply a verification of status.

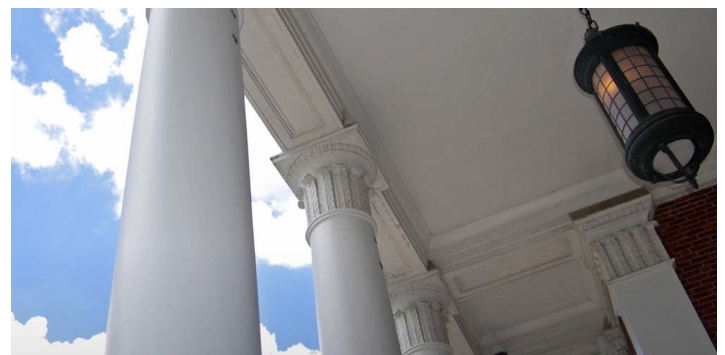
Graduate Credit

Courses listed in this catalog are offered for graduate credit. To receive graduate credit, a student must register for the course through the Graduate School or through another graduate-level program, such as a masters or doctoral program. Students who take courses as post-baccalaureate non-degree students, may not receive graduate credit for them.

Prerequisites

Prerequisites for all courses include graduate status and the consent of the graduate advisor (for registration). Specific course prerequisites are indicated in the course listing (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

General Policies, Procedures and Requirements



The general policies, procedures and requirements for advanced degrees are stated below; however, each program has specific degree

requirements. These specific requirements are detailed in the program descriptions that follow this section. These requirements must be consulted so that the graduate student can be fully apprised of the conditions he/she must meet in order to receive an advanced degree.

The policies and regulations described in this catalog cannot be superseded or invalidated by either oral or written agreement with faculty, staff, or administrators unless a variance is confirmed in writing by the Vice Provost for Graduate Affairs, in consultation with the Graduate Council.

Registration

Students may register for courses during the priority early registration period before the beginning of the semester. A student's first opportunity is based on classification and alphabetic rotation. The early registration period is then followed by regular and late registration. The registration calendar for any term is published online by the office of the registrar.

Initial registration and any later registration changes are usually completed by students through the registration link of the ULink online portal (<https://ulink.louisville.edu/>).

Initial registration must be completed by the date announced by the registrar, typically the fifth day of classes. Students may make adjustments to their course schedule until the end of the first week for regularly scheduled fall and spring courses. For summer courses and courses with atypical duration, the last date to adjust schedules is specified by the registrar in the official registration calendar. This last day to adjust schedules is referred to as the last day to drop/add.

Students may *add* courses to their schedules until the last day to drop/add. No signature or other authorization is required if the added course is open for enrollment, if students meet all course prerequisites, and if such additional courses do not raise the students' credit#hours for the term above the maximum allowed by the students' enrollment unit or academic standing. If the addition increases the tuition cost for the semester, the additional payment must be settled with the university bursar by the last day to drop/add.

Students can place their names on the *waitlist* for a course that is closed.

Students are automatically moved from the waitlist to registration in the course as spaces open until the end of the first week of classes.

Students may add their names to the waitlist until the third day of classes for regularly scheduled fall and spring courses, and the first day of classes for summer courses.

Students may *drop* a course from their schedule until the last day of drop/add. Courses that are dropped during the regular registration period are not listed on the transcript. Students should consider how dropping a course will affect their progress toward their degree and their financial aid eligibility. Students who stop attending a class but fail to complete the drop process, regardless of the date when they stopped attending the course, will be given the grade of F for the course.

Students who wish to enroll in concurrent courses at another institution should consult their academic advisor before registration to ensure proper enrollment and recording of courses. Students in good standing who have earned a minimum of twelve hours may be able to cross-register at other universities in the Kentuckiana Metroversity consortium.

Cross registration is permitted on a space-available basis at the discretion of the member institutions. The combined program of work in all institutions may not exceed the maximum course load permitted for students at the University of Louisville. Failure to follow these guidelines

may result in loss of credit or ineligibility to transfer the credits from the other schools toward the requirements for graduation.

The University of Louisville uses an online web registration system. The schedule of courses for each term may be reviewed at Schedule of Classes (<https://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

Students must first contact their graduate advisor or Director of Graduate Studies to discuss course selections. Students in good standing and admitted without conditions may proceed with the registration process. If, however, a student has been admitted with conditions, or is in probationary status, the student must contact the Director of Graduate Studies regarding the implications of the admission status.

Full-Time Study

Full-time study for graduate students is defined as enrollment in:

- Nine (9) credit hours during the Fall semester, OR
- Nine (9) credit hours during the Spring semester, OR
- Six (6) credit hours during the Summer semester, OR
- In degree candidacy status.

Full-Time Study for University Fellows and Graduate Assistants

All University Fellows and Graduate Assistants receiving financial support must be enrolled as full-time students during the period for which they are receiving support.

Workload Limitations for Graduate Assistants

Graduate assistants who are supported by an assistantship, either as a GRA (research), GTA (teaching) or GSA (service), are limited to 20 hours of work per week on service related to the graduate assistantship.

However, students may be eligible to work an additional 9 hours per week with the possibility to earn income for the work. Graduate students are first and foremost students, and the additional work must provide professional development for the student. The duration of the additional work is typically within one semester, and waivers must be filed every semester the student seeks additional work.

International students who have an F1 VISA may be eligible for this waiver, but they must abide by UofL policies, which limit the amount of additional work for both domestic and international students to 9 hours per week over the course of the semester, as well as federal regulations governing Curricular Practical Training (CPT) for F1 VISA holders. CPT guidelines suggest the following:

- Typically, F1 VISA holders who are funded with an assistantship are not eligible for CPT during their first year of study (unless the program requires such a practicum in the first year);
- Additional work must be integral to the discipline and the work must be part of the program of study (preferably the student will receive academic credit for the work);
- CPT requires a signed cooperative agreement or letter from the employer attesting to the curricular nature of the work experience;
- A Designated School Official (DSO) must provide a new I-20 approving the student for employment. To approve a student for CPT, the DSO must have approval from both the Director of Graduate Studies in

the student's program AND the Dean of the Graduate School, as evidenced by completion and approval of the GA Workload Waiver Form (<http://louisville.edu/graduate/forms/ga-waiver-request/>).

The Chair of the student's department or the Director of Graduate Studies must complete the GA Workload Waiver form (<http://louisville.edu/graduate/forms/ga-waiver-request/>), which will be forwarded automatically to the Graduate School. If a student is funded as a GA by an external source, submission of this waiver affirms that the request falls within the student's current funding source regulations on additional aid. The Dean of the Graduate School, or the Dean's designee, must approve requests for students to perform additional work.

Catalog Year

The university issues a catalog annually in conjunction with the start of the summer term, and the degree requirements stated in the annual issue apply to all students who matriculate during that year. These requirements constitute the "catalog year" for those students and set their degree requirements as long as they are enrolled without a break of more than two calendar years. In other cases, a student may elect to follow the requirements of a later catalog year. The student's advisor will assist in identifying the need and benefit of such an election. The advisor must record this election in the student's permanent record.

Students may petition for a variance from the stated degree requirements of their catalog year. A variance must be reviewed by the Director of Graduate Studies or Department Chair, and the unit dean or their designee. The final decision is made by the Vice Provost for Graduate Affairs.

Students readmitted after two or more calendar years must reapply for admission. If readmitted, they are subject to the catalog year requirements in force at the time of their readmission.

Continuous Enrollment

Continuous enrollment is defined as being registered in both Fall and Spring if registering for course work. If a student has been admitted to either masters or doctoral degree candidacy, continuous enrollment in candidacy status is required for the Fall, Spring and Summer terms (only one term of registration is required in summer terms). Students must be enrolled during the semester in which they wish to graduate.

Course Loads

Normally, the maximum number of credit hours that may be taken in a regular semester is twelve (12). The maximum number of credit hours that may be taken in the Summer session (both terms) is twelve (12), including research hours.

Overloads

A student who wishes to enroll in more than the maximum number of credit hours must petition the unit dean to obtain permission.

Auditing Courses

Auditing at the graduate-level is available only to students who are enrolled in a graduate program. A student who wishes to audit a course must obtain permission from the course instructor and the director of the program in which the student is enrolled using the proper form provided by the Office of the Registrar. Auditing a course will not satisfy a prerequisite for a graduate course or a degree requirement.

Transfer of Credit

UofL generally accepts transfer credits earned at institutions of higher education accredited by the following institutional accreditors, which are recognized by the U.S. Department of Education:

- Higher Learning Commission (HLC)
- Middle States Association of College and Schools, Commission on Higher Education (MSCHE)
- New England Association of Schools and Colleges, Inc., Commission on Institutions of Higher Learning (NEASC-CHE)
- Northwest Commission on Colleges and Universities (NWCCU)
- Southern Association of College and Schools Commission on Colleges (SACSCOC)
- Western Association of Schools and College, Accrediting Commission for Senior Colleges and Universities (WASC-SCUC)
- Western Association of Schools and College, Accrediting Commission for Community Colleges and Junior Colleges (WASC-ACCJC)

To check on the status of an institution's accreditation, please visit U.S. Department of Education (<https://ope.ed.gov/dapip/#/home>) website.

The number of credit hours transferable, upon request, is six (6). Up to six (6) additional credit hours may be petitioned, provided that these additional hours are not credits earned by extension, thesis or practicum and provided also that the residency requirement of 24 semester hours is maintained by the addition of University of Louisville credits to the total program.

Course work taken more than three years prior to the student's application to a graduate program will not normally be considered for transfer; however, such requests will be reviewed by the Vice Provost for Graduate Affairs upon recommendation by the department chair and the unit dean.

The course work being considered for transfer must have been taken while the student was enrolled in an accredited graduate or professional school and must be evaluated for transfer by the Director of Graduate Studies in which the student is seeking additional graduate work. Six (6) credit hours may be transferred from a previously earned master's degree toward a doctoral degree or a second master's degree, subject to the approval of the degree program and the unit dean. Hours earned toward a culminating experience such as a thesis, practicum, or internship shall not be transferable to the second master's degree. Only courses in which the student earned grades of B or better will be considered for transfer. Hours and quality points earned at other institutions are not included in the calculation of a student's grade point average.

Courses in which grades of P were earned must have the approval of the unit dean in order to be transferred.

Transfers of graduate credit from constituent schools and colleges of the University of Louisville are not subject to the above limitations on transfers but require the recommendation of the department chair and the approval of the unit dean. Upon approval of the graduate program, students may apply the coursework from no more than one certificate program towards a graduate degree program.

Satisfactory Progress

All graduate students are expected to make steady and satisfactory progress toward the completion of degrees. Students who are not enrolled for a period of more than 12 months will be considered to have

withdrawn from the program. Students who seek to return after such a period of time must contact the graduate program director. Based on the request of the graduate program, the unit dean will consider the student for readmission.

Satisfactory progress also requires maintaining the standards of academic and professional integrity expected in a particular discipline or program and, in some disciplines, may include demonstration of the ability to function as a professional practitioner. Failure to maintain these standards or demonstrate such abilities may result in the student's termination from the program.

Degree Candidacy

Students enter Degree Candidacy upon completion of all course work, qualifying exams, required research credit hours and other co-curricular requirements. Students who are enrolled in degree candidacy are considered full-time students. While in Degree Candidacy, it is the responsibility of both student and mentor to maintain contact to ensure continuous progress towards the completion of the degree. In some cases, a master's student may complete the requirements of a degree program without the need to enter Degree Candidacy.

Although students must complete all required courses before entering Degree Candidacy, they have the option of taking additional specialized courses, e.g., courses offered by visiting or new faculty, while in Degree Candidacy (in those cases payment of both the candidacy fee and the course tuition will be required).

When all other degree requirements are met, students may enroll in Degree Candidacy in order to meet the requirement that all students must be enrolled during the semester in which they wish to graduate.

Degree Programs must inform the Vice Provost of Academic Affairs when students have met all requirements and are ready to enter Degree Candidacy. Once a student is admitted to candidacy, enrollment in Degree Candidacy status must be continuously maintained year round (i.e. Fall, Spring, and Summer) until the degree is awarded. The only exception to this policy of continuous enrollment is if the unit dean and the Vice Provost of Graduate Affairs have granted the student a formal leave of absence.

Once a student initially enrolls in Degree Candidacy, the Registrar will automatically enroll the student in Degree Candidacy until the student applies to graduate, with the exception of the following:

- a. Failure to pay the candidacy fee will cancel a student's enrollment.
- b. If a student has any type of hold on the account, the student will no longer be enrolled automatically in Degree Candidacy. To reestablish enrollment in Degree Candidacy, students will be required to pay the candidacy fee for each semester during which candidacy was voided and/or not maintained. To restore Degree Candidacy, the student must contact the Director of Graduate Studies in their degree program.

Time Limitations for Degree-Seekers

Master's students must complete the degree requirements within six years of beginning the program of study. Doctoral students have four years after passing the qualifying exams to finish all other degree requirements. While granting an extension of time is rare, requests for extension of time must be submitted in writing to the Director of Graduate Studies of the student's department. Once reviewed by the department, the request is forwarded to the unit dean, and then to the

Vice Provost for Graduate Affairs with supporting documentation for review. Students must be considered in good standing for the request to be considered.

Academic Standing

Good Standing

A graduate student is in good standing as long as the graduate grade point average is 3.0 or higher on a 4-point scale. A student must be in good standing in order to receive a degree.

Academic Probation

Any student with a semester GPA below 3.0 will receive an academic warning from the Graduate School. A notification will be sent to the student as well the student's graduate program. Should a student's cumulative GPA fall below 3.0, the student will be placed on academic probation until the student regains a 3.0 average (which is required to graduate). Ordinarily students are not permitted to continue on academic probation for more than one semester, but upon request of the student's graduate program, the unit dean may submit a variance request to the Vice Provost for Graduate Affairs to approve continuation of academic probation beyond a single semester. Students on academic probation for more than one semester risk dismissal from the graduate program.

Graduate programs have the prerogative to establish more stringent criteria for which students may be placed on academic probation.

Academic Dishonesty

Plagiarism, cheating and other forms of academic dishonesty are serious violations of academic conduct and may result in permanent dismissal. Students are expected to be familiar with the various forms of academic dishonesty as explained in the Code of Student Rights and Responsibilities (<http://louisville.edu/dos/students/studentrightsandresponsibilities/>). A plea of ignorance is not a defense against the charge of academic dishonesty.

Degree Requirements

Requirements for the Doctoral Degree Special Considerations for Doctoral Studies

In addition to the particular rules of the various graduate programs as stated in their sections of this catalog, the following general rules apply to all doctoral degree programs.

The award of a doctoral degree indicates that a student has attained mastery of a field and has demonstrated the capacity to perform independent scholarly research. Accordingly, no specific minimum number of credit hours has been established for doctoral degree programs. However, ordinarily the equivalent of three years of full-time graduate study is a minimum.

The doctoral degree is not awarded solely upon completion of a curriculum of courses, even though the student has done superior work in them; rather, it is awarded in recognition of creative scholarship as demonstrated by a substantial contribution in the candidate's chosen field. Only students who offer promise of meeting this high standard will be accepted by a graduate program to begin work toward this degree. Doctoral degree programs typically have more restrictive criteria for admission than those for admission to a master's degree program. The prospective student should consult in person with the graduate program in which he/she wishes to major.

Program of Study

Each applicant for the doctorate is expected to take such courses as may be required for both a strong foundation in the field and the development of a specialization. The student's program will consist of a major field and such minor fields as the major professor, the student, the program faculty, and department chair may agree upon. This program may be modified at any time upon the recommendation of the major professor and approval of the department chair and the dean of the unit.

All courses offered by the University, at any level and in any school, shall be accessible to the doctoral student, subject to approval by the instructors.

Residency for Doctoral Students

To ensure that doctoral students have the opportunity to participate fully in the intellectual life and research atmosphere of the University, at least two years of study must be spent at the University of Louisville and at least one must be spent in full-time residency (except as indicated below). The two-year requirement allows students to build mentoring relationships with faculty members and accrue classroom and research experience over time, while the full-time residency requirement is designed to provide students with at least one year of immersive, intensive study.

According to the Council of Graduate Schools, residency advantages students in the following ways: ". . . fluency in the language and vocabulary of the [field of] specialization is enhanced by frequent and close association with other students in the same field; competence in the field is enhanced by close familiarity with the university's libraries; valuable experience is gained by attending and participating in both formal and informal seminars, colloquia, discussions led by specialists visiting from other campuses, laboratories, or governmental research groups; and thesis or dissertation research is facilitated by frequent consultation with the advisor."

Full-time residency requires that a student be registered for a minimum of 18 credit hours within a twelve-month period. Registration for candidacy cannot be used to meet this requirement.

Alternative Residency Track

All doctoral students must meet the two-year enrollment requirement. Students enrolled in part-time doctoral work may substitute four terms of continuous enrollment (summer terms can be used to meet this requirement) for the full-time residency requirement.

Programs that allow part-time and/or off-site participation must provide a rationale to the Vice Provost for Graduate Affairs, indicating how they ensure that such students have access to an intensive and immersive educational experience. The rationale must be approved by the Vice Provost for Graduate Affairs and be on file in the Graduate School.

Foreign Language Requirement

Foreign language proficiency is no longer a general requirement for graduate degrees. However, certain graduate programs may have established such requirements, which will be specified in their sections of this catalog.

Qualifying Examination and Candidacy

The applicant for a Doctor of Philosophy or Doctor of Education degree must pass a qualifying examination, oral or written, or both. Its purpose is to verify that the student has sufficient understanding of and competence in his/her field to become a candidate for the degree. This

examination may be referred to by some programs as the preliminary, comprehensive, or candidacy examination. To be eligible for this examination, the student must have satisfactorily completed the major portion of the prescribed course work and must have met the foreign language requirement of the program, if applicable. It is the student's responsibility to be aware of the program's policy on the consequences in the case of failure of all or part of the examination. A student who fails the examination may not be allowed to retake it more than once.

A doctoral degree student must have been admitted to candidacy not later than the end of the ninth month prior to the awarding of the degree, that is:

- August graduation: November 30 of preceding year
- December graduation: March 31 of same year
- May graduation: August 31 of preceding year

Although the prescribed course work may have been completed, the candidate must maintain an active registration status until the degree is awarded (see the catalog section on General Academics Policies and Requirements (p. 11)).

Time Limitation

The candidate must complete all other requirements for the doctoral degree within four calendar years after passing the qualifying examination. In exceptional cases, the Vice Provost for Graduate Affairs is empowered to grant limited extensions of this four-year period.

Dissertation

A dissertation is required of all candidates for the degree of Doctor of Philosophy or Doctor of Education. It is to be a scholarly achievement in research, and should demonstrate a thorough understanding of research techniques in the field of inquiry and the ability to conduct independent research.

The dissertation shall be read by a reading committee, chaired by the major professor, and appointed by the unit dean upon the recommendation of the chair of the major department. This committee shall consist of not fewer than four members, and must include one representative from outside the program. All members must be qualified to serve on the committee as specified by their Unit's Guidelines for Graduate Faculty. The dissertation must be approved by the committee and the chair of the major professor's department.

The final manuscript is submitted electronically to the Graduate School through ThinkIR (<https://ir.library.louisville.edu/>), directions on submission will be provided upon review of the dissertation by the Graduate School. The final copy is submitted as a PDF. Along with the PDF the student is required to submit a digital/electronic (<http://louisville.edu/graduate/current-students/thesis-dissertation-information/>) copy of the signature page or hard copy of the signature page, which should be on white paper with original signatures. The digital/electronic or the original signature page must be submitted to the Graduate School.

Some programs may require students to submit a copy of the dissertation or signature page to the department; please check with your program director.

Standards for the Preparation of Thesis and Dissertations (<http://louisville.edu/graduate/current-students/thesis-dissertation-information/>)

thesis-dissertation-guidelines-1/) are available on the website of the Graduate School. Alternate standards must be approved by the Vice Provost for Graduate Affairs if in conflict with this standard.

Each student who is required to submit a dissertation to fulfill degree requirements must follow the guidelines for the Preparation of Thesis and Dissertations (<http://louisville.edu/graduate/current-students/thesis-dissertation-information/thesis-dissertation-guidelines-1/>). Prior to submission of the final copy of a dissertation, students must contact the Graduate School to schedule a review of the document.

Final Oral Examination

The final oral examination is to be a defense of the dissertation and a demonstration of the candidate's mastery of his/her field. The examination will be given by a committee of Graduate Faculty members appointed by the unit dean upon recommendation of the chair of the major department. The committee will be composed of a minimum of four qualified graduate faculty members, one of whom must come from outside the student's program. The major professor and the remaining Committee members must be qualified to serve as specified by the unit's guidelines for graduate faculty. The examination committee for doctoral students in Interdisciplinary Studies will be approved by the Dean of the Graduate School upon recommendation of the major professor.

The Dean of the Graduate School shall notify all members of the Graduate Faculty at least one week in advance that they are invited to participate in the examination, but only members of the committee may vote. At the discretion of the major department, a portion of the examination may be written.

The examination must be taken at least fourteen days before the end of the semester in which the degree is to be granted. To be passed in this examination, the student may not receive more than one abstention or dissenting vote.

Requirements for the Master's Degree

The departmental announcements in this catalog should be consulted in all instances; however, the following rules apply to all master's degree programs.

Course Credit

A minimum total of 30 credit hours of graduate credit is required for the master's degree. At least 15 credit hours must be in courses of the major subject area, and the remaining hours in the program distributed as recommended and approved by the major department. At least one-half of the credits counted toward the degree (exclusive of thesis, practicum and internships) must be in courses open to graduate students only (600 level or above). A grade average of 3.0 or better must be maintained.

Residency for Master's Students

Master's students must take at least 24 credit hours of coursework at the University of Louisville to satisfy the residency requirement for the master's degree.

Time Limitation

There is a time limit imposed, stipulating that credit earned more than six years prior to the completion of the degree may not be counted toward meeting its requirements. This time period may be extended upon

recommendation of the student's department chair, unit dean and the approval of the Vice Provost for Academic Affairs.

Maintaining Candidacy

Refer to previous section entitled, General Academic Policies and Requirements (p. 11), see subsection entitled Maintaining Candidacy.

Thesis

Students completing degree programs that include a thesis must submit the thesis to their major professor at least thirty days in advance of graduation (guidelines may be found on the Graduate School website (<http://louisville.edu/graduate/current-students/thesis-dissertation-information/>)).

Acceptance of the thesis shall be at the discretion of a special reading committee composed of the major professor and two other committee members. One member shall be from outside the program, and all three members must be qualified to serve on those capacities as specified by their unit's guidelines for Graduate Faculty. The committee shall be approved by the unit dean upon recommendation of the chair of the major department. The committee shall complete its review of the thesis at least one week prior to the final oral examination.

The final manuscript is submitted electronically to the Graduate School through ThinkIR (<https://ir.library.louisville.edu/>), directions on submission will be provided upon review of the thesis by the Graduate School. The final copy is submitted as a PDF. Along with the PDF the student is required to submit a digital/electronic (<http://louisville.edu/graduate/current-students/thesis-dissertation-information/>) or hard copy of the signature page, which should be on white paper with original signatures. The digital/electronic or original signature page must be submitted to the Graduate School.

Standards for the Preparation of Thesis and Dissertations (<http://louisville.edu/graduate/current-students/thesis-dissertation-information/thesis-dissertation-guidelines-1/>) are available on the website of the Graduate School. Alternate standards must be approved by the Vice Provost for Graduate Affairs if in conflict with these standards.

The thesis normally carries three-six (3-6) credit hours of graduate credit, which is in addition to the 15 credit hour minimum taken within the major department. In certain departments, a professional paper or portfolio may be required in lieu of a thesis. For procedures in these instances, consult the Director of Graduate Studies or the chair of the department.

Each student who is required to submit a thesis to fulfill degree requirements must follow the guidelines for the Preparation of Thesis and Dissertations (<http://louisville.edu/graduate/current-students/thesis-dissertation-information/thesis-dissertation-guidelines-1/>). Prior to submission of the final copy of a thesis, students must contact the Graduate School to schedule a review of the document.

Final Oral Examination

The final oral examination shall be conducted by a committee of Graduate Faculty members recommended by the chair of the major department and appointed by the unit dean.

The examination must cover the materials presented in the thesis and may include the content of courses taken or other matters pertinent to the candidate's admissibility to the master's degree. At the discretion of the graduate program, a portion of this examination may be written. The recommendation for the degree shall be determined by a simple majority of the committee members. The examination must be taken at least

fourteen days before the end of the semester in which the degree is to be granted.

In the event of an unfavorable vote, the committee may refuse the candidate's admissibility to the master's degree, or it may recommend another examination with or without additional work.

Requirements for Graduate Certificate Programs

The following rules apply to all graduate certificate programs.

Course Credit

Graduate certificate programs must require at least nine (9) credit hours of graduate coursework at the 500 level or above. Students must achieve a 3.0 or better cumulative grade point average and be in satisfactory standing to be awarded a certificate. Students may apply course credit earned from one or more graduate certificate programs towards a master's or doctoral degree, but they must submit an application to the degree program prior to beginning a second certificate that will count toward the degree. Use of credit from certificates is subject to admission to the degree-granting program, and must be consistent with both curricular and residency requirements of the degree program.

Requirements for Accelerated Bachelor's-Master's Programs

Undergraduate students will follow the departmental process to apply for admission to the accelerated program before beginning their final 30 credits of **the bachelor's program**. Only exceptional students who meet all admissions requirements will be eligible for admission to accelerated programs; those who are admitted will be allowed to enroll in graduate coursework in their final 30 hours of the undergraduate program. Students who meet the program guidelines for successful completion of the graduate coursework as an undergraduate may then apply for admission to the master's program.

Students applying for admission to a 30-hour to 35-hour master's program may take a maximum of nine (9) credit hours as an undergraduate which will count toward both the bachelor's and the master's degree; those applying to a 36-hour or more master's program may take a maximum of twelve (12) credit hours that will count toward both the bachelor's and the master's degrees (the guiding principle is that no more than one-third of a student's coursework may be double-counted for two different degrees at different levels).

Graduate credits taken while in a bachelor's program must be transferred to the student's graduate record after the student has completed one semester as a graduate student.

See specific programs for further requirements for applying to an accelerated program.

Application for Degree

Degrees are awarded in August, December, and May. Candidates who expect to receive degrees on a particular award date must complete the application for degree on ULink (<http://ulink.louisville.edu/>) before the deadline specified on the Office of the Registrar website (<https://louisville.edu/registrar/commencement-information.html>).

The University holds two commencement ceremonies each year. For specific information regarding the ceremonies, apparel, dates, etc.

please visit the Commencement website (<http://www.louisville.edu/commencement/>).

Grades and Grading Policies

University Grade Point Average (GPA)

The GPA appearing on the University transcript at the end of each semester of enrollment will be the official GPA for determining academic standing. The GPA will be based upon all courses taken while the student is enrolled as a graduate student, including undergraduate courses. Courses taken at the 500-level and above will be counted as graduate courses. While possibly including undergraduate coursework, this transcript will determine the overall Graduate GPA. The program faculty and unit dean will monitor this Graduate GPA to ensure students maintain at least a 3.0 to remain in good standing.

Grading System

Graduate programs at University of Louisville utilize a plus/minus grading system.

The following is the grading scale:

Grades	Quality Points
A+	4.0
A	4.0
A-	3.7
B+	3.3
B	3.0
B-	2.7
C+	2.3
C	2.0
C-	1.7
D+	1.3
D	1.0
D-	0.7
F	0.0

C Grades

The student's academic program may approve six (6) credit hours of coursework in which a grade of C+, C, or C-minus was received to count toward the completion of degree requirements.

Approval of the Vice Provost for Graduate Affairs must be secured in order to count additional hours with any grade of C in any course that is part of the degree program. In no case may more than nine (9) credit hours of C be used to fulfill graduate degree requirements. Units or programs may choose not to permit any courses in which a grade of C+, C, or C-minus has been earned to be used in fulfillment of degree requirements. Although grades below C-minus will be calculated in the graduate student's grade point average, courses in which these grades have been earned will not be counted towards the fulfillment of degree requirements.

Other Grades

W - means Withdrew and carries no quality points. No student may withdraw from any course after the published drop date. In exceptional cases, the unit dean may grant a student's request to withdraw from

courses because of illness or conditions beyond the student's control. Poor performance is not a valid reason to grant an exception.

I - means Work in Course Incomplete. If the work is not completed by the end of next term, regardless of whether the student is enrolled, the I automatically becomes an F.

X - means course work has not been finished because of the nature of the research or study involved, e.g., thesis or dissertation work. This grade is reserved for courses that by their nature extend beyond one semester. This grade may not be used for coursework that is confined to a semester but not completed by the student.

Graduate students enroll in courses on a term basis. Graduate courses may not be extended beyond the enrollment term, except as noted for open-ended courses eligible for the X or deferred grade. An I grade does not extend the course, but rather extends the time a student has for completion of work assigned in the course. The I must be removed within one semester and the new grade assigned for the term in which the student was originally enrolled or the I is changed to an F.

Pass/Fail Grading Option

Each program has the discretion of extending a Pass/Fail option to any or all of its graduate students and graduate courses.

When using the Pass/Fail option for graduate students enrolled in graduate courses, A+ through C-minus will be passing grades and D+ through F will be failing grades.

Changes of Grades

No changes of grades can be made without a request and explanation on the part of the faculty member giving the grade and the approval of the unit dean.

Missing Grades

All missing grades will be changed to failing grades one year after the completion of the semester in which the course was taken.

Repetition of Courses

A student who has received the grade of C (in a course that is a degree requirement), D, or F may repeat that course upon the approval of the graduate program advisor and the unit dean. When a student repeats a course, the grade point average will be calculated on the basis of the last grade earned, although all previous grades will remain on the transcript.

Graduate Student Academic Grievance Procedure

Introduction

This procedure is designed to provide fair means of dealing with student complaints regarding a specific action or decision made by the faculty or a faculty member.

Students who believe they have been treated unfairly, discriminated against, or have had their rights abridged may initiate a grievance.
(The Redbook (<http://louisville.edu/provost/redbook/>), Section 6.8.1)

Preliminary Steps

To pursue a grievance concerning academic matters within the academic unit, the following steps of the grievance procedure should be observed:

- a. The student should first discuss the matter with the person involved and attempt to resolve the grievance through informal discussion.
- b. If there is no resolution, the student should discuss the matter with that person's supervisor or the person to whom such person reports, who should attempt to mediate a resolution.
- c. If the student has not been able to obtain a resolution, he or she may request the Student Grievance Officer (<https://louisville.edu/dos/students/studentpoliciesandprocedures/student-grievance/>) (S.G.O.) to attempt informal mediation of the problem.
- d. If the matter has not been satisfactorily resolved through the informal process, the student shall submit a written statement of the grievance to the Unit Academic Grievance Committee through the Office of the Dean. The statement shall contain:
 - i. A brief narrative of the condition giving rise to the grievance;
 - ii. Designation of the parties involved; and
 - iii. Statement of the remedy requested.

Committee Action

Upon receipt of the written statement, the Unit Academic Grievance Committee, or its representatives, shall:

- a. Contact the student and the Student Grievance Officer to obtain assurance that all steps of the above informal process were completed and that those issues in the statement were discussed at all levels.
- b. Notify the parties named in the statement of the grievance naming them; and send a copy of the statement to the named parties and to all committee members.
- c. Notify the grievant and the respondent of the right to challenge committee members for cause, and request early notification of challenge(s) to expedite the grievance procedure. Included in this notification will be a list of the names of all current, regular committee members.
- d. Meet within twenty working days after receiving the written statement of any grievance and recommend to the dean of the unit whether sufficient grounds exist to accept a case for hearing. The committee shall hear the case when the dean concurs. The committee shall notify, in writing, all persons directly involved as to the reasons for its recommendation.
- e. The action of the grievance committee as to whether to grant a hearing when accepted by the dean of the unit shall be final and binding on all parties except when subject to the condition of appeal.
- f. If a hearing will be held, notify in writing all the parties involved, including any witnesses, of the date, time and place of the hearing at least ten days prior to the hearing date (which shall be within 30 working days of receipt of the written grievance).
- g. Request in writing from all parties involved any pertinent material deemed necessary for review by the committee prior to the hearing. These materials, and any additional materials either party chooses to submit, must be submitted to the committee not later than four days prior to the hearing. Any person named in a grievance may submit a written statement to the committee outlining issues from that person's perspective.
- h. Maintain confidentiality throughout the entire grievance process. All communications among the committee, the grievant(s), and the person(s) named in the statement of grievance will be confidential.

Hearing Process

All hearings conducted by the Unit Academic Grievance Committee shall be conducted confidentially in the following manner:

- a. The grievant(s) and the respondent(s) must be present during the information-gathering portion of the hearing. Witnesses will be available and will be called when needed. The committee reserves the right to allow the presence of a secretary or a technical assistant.
- b. All statements during the information-exchange phase of the hearing will be tape-recorded. This record will be preserved in the University Archives for a minimum of five years and shall be confidential.
- c. Any committee member may question any of the participants at the hearing.
- d. The grievant will present his or her statements and/or witnesses to the committee.
- e. The respondent will have the opportunity to question the grievant(s) and the witnesses about their statements.
- f. The respondent will present his or her statements and/or witnesses to the committee.
- g. The grievant will have the opportunity to question the respondent(s) about their statements.
- h. After all information is exchanged, all persons except the committee members and the recording secretary will leave the committee room. The grievant(s), the respondent(s), and the witnesses will continue to be available to the committee should further information be needed.
- i. The committee will meet in closed session to decide upon its recommendation(s) to the dean.
- j. The committee shall submit its report with recommendation(s) and reasons for the recommendation(s), to the grievant(s), the respondent(s), and the dean. If the grievance directly involves the dean, the report and recommendation(s) of the Unit Academic Grievance Committee shall be referred for decision to the appropriate academic vice president (now referred to as the University Provost).
- k. The student's grievance will not be included as part of the student's record, unless it results in a change in student status or the student voluntarily inserts the information.
- l. Until the grievance is resolved, the student may continue the natural academic progression through the academic unit, subject to the requirements of Article 6.6, "Academic Review, Advancement, Probation, and Dismissal of Students," and Article 6.7, "Nonacademic Disciplinary Procedures," of *The Redbook*.

Decision

The dean shall approve or reject the committee's recommendation(s) within twenty-eight days after receiving it (them). If the decision of the dean is not in accord with the committee's recommendation(s), the dean shall state the reasons for that decision, in writing, to all persons directly involved in the grievance and to the committee. The dean shall then take appropriate action to implement his or her decision after the time for appeal has elapsed.

Rehearing

A grievance committee, within twenty-one days after delivery of its report, may be petitioned to reconsider its decision upon the basis of evidence of misrepresentation of materials, facts, or upon the basis of newly discovered evidence clearly not available at the original hearing.

Appeal

Any party to the grievance may appeal to the University Student Grievance Committee within twenty-one days from the date of the final decision of the dean if the dean's decision does not concur with the recommendation of the grievance committee.

Leave of Absence

A student who has been accepted into a graduate program is expected to remain in continuous enrollment, either full-time or part-time, throughout his/her matriculation. Students who fail to enroll for a period of more than 12 months will be considered to have withdrawn from the program. Once a student enters candidacy, he/she must maintain continuous enrollment in degree candidacy (fall, spring, summer) and pay the appropriate candidacy fee.

However, if circumstances arise that may cause an interruption in graduate study a student may apply for a leave of absence by requesting such a leave from the unit dean. A requested leave cannot exceed one year; however, under extreme circumstances, a second, subsequent request may be granted by the Vice Provost for Graduate Affairs. Students must be considered in good standing for the request to be considered.

A student may not be enrolled in the university during a leave of absence. A student on a leave of absence is not required to pay tuition, fees, or candidacy fees, but is not entitled to any services from the university during the leave, including mentorship from faculty.

If a leave of absence is granted to a doctoral student in candidacy, the time limitation of completing all other requirements within four years after passing the qualifying examination shall be extended by the same time as the length of the leave. However, an appeal for an extension of this time limit, specifying the exact circumstances, can be included in the request for a leave or submitted as a variance request submitted to the department for their review and recommendation to the unit dean; the final decision rests with the Vice Provost for Graduate Affairs.

No degree will be granted to a student on an official leave of absence. The student must re-enroll in the next term following the conclusion of the leave and be enrolled in the term in which a degree is granted. A leave of absence does not relieve a student from adherence to policies regarding residency and candidacy (except that the time limit for candidacy may be extended, as indicated in the previous paragraph).

Policies Governing Graduate Courses

Graduate Courses

Courses with numbers from 500 to 599 may be open to both advanced undergraduate and graduate students and can be taken by graduate students for graduate credit. Those numbered 600 and above are primarily for graduate students.

Graduate Students Taking 500-Level Courses

Graduate students who wish to receive graduate credit for 500-level courses must complete additional requirements (such as additional written work or oral presentations) that are more stringent than those required of undergraduates. These additional requirements for graduate credit must be specified in the course syllabi. The student's completion of graduate requirements must be verified in writing by the instructor if graduate credit is requested after the course is completed.

Not all 500-level courses are available for graduate credit. The student is advised to consult his/her department for information on any particular 500-level course.

Undergraduates Taking Graduate Courses

Courses at the 500-level may be open to both advanced undergraduate and graduate students. Courses numbered at the 600-level and above are for graduate students only. Undergraduate students requesting to enroll in a 500-level course for graduate credit or in a 600-level course may do so only with special permission of the instructor in the course and the dean of the student's enrollment unit, be registered for at least one undergraduate course, have earned at least 60 credit hours of coursework at the undergraduate level, and have a cumulative GPA of at least 3.0. A maximum of nine (9) credit hours of graduate coursework may be applied to the undergraduate degree. Such graduate level courses will satisfy requirements toward the undergraduate degree and therefore cannot be used for subsequent graduate credit.

In rare cases, undergraduate students at the University of Louisville who are within six (6) semester hours of completing the baccalaureate requirements and who are enrolled in a graduate course may obtain graduate credit at the University of Louisville. This can only occur if the course has not been used to satisfy part of the baccalaureate requirements, and if the chair of the department involved and the unit dean approve.

Accelerated Bachelor's/Master's Option

Undergraduate students will follow the departmental process to apply for admission to the accelerated program before beginning their final 30 credits of **the bachelor's program**. Only exceptional students who meet all admissions requirements will be eligible for admission to accelerated programs; those who are admitted will be allowed to enroll in graduate coursework in their final 30 hours of the undergraduate program. Students who meet the program guidelines for successful completion of the graduate coursework as an undergraduate may then apply for admission to the master's program.

Students applying for admission to a 30-hour to 35-hour master's program may take a maximum of nine (9) credit hours as an undergraduate which will count toward both the bachelor's and the master's degree; those applying to a 36-hour or more master's program may take a maximum of twelve (12) credit hours that will count toward both the bachelor's and the master's degrees (the guiding principle is that no more than one-third of a student's coursework may be double-counted for two different degrees at different levels).

Graduate credits taken while in a bachelor's program must be transferred to the student's graduate record after the student has completed one semester as a graduate student.

See specific programs for further requirements for applying to an accelerated program.

Continuing Studies and Post-baccalaureate Students

Students enrolled through Continuing Studies are not eligible to enroll in graduate level courses.

Post-baccalaureate students who wish to take only graduate level courses should seek admission as a non-degree graduate student by applying through the Graduate School. Students who wish to transfer

coursework to a graduate degree must take the coursework as a non-degree graduate student or be admitted to a graduate degree program at the time of the request.

Graduate Student Awards and Honors



Student Awards

Programs may nominate graduate students for the following awards given at December and May commencement ceremonies. Those individuals who received their degrees in August must be nominated for consideration during the December commencement program.

Graduate Dean's Citation

Graduate Dean's Citations are awarded at each commencement to both masters and doctoral students recommended by their departments in recognition of superior accomplishment (e.g., publications, teaching excellence, and professional service) in their graduate studies beyond the achievement of a high grade point average.

To be eligible for a Graduate Dean's Citation, a student must have significant accomplishments (e.g. publications, teaching excellence, and professional service) beyond the achievement of a high grade point average. The letter of nomination should include a description of the nominee's achievements in the areas of scholarship, teaching, and service, as applicable. Each graduate program may recommend at least one prospective graduate, or up to 10 percent of its graduating class, for the Graduate Dean's Citation. Nominations may be submitted to the Vice Provost for Graduate Affairs for the December and May commencements.

Alice Eaves Barns Award

This award is named in honor of Mrs. Alice Eaves Barns for her many years of outstanding service as a staff member of the Graduate School at the University of Louisville. This award recognizes a master's degree recipient who has displayed tenacity in the face of adversity, while attaining excellence in both the classroom and outside endeavors. The award nomination letter must reference the difficulties the student had to overcome while in graduate school, and must specify the student's achievements.

All students nominated for the Alice Eaves Barns award are automatically considered for a Graduate Dean's Citation.

The Virginia "Jenny" Madden Award for Graduate Student Leadership and Service

This award is named in honor of Virginia "Jenny" Madden for her many years of service to the former Graduate School, the Staff Senate, and the University of Louisville community. This award recognizes a master's degree recipient who exhibits leadership through service to the

recipient's program, college, discipline, the University as a whole, and/or the community. The nomination letter must reference the student's contributions and the impact of those contributions on the communities served.

All students nominated for the Virginia "Jenny" Madden award are automatically considered for a Graduate Dean's Citation.

Guy Stevenson Award

The Guy Stevenson Award for Excellence in Graduate Studies honors a former Graduate Dean. The Stevenson Award recognizes an outstanding doctoral degree recipient who has demonstrated excellence in both scholarship and leadership within the discipline, and has made significant contributions to teaching and service, as applicable. The recipient of this award will carry the graduate school banner at the commencement ceremonies, and thus must be available for the ceremonies to be considered. This student will provide remarks of no more than five minutes during the Doctoral Hooding and Graduation ceremony and will also be a candidate for the student commencement speaker for the main commencement ceremony. The nomination letter must include program/discipline-specific standards of excellence to help the multi-disciplinary committee evaluate the nominee and a statement that the student will attend both commencement ceremonies.

All students nominated for this award are automatically considered for a Graduate Dean's Citation and for the John Richard Binford Memorial Award.

John Richard Binford Memorial Award

The John Richard Binford Memorial Award honors a former chairman of the Department of Psychology. The award is presented to a doctoral degree recipient who excels in scholarship, and has contributed to other areas within the discipline such as leadership, teaching, or service, as applicable. The nomination letter must include program/discipline-specific standards of excellence to help the multi-disciplinary committee evaluate the nominee.

All students nominated for this award are automatically considered for a Graduate Dean's Citation.

John M. Houchens Prize

The John M. Houchens Prize honors a former Registrar of the University. The Houchens Prize is awarded to the doctoral student whose dissertation has potential for significant impact on a field. The nomination letter must provide a description in lay language, accessible to faculty from various disciplines, of the significance of the dissertation work, the impact within the discipline and the broader applications of the work. An electronic copy of the nominated dissertation must be submitted to the Graduate School.

All students nominated for the John M. Houchens prize are automatically considered for a Graduate Dean's Citation.

Nomination Procedures:

The department Chair or DGS must submit the nomination material via the Graduate School website (<https://louisville.edu/graduate/forms/graduate-special-awards-nomination-form/>).

Faculty Awards

Department chairs and directors of graduate programs and former graduate students and those graduating at the May ceremony may

nominate a faculty member for the following awards given at the May ceremony:

Outstanding Mentor of a Doctoral Student Outstanding Mentor of a Masters Student

Mentor awards honor faculty members who are deemed to excel in one-on-one mentoring of master or doctoral students to the completion of their degrees; in other words, these awards are given to faculty who successfully direct theses or dissertations, supervise students in labs, oversee students' internships or final professional papers.

Provost's Award for an Exemplary Director of Graduate Studies

This award honors those who have graduate or professional student advising and/or administrative duties (as DGS) designated on their annual workload assignments and who excel at the work of advising graduate students regarding program requirements, career prospects, funding possibilities, and so on.

University Policies and Procedures



Student Grievance Officer

Students who have complaints, grievances, or concerns regarding courses taken at the University of Louisville or other University policies or services should contact the Student Grievance Officer to have the issues resolved in an expeditious, fair, and amicable manner. Students should first seek to resolve their complaints through informal discussion and administrative channels. The same resources are provided to on-campus and off-campus students.

The Student Grievance Officer (<https://louisville.edu/dos/students/studentpoliciesandprocedures/student-grievance/>) is responsible for informing students of their rights and obligations under the University's Student Grievance Procedures (<http://louisville.edu/provost/redbook/contents.html/chap6.html#ART68>). The Student Grievance Officer will seek to resolve informally as many grievances as possible. For assistance, please contact Dr. Joy Hart at joy.hart@louisville.edu or call (502) 852-6293.

Privacy of Student Records (FERPA)

The University of Louisville hereby notifies students concerning the Family Educational Rights and Privacy Act of 1974 (FERPA). This Act, with which the institution intends to comply fully, was designed to protect the privacy of educational records, to establish the right of students to inspect and review their education records, and to provide guidelines for

the correction of inaccurate or misleading information. Students also have the right to file complaints with the Family Educational Rights and Privacy Act Office, Department of Education, concerning alleged failures by the institution to comply with the Act.

The University has adopted a policy which explains in detail the procedures to be used by the University for compliance with the provisions of the Act and the regulations adopted pursuant thereto. Questions concerning the Family Educational Rights and Privacy Act may be referred to the office of University Counsel or visit the website at: louisville.edu/counsel/ferpa-1 (<https://louisville.edu/counsel/ferpa-1/>)

Drug-Free Schools and Campuses

Drug-Free Schools and Crime Awareness, Campus Security Information Report 1993, and Communities Act Amendments of 1989

Purpose and Goal

The University of Louisville is committed to protecting the safety, health and wellbeing of all students, faculty, and staff and other individuals in our workplace. As a recipient of federal grants and contracts, the university gives this notice to students, faculty, and staff that it is in compliance with the Drug-Free Workplace Act of 1988 (Pub. L. 100-690, Title V Subtitle D) and the Drug-Free Schools and Communities Act Amendment of 1989. Students, faculty and staff are herein notified of the standards of conduct that will be applicable while on university property, business, and/or at university-sponsored activities. This policy is incorporated and is a part of the official University of Louisville Policies and Procedures.

This policy recognizes that student, faculty, and staff involvement with alcohol and other drugs can be very disruptive, adversely affect the quality of work or academic performance of student, faculty, and staff, pose serious health risks to users and others, and have a negative impact on productivity and morale.

As a condition of employment or enrollment, the university requires that students, faculty, and staff adhere to a strict policy regarding the use and possession of drugs and alcohol. The university encourages students, faculty, and staff to voluntarily seek help with drug and alcohol problems.

Prohibited Behaviors

Under university regulations, federal law, state law, and, in some instances, local ordinance, students, faculty, and staff are prohibited from the unlawful possession, use, dispensation, distribution, or manufacture of illicit drugs on university property, on university business and/or at university-sponsored activities. Under this policy, students, faculty and staff are required to abide by state laws concerning alcoholic beverages.

Kentucky law (<https://apps.legislature.ky.gov/>) (KRS 244.085 (<https://apps.legislature.ky.gov/law/statutes/statute.aspx?id=50405>)) states that, if one is under the age of 21, it is unlawful to:

- Possess or consume alcoholic beverages,
- Misrepresent one's age for the purpose of purchasing alcoholic beverages, or
- Use a fake ID in an attempt to purchase alcoholic beverages.

It is unlawful for anyone of any age to:

- Procure any alcoholic beverages for anyone under 21 years of age,
- Drink or be intoxicated in a public place (Public Intoxication KRS 525.100 (<https://apps.legislature.ky.gov/law/statutes/statute.aspx?id=19929>))

University campuses and buildings are considered as public places for purposes of these laws, except for a facility licensed to serve alcoholic beverages, and a facility used as a private residence, unless university regulations state otherwise. Ordinances of the Greater Louisville area parallel the state laws.

The specifically defined standards of conduct, the disciplinary procedures, and the appropriate sanctions are detailed in the Code of Student Conduct (<http://catalog.louisville.edu/archive/2023-2024/undergraduate/university-wide-unit-specific-policies/student-conduct/>), Personnel Policies and Procedures (PER-5.01), Staff Handbook (Disciplinary Action, page 8.2) and *The Redbook*.

In addition, it is a violation of state law to operate a motor vehicle while under the influence of any substance that may impair one's driving ability (drugs or alcoholic beverages).

Prescription and over-the-counter drugs are not prohibited when taken in standard dosage and/or according to a physician's prescription. Any student, faculty, and staff taking prescribed or over-the-counter medications will be responsible for consulting the prescribing physician and/or pharmacist to ascertain whether the medication may interfere with job or academic performance.

The illegal or unauthorized use of prescription drugs is prohibited. It is a violation of our drug-free workplace to intentionally misuse and/or abuse prescription medications. Appropriate disciplinary action will be taken if job or academic performance deterioration and/or other accidents occur.

Consequences for Violating This Policy

Under university regulation, students who violate this standard of conduct are subject to student conduct action from a warning to expulsion from the University. Students who reside in university housing are subject to further conduct action that may vary from a warning to termination of their housing contract.

Notice of Drug-Related Conviction

In compliance with the Federal Drug-Free Workplace Act of 1988, any employee shall notify the immediate supervisor if the employee is convicted of a criminal drug offense occurring in the workplace or while on university business within five days of the conviction. The university shall take appropriate sanction and remedies in accordance within its policies. The provisions of this section are applicable to students who are employees of the university. If the employee is under a federal contract or grant, the university shall notify the contracting or granting agency of the conviction and of its actions. This section of this policy is also applicable to students who receive a Pell grant (federal grant).

Health Risks

The scope and impact of health risks from alcohol and drug use are both alarming and well documented, ranging from mood-altering to life-threatening, with consequences that extend beyond the individual to family, organizations and society at large. The university, therefore, conducts regular programs to educate its students, faculty, and staff that consumption and use of drugs may alter behavior, distort perception, impair thinking, impede judgment, and lead to physical or psychological dependence.

Alcohol and/or drug use may lead to the deterioration of physical health by causing or contributing to various health conditions including but not limited to fatigue, nausea, personal injury, insomnia, pathological organ damage, some forms of cancer, pancreatitis, heart attack, respiratory depression, birth defects, convulsions, coma, and even death. Alcohol and drug use may also result in deterioration of mental health by causing or contributing to various conditions such as increased aggression, hallucinations, depression, disorientation, and psychosis.

Alcohol consumption causes a number of marked changes in behavior. Even low doses significantly impair the judgment and coordination required to drive a car safely, increasing the likelihood that the driver will be involved in an accident. Low to moderate doses of alcohol also increases the incidence of a variety of aggressive acts, including spouse and child abuse.

Moderate to high doses of alcohol cause marked impairments in higher mental functions, severely altering a person's ability to learn and remember information. Very high doses cause respiratory depression and death. If combined with other depressants of the central nervous system, much lower doses of alcohol will produce the effects just described. Repeated use of alcohol can lead to dependence. Sudden cessation of alcohol intake is likely to produce withdrawal symptoms, including severe anxiety, tremors, hallucinations, and convulsions. Alcohol withdrawal can be life-threatening. Long-term consumption of large quantities of alcohol, particularly when combined with poor nutrition, can also lead to permanent damage to vital organs such as the brain and the liver.

Mothers who drink alcohol during pregnancy may give birth to infants with fetal alcohol syndrome. These infants have irreversible physical abnormalities and intellectual disabilities. In addition, research indicates that children of alcoholic parents are at greater risk than other children of becoming alcoholics.

Training, Counseling, and Resources

The University of Louisville is committed to the overall health and well-being of students, faculty, and staff and encourages a compassionate university.

Required online sexual assault prevention training programs

Consistent with federal law, UofL requires, as a condition of course registration, that all incoming students complete online sexual assault prevention training. Emails are sent to each student's UofL email account (beginning about 5 weeks before their first semester begins) to provide specific directions for accessing the training program. There is no fee for this program.

The university also recommends an online alcohol awareness training that is available. There is no fee for this program.

Visit the Title IX (<https://louisville.edu/titleix/>) website for more information.

Kentucky Medical Amnesty Law

KRS 244.992 (<https://apps.legislature.ky.gov/law/statutes/statute.aspx?id=42516>) Medical amnesty for persons reporting an alcohol overdose:

- (1) A person shall be immune from prosecution for the criminal offenses identified in subsection (2) of this section if:

(a) A law enforcement officer has contact with the person because the person:

- Requests emergency medical assistance for himself or herself or another person;
- Acts in concert with another person who requests emergency medical assistance; or
- Appears to be in need of emergency medical assistance and is the individual for whom the request is made

See KRS 244.992 for full text.

Good Samaritan Consideration

The health and safety of our students is of the highest priority. At times, students may need immediate medical or other professional assistance. However, students may be reluctant to get help because of concerns that their own behavior may be a violation of the Code of Student Conduct (<http://catalog.louisville.edu/archive/2023-2024/undergraduate/university-wide-unit-specific-policies/student-conduct/>). Although policy violations cannot be overlooked, the University will consider the positive impact of reporting an incident when determining the appropriate response for policy violations.

Continuous efforts are made to make students, faculty, and staff aware of programs that provide information and professional services on matters related to the abuse of alcohol and drugs.

The Building Resilience In Campus Community (BRICC) Coalition, Counseling Center, Health Promotion Office, The PEACC Center, and the University of Louisville Police Department provide a number of programs and workshops using a tiered approach: a) primary prevention in the form of awareness, skill-building, and risk-reduction for all students and b) targeted presentations for specific high-risk populations.

The University Counseling Center is committed to assisting students with their mental health, personal development, and academic development. Because substance use is often connected to other personal/psychological issues, students coming to the Counseling Center with alcohol and substance use concerns are provided with support, appropriate therapeutic interventions, and referrals when necessary.

- Building Resilience in Campus Community (BRICC) Coalition: (502) 852-3442; louisville.edu/bricc (<http://louisville.edu/bricc/>)
- Campus Health Services: (502) 852-6479; louisville.edu/campushealth (<http://louisville.edu/campushealth/>)
- Counseling Center: (502) 852-6585; louisville.edu/counseling (<http://louisville.edu/counseling/>)
- Health Promotion Office: (502) 852-5429; louisville.edu/healthpromotion (<http://louisville.edu/healthpromotion/>)
- The PEACC Center: (502) 852-2663; louisville.edu/peacc (<http://louisville.edu/peacc/>)
- University of Louisville Police Department: (502) 852-7233; louisville.edu/police (<http://louisville.edu/police/>)

Disability Resource Center

In recognition of disability as an important part of the diversity of our community, the Disability Resource Center fosters an inclusive campus climate through education, service, collaboration, and outreach to the University of Louisville community. We provide support for students

with documented disabilities by promoting equal access to all programs and services. Accommodations and support services are individualized, depending on the needs of each student.

The Disability Resource Center also offers an academic coaching program for students with disabilities. Peer coaches work with participating students one-on-one each week to provide support in meeting the demands of college coursework and staying organized.

Students are strongly encouraged to make early contact with the Disability Resource Center to assure adequate time to implement support services. Please visit louisville.edu/disability (<http://louisville.edu/disability/>) for more information, and feel free to contact us with questions at askdrc@louisville.edu or 502-852-6938.

Americans with Disabilities Act

The University of Louisville (UofL) is committed to providing equal opportunity for persons with disabilities. This commitment includes complying with the Americans with Disabilities Act of 1990 (ADA) and Section 504 of the Rehabilitation Act of 1973. UofL strives to maintain a barrier-free, welcoming environment for all qualified persons with disabilities.

The university's ADA Coordinator will monitor compliance and assists unit heads in meeting equal opportunity obligations. The ADA coordinator is located in the Dean of Students suite in the SAC:

ADA Coordinator
SAC-W301
(502) 852-5787
titleix@louisville.edu

The Disability Resource Center staff (502-852-6938) will assist the University community by serving as an information resource center and coordinating support services for students with disabilities. No otherwise qualified individual with a disability shall, solely by reason of such disability, be excluded from participation in, be denied benefits of, or be subjected to discrimination in university programs. The President, Board of Trustees, Student Government, Faculty and Staff Senates affirm UofL's long standing and continuing commitment to Equal Opportunity for persons with disabilities.

Formal Student ADA Complaint Procedure

The university has a continuing responsibility to monitor and maintain its compliance with the Americans with Disabilities Act of 1990 (ADA) and Section 504 of the Rehabilitation Act of 1973 (Section 504) and their implementing regulations. Internal student complaints alleging non-compliance with the ADA and/or Section 504 should follow the university's complaint procedure (<https://louisville.edu/disability/students/formal-complaint-procedure/>).

The university's formal complaint procedure provides for prompt and equitable resolution of complaints.

Complaints should be directed to the UofL ADA Coordinator at (502) 852-5787 or titleix@louisville.edu.

Filing a Formal Complaint of Disability Discrimination

A complaint must be filed in writing with the Coordinator. The complaint should contain the name and address of the person filing it and a brief description of the alleged violation. Upon receipt of the written complaint,

the Coordinator or his designee shall acknowledge receipt within five workdays.

A complaint should be filed within 180 days after the complainant becomes aware of the alleged violation; however, a complaint filed after that point may be investigated in accordance with this procedure as necessary, in the judgment of the ADA Coordinator, to ensure the university's compliance with the ADA and/or Section 504.

An investigation, as may be appropriate, shall follow a filing of complaint. The Coordinator's office shall conduct the investigation. This University complaint procedure involves an informal but thorough investigation, affording all interested persons and their representatives, if any, an opportunity to submit information relevant to a complaint.

Following completion of the investigation, a written determination as to the validity of the complaint and a description of the resolution, if any, shall be issued by the Coordinator's office and a copy forwarded to the complainant and any individually-named respondent within 60 days of the date the complaint was filed. Should extenuating circumstances (e.g., unavailability of key witnesses, family emergency of investigative staff, etc.) prevent completion of the investigation and determination process within 60 days, the complainant and any individually-named respondents will be timely notified in writing, and will be kept apprised of the status of the Coordinator's handling of the complaint through resolution. In all disputes arising under Section 504 or the ADA the proper standard of proof is preponderance of the information (i.e., more likely than not that the violation alleged in the complaint is true).

The Coordinator's Office shall maintain the files and records relating to the complaints filed.

Requesting Reconsideration of a Determination

The complainant (and any individually named respondent, as appropriate) may request a reconsideration if dissatisfied with the Coordinator's determination. The request for reconsideration should be made in written or electronic form within 15 workdays to the Coordinator's Office.

Requests for reconsideration must present information showing that:

- The original determination applied the incorrect standard or applied the applicable standard incorrectly to the facts of the case; or
- New information that might affect the outcome of the determination but was not available to the Coordinator at the time of the original determination is now available and should be considered.

The Coordinator shall, barring extenuating circumstances that preclude a more timely response (in which case the complainant shall be updated as to the status of the reconsideration request), rule upon the request for reconsideration within 15 workdays after receipt of the request.

An Internal ADA complaint does not preclude other remedies.

The right of a person to a prompt and equitable resolution of the complaint filed hereunder shall not be impaired by the person's pursuit of other remedies such as the filing of a discrimination complaint with the responsible federal department or agency. Use of this complaint procedure is not a prerequisite to the pursuit of other remedies, nor does one's pursuit of outside remedies preclude one's filing a complaint pursuant to this procedure.

These rules shall be construed to protect interested persons, to meet appropriate due process standards, and to assure that the university complies with the ADA, Section 504, and their implementing regulations.

Title IX and ADA Coordinator's Office

The University strives to provide a safe environment and is committed to keeping the health and well-being of the campus community in the forefront of our thinking. The Title IX Coordinator is in charge of the University's preventive education about, and response to, sexual misconduct including sexual harassment (includes quid pro quo and hostile environment); sexual assault; domestic violence; dating violence; and stalking.

The Title IX Coordinator's contact information is:

Sarah Mudd**Title IX Coordinator**

Dean of Students Suite, SAC W301
2100 S. Floyd Street
Louisville, KY 40208
(502) 852-5787

Assistant Title IX Coordinator

Dean of Students Suite, SAC W301
2100 S. Floyd Street
Louisville, KY 40208
(502) 852-5787

Email: titleix@louisville.edu

Webpage: <https://louisville.edu/titleix> (<https://louisville.edu/titleix/>) (policies)

Code of Student Conduct



Code of Student Conduct

The University's Code of Student Conduct (<https://louisville.edu/dos/students/codeofconduct/>) ("The Code") is the University's policy regarding non-academic discipline of students and student organizations. Academic dishonesty is not covered by this Code but rather falls within the authority of the individual academic units of the University. Students have the responsibility to follow all regulations outlined in this policy.

The primary purpose for the Code in the university setting is to respond to incidents of non-academic misconduct in a way that is developmentally sound and which creates an environment in which all members of the academic community can live, work, and learn together. The Code is designed to provide educational guidance to those choosing to develop

into good citizens and, at the same time, to respond appropriately to behavior which may be inconsistent with university policies.

Criminal and civil codes are undesirable models for student conduct codes. Unlike society, the University of Louisville is a voluntary association of scholars who demand and deserve a positive and special learning environment, as well as an approach for enforcing the community's standards. The University of Louisville is a community dedicated to the principles of free expression in which diverse views are encouraged and embraced. Opinions that may be unpopular and/or contrary to the University's values and objectives, but do not otherwise violate policy, will not result in sanctions from the University.

The University's Code of Student Conduct is set forth in writing in order to give students general notice of non-academic prohibited conduct. The Code should be read broadly and is not designed to define non-academic misconduct in exhaustive terms. The Vice President for Student Affairs (VPSA) or designee is the final authority in defining and interpreting the Code of Student Conduct and conduct procedures. The University reserves the right to amend the Code of Student Conduct at any time.

The Code can be found at at the Dean of Students website (<https://louisville.edu/dos/students/codeofconduct/>) or by contacting the Dean of Students Office in SAC W301 or by phone at (502) 852-5787.

Code of Student Rights and Responsibilities

The Code of Student Rights and Responsibilities is set forth in writing to provide students with general notice of their rights and responsibilities at the University of Louisville. Further rights and responsibilities are set forth in other University rules and policies, including the Code of Student Conduct, Student Handbook, Residence Hall contracts, graduate and undergraduate catalogs, and academic unit websites. It is the students' responsibility to be aware of all University rules and policies; students should check with the Dean of Students Office and with their academic units if they have any questions about the purposes or intent of these policies.

The Code of Student Rights and Responsibilities (<http://louisville.edu/dos/students/studentrightsandresponsibilities/>) is located on the Dean of Students website (<https://louisville.edu/dos/>).

Student Handbook

Other policies and information for students can be found in the online Student Handbook (<http://louisville.edu/dos/students/studentpoliciesandprocedures/student-handbook/>).

Student Advocacy and Support

The Student Advocate helps students navigate educational, personal, and other campus obstacles that impact successful completion of their academic goals. The Student Advocate links students with appropriate University and community resources and follows through to assist with student concerns while collaborating with faculty and staff in the best interest of the students.

At times, students may experience a variety of issues that impact their ability to be academically successful, such as illness, death of an immediate family member, accident, critical issues such as sexual assault, harassment, domestic violence, or other emergency situations. The Student Advocate works with students and their families to resolve issues by identifying options and strategies and offering information and guidance. During difficult times, students should be empowered with the

resources to make informed decisions and take a proactive role in the problem resolution process.

The Student Advocate is located in the Dean of Students Office, SAC W301. For assistance, please contact the Student Advocate at advocate@louisville.edu or call (502) 852-5787 to schedule an appointment.

Student Grievance Officer

Students who have complaints, grievances, or concerns regarding courses taken at the University of Louisville or other University policies or services should contact the Student Grievance Officer to have the issues resolved in an expeditious, fair, and amicable manner. Students should first seek to resolve their complaints through informal discussion and administrative channels. The same resources are provided to on-campus and off-campus students.

The Student Grievance Officer (<https://louisville.edu/dos/students/studentpoliciesandprocedures/student-grievance/>) is responsible for informing students of their rights and obligations under the University's Student Grievance Procedures (<http://louisville.edu/provost/redbook/contents.html/chap6.html#ART68>). The Student Grievance Officer will seek to resolve informally as many grievances as possible. For assistance, please contact Dr. Joy Hart at joy.hart@louisville.edu.

Scholarships and University Fellowships



University Fellowships

A limited number of University fellowships may be awarded to outstanding students in the doctoral programs. These carry a generous stipend, health insurance, and full tuition remission. University Fellows are not expected to provide services beyond those appropriate to the completion of their degree requirements. Students do not directly apply to the Graduate School for these awards; nominations are made in early spring to the Dean of the Graduate School by either the Chair or Director of Graduate Studies of departments granting the doctorates. Students who wish to be considered for fellowships should abide by the graduate program's deadline for submitting application materials.

Graduate Assistantships

Graduate teaching, research, and service assistantships are available to qualified students in most graduate programs. The purpose of a graduate assistantship is to provide experience and training that augment a student's academic program, and assistantships are awarded on an individual basis according to the needs of the department, professor or project. The department Chair or Graduate Program Director will attempt

to place a student in an assistantship believed to best serve the career training objective of the student. Although a student is free to make known a preference for a particular placement, the final decision is the prerogative of the department in which the student is enrolled.

Students do not directly apply for these awards; the individual graduate program selects the student(s) for an assistantship offer. Applicants who are interested in being considered for assistantships should contact to the Chair or Graduate Program Director of the department to which they are applying for admission, stating their desire to be appointed as a graduate assistant. The award of an assistantship is competitive; students who hope to be considered should present credentials that are well above the minimum required for admission. The distribution of assistantships across departments may differ from year to year. Moreover, some departmental policies require that a student complete graduate credit hours in the program before being eligible for an assistantship.

Graduate assistantships must include a stipend (minimum \$1,300 per month for master's students; doctoral stipends vary by discipline), student health insurance and full tuition. The duration of funding and conditions to maintain the assistantship should be outlined in the student's letter of award. The duration of funding for which these appointments are renewable and depends on the department, although the university typically provides (or guarantees) four years of funding to doctoral students, two to masters, and three for master of fine arts students who continue to make progress toward the degree; the university-wide maximums for this type of university sponsored financial support are six years for doctoral students, three for master's students, and four for master of fine arts students.

The distribution of assistantships across departments may differ from year to year. Moreover, some departmental policies require that a student complete graduate credit hours in the program before being eligible for an assistantship.

Diversity Scholarships

The Graduate School is committed to providing financial support for the recruitment and retention of outstanding graduate students from historically underrepresented groups. These scholarships include a monthly stipend, tuition remission and health insurance. Both masters and doctoral degree students are eligible as candidates. Students do not directly apply to the Graduate School for these awards; nominations are made in early spring to the Dean of the Graduate School by either the Chair or Director of Graduate Studies of departments granting the (MS or PhD). Students who wish to be considered for this scholarship should abide by the graduate program's deadline for submitting application materials.

Resigning an Offer of Financial Support

As a member of the Council of Graduate Schools in the United States, the University of Louisville subscribes to the Resolution Regarding Scholars, Fellows, Trainees, and Graduate Assistants (<http://cgsnet.org/april-15-resolution/>):

Acceptance of an offer of financial support (such as a graduate scholarship, fellowship, traineeship, or assistantship) for the next academic year by a prospective or enrolled graduate student completes an agreement that both student and graduate school expect to honor. In that context, the conditions affecting such offers and their acceptance must be defined carefully and understood by all parties.*

Students are under no obligation to respond to offers of financial support prior to April 15; earlier deadlines for acceptance of such offers violate the intent of this Resolution. In those instances in which a student accepts an offer before April 15, and subsequently desires to withdraw that acceptance, the student may submit in writing a resignation of the appointment at any time through April 15. However, an acceptance given or left in force after April 15 commits the student to first inform the program that they are withdrawing or resigning from the offer of financial support that they previously had accepted. Starting in Fall 2020, applicants are no longer required to obtain a formal release from the program whose offer they accepted, either before or after the April 15 deadline. It is further agreed by the institutions and organizations subscribing to the above Resolution that a copy of this Resolution or a link to the URL should accompany every scholarship, fellowship, traineeship, and assistantship offer.

Financial Aid and Financial Settlement

Office of Student Financial Aid

The Office of Student Financial Aid serves prospective students, current students, and their parents with financial aid questions and needs.

Website: louisville.edu/financialaid (<http://louisville.edu/financialaid/>)

Email: finaid@louisville.edu

Call center: (502) 852-5511

Campus location: 110 Houchens Building, Belknap Campus

Website

On the Student Financial Aid website (<http://www.louisville.edu/financialaid/>), visitors can access the following:

- Term-specific information on aid disbursement, residual funds, and financial aid advances;
- Financial aid news and upcoming important dates;
- Aid application and processing instructions;
- Award sources and types;
- UofL and outside scholarship postings;
- Consumer information.

Email Service Account

Send your email questions to finaid@louisville.edu. For specific account information, current students must email the office from their UofL account.

Call Center

Contact the call center at (502) 852-5511 from 9:00 a.m. to 4:30 p.m. Monday through Friday. On Thursdays, the call center opens at 10:30 a.m.

This service is intended to assist prospective students, current students, and parents with their general financial aid questions. We ensure students' privacy by not disclosing account-specific information. Current students should have their student ID number ready when calling.

Office Hours

The Student Financial Aid Office provides walk-in counseling to both current and prospective students Monday, Tuesday, Wednesday, and Friday from 9:00 a.m. to 4:30 p.m.

On Thursdays, the office and call center are open from 10:30 a.m. to 4:30 p.m.

Check the Student Financial Aid Office website (<http://louisville.edu/financialaid/>) for special hours during the August and January class registration periods.

Continuing Registration

Tuition and fees are due on, or before, the designated due date for the semester. Payment may be made by cash, check, money order, charge card (MasterCard, Visa or Discover), or financial aid credit. Payments may be made by mail or at the Office of the Bursar located at 110 Houchens Building on Belknap Campus.

Failure to receive a Statement of Account will not relieve the student of the responsibility for making financial settlement by the designated due date. Continuing registrations which are not financially settled by the designated due date may have their course registration cancelled and/or be assessed financial penalties. The Continuing Registration designated due dates are listed in the current Schedule of Courses and on the Bursar's web site at: ulink.louisville.edu (Tuition-Fees-Payment Options, Payment Options). Students may view their account via ULink. Financial statements are no longer sent to students via mail. All account information may be found on the students ULink.

Regular Registration

Students who register after Continuing Registration should be prepared to fully settle financial obligations by the last day to drop/add for the semester. Failure to fully settle financial obligations may result in course cancellation and/or financial penalties.

Senior Citizen Tuition Remission

The University offers tuition remission to individuals who are classified as residents of Kentucky and are at least 65 years of age on, or before, the first day of classes for the semester. Special costs, such as course fees and parking, are not covered by this program and are the financial responsibility of the student. Proof of age may be shown by presenting a driver's license or other age verification document at the Office of the Bursar.

These individuals must secure permission of the Graduate School in order to enroll in graduate-level courses. Normal admission processes must be followed in order to gain admission to a degree program. Students enrolled as Continuing Studies students are not eligible to enroll in graduate level courses.

Financial Penalties

Students whose accounts are not paid by the established semester deadlines may be subject to financial penalties. Students with unpaid account balances will have a Bursar Registration Hold placed on their student account. Students that have a Bursar Registration Hold become ineligible for further registration and transcripts will not be released until the student account is paid in full. Effective Spring 2015 a late payment fee of \$100.00 may be assessed when student accounts are not paid by the last day to drop/add for the semester. A return payment fee of \$25.00 may be assessed when payment is not honored by the bank on which it was drawn. If restitution is not made within 10 days of notification, the student may be subject to financial penalties and/or legal action.

Debtors who do not make satisfactory payment arrangements on their past due accounts may have their accounts placed with a billing

service. If not paid through the billing service, the unpaid account may be forwarded to a collection agency. It is the policy of the University that unpaid accounts will be assessed the costs and expenses of collection, including attorney fees. Any E-check or Paper Check payment that is remitted on a Past Due by a previously enrolled student will be subject to a 21-day delay in lifting the related Bursar Registration Hold.

Withdrawal Policy

The effective withdrawal date is the date on which the withdrawal is processed in the Student Records System. This date is used in calculating any applicable tuition reduction.

Financial Aid Recipients

Determinations regarding refunds of resulting credit balances will be based on regulations governing the financial aid awarded to the student.

Federal regulations mandate that students have the right to cancel all or a portion of an EFT loan disbursement and have the loan proceeds returned to the lender. To request cancellation of all or a portion of your loan, contact the Financial Aid Office in writing:

Financial Aid Office
University of Louisville
Louisville, KY 40292

For additional information contact Student Financial Aid Office or review our Consumer Information online at: louisville.edu/financialaid (<http://louisville.edu/financialaid/>)

Financial Settlement Options

Due dates, payment information, payment plan options, and payment plan forms for specific semesters is updated regularly on the Bursar's web site at: ulink.louisville.edu

Tuition-Fees-Payment Options: Any questions may be directed to the Bursar's Office 1) by phone at (502) 852-6503 or 2) by email at bursar@louisville.edu.

Special Facilities and Services

University Libraries

The extensive library system at the University of Louisville is designed to support undergraduate and graduate student success. The University Libraries consist of:

- Ekstrom (Main) Library,
- Archives and Special Collections,
- The Margaret Bridwell Art Library,
- The Louis Brandeis Law Library,
- The Dwight Anderson Memorial Music Library, and
- The Kornhauser Health Sciences Library.

Each library offers welcoming, updated individual and group study spaces to support study and research. Many of the study and meeting rooms are reservable online. Ekstrom Library is open 24/5 to all students during the semester, and houses a Starbucks. The other libraries post current hours of operation on the University Libraries web site.

The University Libraries provide in person and virtual services including research assistance, book borrowing, course reserves, and spaces for group and individual study. Other services located in the University

Libraries include the Writing Center, the Digital Media Suite, and the REACH Computer Resources Center for peer tutoring and academic coaching.

The Libraries' virtual and print collections are extensive and are selected to support the university's academic programs. In addition to print books and journals, the collections include e-books, e-journals, streaming media and digital collections that include student publications and scholarship such as theses and dissertations. Interlibrary loan services provide access to research materials not owned by the University Libraries.

More information about library facilities, services and materials can be found at the University Libraries website (<https://library.louisville.edu/home/>).

University Archives and Records Center

The University Archives is a research repository of national significance. It contains primary sources relating to the university, Louisville, and the nation. It attracts students, faculty, and scholars from Louisville, from elsewhere in the United States, and from other countries. It collects, preserves, and makes available for research historical manuscripts, oral history interviews, and other primary research materials, and thus serves as a research laboratory for humanists, social scientists, and others. Its collections include nineteenth and twentieth-century records of area businesses, cultural organizations, social service agencies, and churches; personal papers of politicians, scholars, members of the Jewish and African-American communities, women, and other prominent and representative Louisvillians; and publications, papers, and photographs documenting the history of the university. Students with class projects, theses, or dissertations requiring primary sources are invited to consult this office.

Information Technology Services

Information Technology Services (ITS) offers numerous technology and computing solutions in support of University of Louisville's teaching, research and service missions. Serving students, faculty and staff, ITS maintains campus wired and wireless networks and delivers enterprise administrative and academic applications. More information concerning ITS can be found at louisville.edu/its (<http://louisville.edu/its/>).

UofL's ULink services is the university's most popular website: ulink.louisville.edu (<https://ulink.louisville.edu/>). ULink is a secure portal to all necessary campus information and services, including the administrative student environments where you can check your class schedule, tuition balance, grades and much more. Any changes to your personal information, technology accounts and email addresses can be done through ULink. Tutorial videos (<https://louisville.edu/its/ulink/ulink-upgrade/>) are available for assistance.

Everyone in the UofL community has an Microsoft Outlook university email as part of an entire Windows Office365 system. Enrolled students have options for online and downloadable O365 (on up to 5 devices – phone, tablet, laptop or desktop) including applications such as Outlook, Word, PowerPoint, Excel, Teams and more plus 50GB of OneDrive storage. See outlook.office365.com (<https://outlook.office365.com/>) or louisville.edu/email (<http://louisville.edu/email/>) for email information

and login.microsoftonline.com (<https://login.microsoftonline.com/>) for more about O365 accounts.

The ITS HelpDesk assists the UofL community daily with regard to technology questions and issues. Need help changing your password, for example? The ITS HelpDesk can be reached at [helpdesk.louisville.edu](https://louisville.edu/its/get-help/its-helpdesk/) (<https://louisville.edu/its/get-help/its-helpdesk/>) for online assistance (chat, incident tickets, self-help) or call (502) 852-7997 to talk to someone. Additionally, ITS provides free, 1:1 walk-in technology help for students, faculty and staff. The iTech Connect team, located in the lower level of the Miller IT Center on Belknap campus and Bldg A (rm 104) on the HSC campus, can troubleshoot various technology problems like wireless connections, antivirus protection and digital device management. See [helpdesk.louisville.edu](https://louisville.edu/its/get-help/its-helpdesk/) (<https://louisville.edu/its/get-help/its-helpdesk/>) for hours and details.

ITS maintains the university's extensive networking, including a 200 gigabit campus backbone network and a high-speed intercampus fiber network. Wireless service is universally available for University of Louisville students, faculty and staff and guests across all campuses. Eduroam is our preferred wi-fi but we ask that you use our on-boarding application (uofl.edu/setupwireless (<https://uofl.edu/setupwireless/>)) to access best options for secure wireless.

ITS offers secure, unlimited data storage free for faculty, staff and students via CardBox. A CardBox account lets you synchronize and backup all of your personal files plus collaborate, securely share and edit easily with other UofL users. See louisville.edu/its/cardbox (<https://louisville.edu/its/cardbox/>) for information on how to sign-up for an account.

Another great resource ITS makes available for everyone at UofL is free access to the Adobe Creative Cloud suite of products. With this collection of 20+ desktop and mobile apps for photography, video, audio and web design, you can discover new ways to create and collaborate. The Adobe Creative Cloud (<https://louisville.edu/adobe/>) includes access to industry-leading software applications including Photoshop (<https://www.adobe.com/products/photoshop.html>), Illustrator (<https://www.adobe.com/products/illustrator.html>), InDesign (<https://www.adobe.com/products/indesign.html>), Acrobat Pro DC (<https://acrobat.adobe.com/us/en/acrobat/acrobat-pro-cc.html>), and Premiere Rush (<https://www.adobe.com/products/premiere-rush.html>) among others. Installation instructions, tutorials and support can be found on ITS Adobe Creative Cloud Support (<https://louisville.edu/its/adobe-support/>).

For discounted and free software, sign-in to louisville.onthehub.com (<http://louisville.onthehub.com/>) with your UofL userID and password. Also free to UofL students, faculty and researchers, MATLAB is transformative software for mathematicians, scientists and engineers. Users will find new ways to express computational mathematics, experiment with how to deploy algorithms, visualize complex data sets, and so much more. Check out the information on our portal [UofL.edu/matlab](https://uofl.edu/matlab) (<https://www.mathworks.com/academia/tah-portal/university-of-louisville-31448597.html>).

International Center

The International Center is comprised of the Office of Study Abroad and International Travel, the International Student and Scholar Services (ISSS) office, the Passport Place @ UofL, and Global Initiatives.

The International Center develops and promotes global efforts that are inclusive of the campus and local community in conjunction with the internationalization goals of the University. The International Center focuses on increasing international students and scholars at UofL; providing programming that serves this vital population; expanding cultural competency through increasing the number of students participating in education abroad programs; facilitating student and faculty international research and travel efforts; and providing quality services in support of these and other global initiatives.

If you are an international student or scholar, email iss@louisville.edu. If you are a student interested in studying abroad, email edabroad@louisville.edu. If you are interested in applying for a U.S. Passport, email passportoffice@louisville.edu. If you are interested in information about international travel, email fasit@louisville.edu.

University Housing and Resident Experience

Be at the center of the Cardinal experience as a resident of UofL Housing.

More than a place to rest your head, UofL's housing program offers a community-like atmosphere that supports students as they successfully transition from high school to college. It's a place where everyone can belong and make life-long connections to their peers. Campus Housing promotes a safe, convenient, inclusive and healthy living-learning environment, providing opportunities that engage students, facilitate student and faculty connections and encourage student success.

Total facilities include 12 residence halls on Belknap Campus and three affiliated apartment properties bordering Belknap (please see First-Year Live-on Policy (<http://louisville.edu/housing/info/policies/firstyear/>) and Second-Year Residential Requirement (<https://louisville.edu/housing/info/policies/Second-Year-Residential-Requirement/>)).

The facilities are home to more than 6,000 students from Louisville, across the country and around the globe. Staffed by a team of professionals with expertise in student learning and development, we strive to make sure learning doesn't stop in the classroom. We emphasize healthy lifestyles and provide programs that facilitate student engagement and personal growth.

Housing is one of the largest campus employers of students on campus, with more than 200 part-time student employees assisting in facilities, services and programs that support our campus communities and help them thrive. The dynamic combination of professional staff, student leaders, and residents helps make UofL a vibrant campus with something to offer every individual.

For information, please contact the Campus Housing office:

Website: louisville.edu/housing (<https://louisville.edu/housing/>)

Phone: (502) 852-6636

Email: housing@louisville.edu

Counseling Center

The mission of the Counseling Center is to provide services and programs that support the psychological well-being, holistic development, and retention of University of Louisville students. The Counseling Center

provides short-term individual, group/workshop, and couples counseling, outreach, urgent consultation, and psychological testing for currently enrolled students (psychiatric/medication services are provided by Campus Health).

Our clients seek services for a variety of areas of concern, including psychological, personal/social, academic, and career issues.

There is a sliding fee for psychological testing, but all other services are covered by your student fee. Services are confidential to the limits provided by law.

We are committed to diversity in the provision of services and in supporting the University community, while honoring the unique needs and concerns of individuals and traditionally underrepresented groups.

UofL Counseling Center

Student Activity Center (SAC), Suite W204 (Second floor)
louisville.edu/counseling (<http://louisville.edu/counseling/>)
(502) 852-6585

The Counseling Center is accredited by the International Association of Counseling Services (<http://www.iacsinc.org/faqs.html>) (IACS).

The Center is open Monday–Friday from 9:00 am–5:00 pm, and we provide urgent consultations on a walk-in basis from 9:00 am–4:00 pm. We honor all University holidays, closings, and delayed starts.

For more information, including descriptions of our current groups and workshops, please call us or visit our website (<http://louisville.edu/counseling/>).

Campus Health Services

Student Medical and Mental Health Services

The Campus Health Service provides medical and mental health services to undergraduate, graduate and professional students. Services include primary care, psychiatric, counseling services, travel medicine and nutritional consults as well as allergy injections, immunizations, sports physicals and diagnostic testing.

Although all students are encouraged to call for appointments, walk-in and same day appointments are generally available at both locations. Charges for medical services are applied to the student's insurance and/or health fees. Students are responsible for any balance not covered by insurance or fees. Psychiatric services are covered through student fees.

There are two Campus Health Center locations that serve health needs of our students. The centers are located at:

Belknap Campus

Cardinal Station
215 Central Ave. Suite 110
(502) 852-6479

Health Sciences Center

Health Care Outpatient Center (HCOC)
410 E. Chestnut St. Suite 110
(502) 852-6446

Health Insurance and Health Fees

All students enrolled for at least six hours are charged the Primary Care Health Fee (PCHF) which can be waived within thirty days of the first day

of class with proof of health insurance. The fee entitles students to basic services at the health centers such as examinations and allergy injections. This fee is not health insurance and does not provide for specialty care, hospitalization, x-ray or laboratory services. The PCHF fee can be waived with proof of health insurance or used as a supplement to the student's insurance.

All students enrolled in a program of study that requires them to train in the University's affiliated teaching hospitals such as the MD, DMD, Dental Hygiene, Audiology, and Speech Pathology programs are required to carry major medical insurance and pay a non-waivable Health Professionals Health Fee (HPHF). Students in these programs are charged for the university-sponsored insurance plan but may waive it with proof of alternate coverage.

For additional information about Campus Health Fees, contact the Insurance Advocate via email at stuins@louisville.edu or visit the Campus Health website (<http://louisville.edu/campushealth/information/fees/primary-care-health-fee/>).

Campus Insurance Advocate

Cardinal Station
215 Central Ave. Suite 110
(502) 852-6519

Office of Health Promotion and Education

Health Promotion, a division of Campus Health Services, provides a variety of wellbeing programs, services, and resources including yoga, chair massage, stress resilience workshops, drop-in guided meditations, flash nap workshops, free & anonymous HIV testing, sexual health and consent workshops, safer sex supplies, healthy eating on campus, cooking workshops, and U-fit coaching.

Office of Health Promotion and Education

Campus Health Services
Student Activities Center
2100 South Floyd Street, room W309
(502) 852-5429

Additional information can be found on the Campus Health Services Office of Health Promotion website (<http://www.louisville.edu/healthpromotion/>).

Student Life

Housing and Residence Life, Intramural and Recreational Sports, Student Involvement, Fraternity and Sorority Life, Recognized Student Organizations, Student Government Association, Community Service, Swain Student Activities Center Administration, Student Disciplinary Services, Counseling Center, Career Development Center, and International Service Learning Program.

Disability Resource Center

In recognition of disability as an important part of the diversity of our community, the Disability Resource Center fosters an inclusive campus climate through education, service, collaboration, and outreach to the University of Louisville community. We provide support for students with documented disabilities by promoting equal access to all programs

and services. Accommodations and support services are individualized, depending on the needs of each student.

The Disability Resource Center also offers an academic coaching program for students with disabilities. Peer coaches work with participating students one-on-one each week to provide support in meeting the demands of college coursework and staying organized.

Students are strongly encouraged to make early contact with the Disability Resource Center to assure adequate time to implement support services. Please visit louisville.edu/disability (<http://louisville.edu/disability/>) for more information, and feel free to contact us with questions at askdrc@louisville.edu or 502-852-6938.

Residency Policy

In-State or Out-of-State Tuition

Initial Determination and Deadline to Appeal

The initial determination of residency status is made during the admission process. A status may be appealed by filing an affidavit and documentation with the Registrar's office no later than 30 calendar days after the first day of classes of the term for which a determination of residency status is requested. Academic calendars are available on the university web site and with the Offices of Admission.

Pursuant to the residency regulation, 13 KAR 2:045 (https://apps.legislature.ky.gov/Law/KAR/013/002/045.pdf#xml=https://apps.legislaturekygov/LRCSiteSessionSearch/dtSearch/dtisapi6dll?cmd=getpdfhits&u=1a702ce5&DocId=5428&Index=E%3a%5cProduction%5cDTSearch%5cDTSearchIndex%5cKY_Administrative_Reg&HitCount=10&hits=c+d+e+f+10+11+12+13+14+15+&SearchForm=&.pdf), an institution may set other deadlines for submission of other information required by the institution in a determination of residency status. Information packets are available from the residency website (<http://www.louisville.edu/residency/>).

Statutory reference: Sections 13 and 14 of 13 KAR 2:045. Effective February 21, 2007.

Applications for Change in Residency Status and Appeals

Application for change in residency classification for purpose of tuition and fee assessment by a student enrolled in or an applicant to a program at the University of Louisville ("University") shall be made in writing to the residency appeals officer for initial consideration along with such information forms as the residency appeals officer may specify. The application for a change in residency classification must be filed no later than thirty (30) calendar days after the first day of classes of the academic term for which the change is requested. Appeals of residency determinations shall be based on administrative regulations promulgated by the Kentucky Council on Postsecondary Education. A written appeal of the decision of the residency appeals officer must be postmarked no later than fourteen calendar days from the date of receipt of notification of the residency appeals officer's written decision.

The Residency Review Committee is appointed by the executive vice president and provost (or designee) and shall be composed of four faculty and/or staff members and one student. The chairperson shall be elected by the committee. The faculty and/or staff members normally shall have staggered two-year appointments; the student member shall have a one-year appointment. The committee shall have authority to establish procedural rules and schedule meetings. A quorum

shall consist of three members, and a quorum shall be necessary for committee action.

The Residency Review Committee shall consider appeals from applicants whose initial request for change in residency status has been denied by the residency appeals officer based upon the applicant's written appeal and the file in that matter to the extent provided by the Family Educational Rights and Privacy Act, 1974 (FERPA). The applicant shall be notified in writing as to the committee's decision.

If the decision of the committee is adverse to the applicant, the applicant may request a formal hearing by submitting a written request to the executive vice president and provost (or designee). This request must be postmarked no later than fourteen (14) calendar days from the date of receipt of notification of the committee's written decision.

The executive vice president and provost (or designee) shall appoint a hearing officer from outside the University to preside over formal residency hearings. Formal hearings shall be arranged based on a timely request from the applicant. The formal hearing shall provide for due process, including notice of hearing, examination of the information on which the University decision is based, and the right of an applicant to be represented by legal counsel and to present information and testimony in support of a claim of Kentucky residency. Hearing procedures will be consistent with 13 KAR 2:045 (https://apps.legislature.ky.gov/Law/KAR/013/002/045.pdf#xml=https://apps.legislaturekygov/LRCSiteSessionSearch/dtSearch/dtisapi6dll?cmd=getpdfhits&u=1a702ce5&DocId=5428&Index=E%3a%5cProduction%5cDTSearch%5cDTSearchIndex%5cKY_Administrative_Reg&HitCount=10&hits=c+d+e+f+10+11+12+13+14+15+&SearchForm=&.pdf).

The hearing officer shall make a report with findings of fact and a recommendation to the executive vice president and provost (or designee) with a copy to the applicant. The executive vice president and provost (or designee) will decide the appeal on the record on behalf of the University and the Board of Trustees and will notify the applicant in writing within thirty days of receipt of the hearing officer's report. In the event the decision of the executive vice president and provost (or designee) is not in accord with the recommendation and findings of the hearing officer's report, a written explanation will be provided to the applicant.

Council on Postsecondary Education Administrative Regulation

Relates to: KRS Chapter 13B, 164.020, 164.030, 164A.330(6).

Necessity, Function, And Conformity

KRS 164.020(8) requires the Council on Postsecondary Education to determine tuition and approve the minimum qualifications for admission to a state-supported postsecondary education institution and authorizes the council to set different tuition amounts for residents of Kentucky and for nonresidents. This administrative regulation establishes the procedure and guidelines for determining the residency status of a student who is seeking admission to, or who is enrolled at, a state-supported post-secondary education institution.

Institutional Accreditation and Membership



Institutional Accreditation

The University of Louisville is accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC) to award associate, bachelor, master, specialist, doctoral, and first-professional degrees (D.M.D., J.D., M.D.). The University of Louisville also may offer credentials such as certificates and diplomas at approved degree levels.

Questions about the accreditation of the University of Louisville may be directed in writing to the **Southern Association of Colleges and Schools Commission on Colleges** at 1866 Southern Lane, Decatur, Georgia 30033-4097, by calling (404) 679-4500, or by using information available on SACSCOC's website (sacscoc.org (<http://sacscoc.org/>)).

Professional Accreditations

Accountancy (C, BS, MSAA): Association to Advance Collegiate Schools of Business (AACSB International) (<http://www.aacsb.edu/>)

Audiology (AuD): Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAA) (<http://caa.asha.org/>)

Bachelor of Fine Arts (BFA)-Interior Design Track: Council for Interior Design Accreditation (CIDA) (<https://www.accredit-id.org/>)

Business (Undergraduate and Graduate): Association to Advance Collegiate Schools of Business (AACSB International) (<https://www.aacsb.edu/>)

Chemistry (BS): American Chemical Society (ACS) (<https://www.acs.org/about/governance/committees/professional-training.html#rnce/committees/training/acsapproved.html>)

Clinical Psychology (PhD): American Psychological Association (APA) (<https://www.apa.org/>)

Clinical Mental Health Counseling (MEd): Council for Accreditation of Counseling and Related Educational Programs (CACREP) (<http://www.cacrep.org/>)

Communicative Disorders (MS) [Speech-Language-Pathology]: Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAA) (<https://caa.asha.org/>)

Computer Engineering and Computer Science (BS): Computing Accreditation Commission (CAC) of the Accreditation Board for Engineering and Technology (ABET), Inc. (<https://www.abet.org/>)

Counseling and Personnel Services (MEd) - Art Therapy/Expressive Therapies Concentration: Commission on Accreditation of Allied Health Education Programs (CAAHEP), Accreditation Council for Art Therapy Education (ACATE) (<https://www.caahep.org/students/find-an-accredited-program/>)

Counseling and Personnel Services (PhD) - Counseling Psychology Specialization: American Psychological Association (APA) (<https://www.apa.org/>)

Couple and Family Therapy (MS): Commission on Accreditation for Marriage and Family Therapy Education (COAMFTE) (<https://www.coamfte.org/>)

Dental Hygiene (BS): Commission on Dental Accreditation of the American Dental Association (CODA) (<https://coda.ada.org/>)

Dentistry (C, MSD, DMD): Commission on Dental Accreditation of the American Dental Association (CODA) (<https://coda.ada.org/>)

Education (BS, MAT, MEd, EdD, EdS): Kentucky Education Professional Standards Board (<http://www.epsb.ky.gov/>) (EPSB); Council for the Accreditation of Educator Preparation (<http://www.caepnet.org/>) (CAEP)

Engineering (BS and MEng): Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology ABET, Inc. (<https://www.abet.org/>)

(Bioengineering, Chemical Engineering, Civil Engineering, Electrical Engineering, Industrial Engineering, Mechanical Engineering, Computer Engineering and Computer Science programs)

Exercise Physiology (MS): Committee on Accreditation for the Exercise Sciences (CoAES) (<http://www.coaes.org/>) of the Commission on Accreditation of Allied Health Education Programs (CAAHEP) (<https://www.caahep.org/students/find-an-accredited-program/>)

Family Therapy (MSSW): Commission on Accreditation for Marriage and Family Therapy Education (COAMFTE) (<https://www.coamfte.org/>)

Health Administration (MS): Commission on Accreditation of Healthcare Management Education (CAHME) (<https://www.cahme.org/>)

Health and Human Performance (BS) - Exercise Science Track: Committee on Accreditation for the Exercise Sciences (CoAES) (<https://www.caahep.org/committees-on-accreditation/exercise-science/>)

Law (JD): Section of Legal Education and Admissions to the Bar of the American Bar Association (ABA) (<https://www.americanbar.org/>); Association of American Law Schools (AALS) (<https://www.aals.org/>)

Medicine (MD): Liaison Committee on Medical Education, a Joint Committee of the American Medical Association and the Association of American Medical Colleges (LCME) (<https://lcme.org/>)

Music (BA, BM, MM, MME): National Association of Schools of Music (NASM) (<http://nasm.arts-accredit.org/>)

Music Therapy (BM): National Association of Schools of Music (NASM) (<http://nasm.arts-accredit.org/>)

Nursing (C, BSN, MSN, DNP): Commission on Collegiate Nursing Education (CCNE) (<https://www.aacnursing.org/CCNE-Accreditation/>)

Accreditation-Resources/Standards-Procedures-Guidelines/); Nurse Anesthesia (DNP Specialization) Council on Accreditation of Nurse Anesthesia (COA) (<https://www.coacna.org/>)

Public Administration (MPA): National Association of Schools of Public Affairs and Administration (NASPAA) (<https://www.naspaa.org/>)

Public Health (BA, BS, MS, MPH, PhD): Council on Education for Public Health (CEPH) (<https://ceph.org/>)

School Counseling (MEd): Council for Accreditation of Counseling and Related Educational Programs (CACREP) (<https://www.cacrep.org/>)

Social Work (BSW, MSSW): Commission on Accreditation of the Council on Social Work Education (CSWE) (<https://www.cswe.org/>)

Sport Administration (BS, MS): Commission on Sports Management Accreditation (COSMA) (<https://www.cosmaweb.org/>)

Theatre Arts (BS, MFA): National Association of Schools of Theatre (NAST) (<https://www.arts-accredit.org/>)

Urban Planning (MUP): Planning Accreditation Board (PAB) (<https://www.planningaccreditationboard.org/>)

Other Accreditations/Recognitions

Child Clinical and Pediatric Psychology Doctoral Internship Program: American Psychological Association (APA) (<https://www.planningaccreditationboard.org/>)

Clinical Chemistry (post-doctoral): Commission on Accreditation in Clinical Chemistry (COMACC) (<https://comacc.org/>)

Cooperative Education (Speed School): Accreditation Council for Co-op and Internships (ACCI) (<https://co-opaccreditation.org/>)

Continuing Medical Education: Accreditation Council for Continuing Medical Education (AACME) (<https://www.aacme.org/>)

Counseling Center: International Association of Counseling Services (IACS) (<https://iacsinc.org/>)

Early Learning Center: National Association for the Education of Young Children (NAEYC) (<https://www.naeyc.org/>)

Fort Knox Education Center: Military Installation Education Review (2009)

Graduate Medicine (House Staff): Accreditation Council for Graduate Medical Education (ACGME) (<https://www.acgme.org/>)

Human Subjects Protection Program: Association for the Accreditation of Human Research Protection Programs, Inc. (AAHRPP) (<http://www.aahrpp.org/>)

Research Resource Center/Comparative Medicine Research Unit: Association for Assessment and Accreditation of Laboratory Animal Care, International (AAALAC) (<https://www.aaalac.org/>)

Resources for Academic Achievement (REACH) Tutor Training: College Reading & Learning Association's (CRLA) International Tutor Training Program Certification (ITTPC) (<https://www.crla.net/index.php/certifications/ittpc-international-tutor-training-program/>)

Strength Conditioning-Exercise Science (BS)/Exercise Physiology (MS): National Strength and Conditioning Association (NSCA) Education Recognition Program (<https://www.nasca.com/>)

Disclosures

State Authorization for Distance Education Activities

The University of Louisville seeks to deliver all of our online programs in every state. We work through the State Authorization Reciprocity Agreement (SARA) process and with states directly to ensure that when authorization or licensure is necessary, required approvals are obtained.

SARA is a voluntary agreement that allows states and institutions to offer distance education in other participating states so long as the institution adheres to certain quality and consumer protection standards. More information on SARA can be found at [nc-sara.org](http://www.nc-sara.org) (<http://www.nc-sara.org>).

The Commonwealth of Kentucky is a member of SARA and UofL is an approved SARA institution. Though SARA authorizes the University to offer its programs in member states, there is the possibility that other state requirements not covered by SARA (such as requirements from state licensing boards) could necessitate the restriction of selected programs in certain states. Please note that should you choose to enroll in a restricted program in a particular state, there may be restrictions that could affect you.

Examples could include:

- You may be unable to sit for local licensing in that state
- You may be ineligible for consumer protection in that state
- You may not be able to complete field placements (practicum, internship, clerkship, etc.) in that state. This could affect licensure or recognition of the degree to meet particular requirements in that state.

Therefore, if you decide to enroll in any of the University of Louisville's restricted programs, or if you move during the course of your studies to a state where your program is restricted, please be aware that you are taking a risk that you may not be able to complete that program or use any of the credit earned in that program should you decide to pursue licensing in that field in that state. Please note that the risks listed above are not exhaustive. Please verify with your state's professional licensing board that your plans are not impacted by these risks before enrolling in an online program.

For more information on online program availability in your state, please visit the State Authorization Regulations (<http://louisville.edu/online/About-Us/state-authorization-regulations/>) page of the UofL online programs website.

Professional Licensure Notifications & Disclosures for Online Programs

Depending on your program, you may be interested in pursuing professional licensure or certification following graduation. Universities are required to disclose professional licensure information to students, and the University of Louisville makes this information publicly available on the UofL Online website: louisville.edu/online/About-Us?tab=disclosures (<https://louisville.edu/online/About-Us/?tab=disclosures>).

The University of Louisville strongly recommends that you inquire with your applicable licensing board to determine all of the educational and other requirements for licensure before enrolling in the program. Additionally, you should note that licensing requirements vary by state and relocating could impact whether you will meet eligibility requirements for licensure. Check with the state licensing board where you desire licensure before relocating to ensure that you will be eligible for licensure or reciprocity.

Graduate Programs of Study



The programs listed below are offered at the graduate or professional level. Students interested in bachelor's degree programs should refer to the undergraduate catalog (<http://catalog.louisville.edu/undergraduate/programs-study/>).

Programs marked with an asterisk (*) are available for completion entirely online (<http://louisville.edu/online/programs/>) (may not include all concentrations or specialization areas).

Program	MA / MAT or MS	Discipline-Specific Master's	Doctoral	Certificate or Other	College or School	Department
Accountancy and Analytics	MS (p. 48)	-	-	-	College of Business (https://business.louisville.edu/)	Accountancy
African American Theatre	-	-	-	Certificate (p. 49)	Arts & Sciences (http://louisville.edu/artsandsci/intro/)	Theatre Arts
Anatomical Sciences & Neurobiology	MS (p. 50)	-	PhD (p. 52)	-	Medicine (http://louisville.edu/medicine/)	Anatomical Science & Neurobiology
Anthropology	MA (p. 55)	-	-	-	Arts & Sciences (http://louisville.edu/artsandsci/intro/)	Anthropology

Applied Philosophy	MA (p. 57)	-	-	-	-	Arts & Philosophy Sciences (https://louisville.edu/artsandsciences/intro/)
Art & Art History	MA (p. 58)	MFA (p. 307)	-	-	-	Arts & Fine Arts Sciences (http://louisville.edu/artsandsci/intro/)
Artificial Intelligence in Medicine	-	-	-	-	Certificate (p. 60)	Engineering Bioengineering (https://engineering.louisville.edu/)
Asian Studies	-	-	-	-	Certificate (p. 61)	Arts & Asian Studies (http://louisville.edu/artsandsci/)
Audiology	-	-	-	AuD (p. 61)	-	Medicine Audiology (http://louisville.edu/medicine/)
Autism & Applied Behavior Analysis	-	-	-	-	Certificate (p. 63)	Education Special & Human Development (http://louisville.edu/education,
Biochemistry & Molecular Genetics	MS (p. 64)	-	PhD (p. 65)	-	-	Medicine Biochemistry (http://louisville.edu/medicine/) & Molecular Genetics
Bioengineering	MS (p. 69)	MEng (p. 67) ³	PhD (p. 188) ⁵	-	-	Engineering Bioengineering (https://engineering.louisville.edu/)
Bioinformatics	⁵	-	PhD (p. 186) ⁵	-	-	Graduate School Interdisciplinary Studies (https://louisville.edu/graduate/)
Biology	MS (p. 71)	-	PhD (p. 72)	-	-	Arts & Biology Sciences (http://louisville.edu/artsandsci/)
Biostatistics	MS* (p. 75)	-	PhD (p. 78)	Certificate (p. 74)	-	Public Health & Information Sciences (https://louisville.edu/sphis/)
Business Administration	-	MBA* (p. 84)	-	-	-	Business (http://business.louisville.edu/)

Business Analytics (p. 87)	-	-	-	Business (http://business.louisville.edu/)	Curriculum and Instruction	-	PhD (p. 124)	EdS (p. 123)	Education & Human Development (http://catalog.louisville.edu/undergraduate/academic-unit-information/college-education-human-development/)	
Business of Healthcare	-	-	-	Certificate Business (p. 88) (https://business.louisville.edu/)	Business	-	-	-	Education & Human Development (http://catalog.louisville.edu/undergraduate/academic-unit-information/college-education-human-development/)	
Certified School Counselor	-	-	-	RANK 1 (p. 88) ²	Education Counseling & Human Development (http://louisville.edu/education/)	-	-	-	Education Counseling & Human Development (http://louisville.edu/education/)	
Chemical Engineering (p. 91)	MEng (p. 89) ³	PhD (p. 92)	-	Engineering Chemical (https://engineering.louisville.edu/)	Engineering Chemical	Cybersecurity	-	-	Certificate Engineering (p. 126) (https://engineering.louisville.edu/computer-science/)	
Chemistry (p. 93)	-	PhD (p. 95)	-	Arts & Sciences (http://louisville.edu/artsandsciences/)	Chemistry	-	-	-	Computer Science (http://louisville.edu/computer-science/)	
Civil Engineering (p. 100)	MS* (p. 100)	MEng (p. 98) ³	PhD (p. 100)	-	Engineering Civil & Environmental Engineering (https://engineering.louisville.edu/)	Data Science	-	-	Certificate Engineering & Computer Science (p. 127) (https://engineering.louisville.edu/computer-science/)	
Clinical Investigation Sciences	-	MSc (p. 102)	-	Certificate Public Health & Information Sciences (http://louisville.edu/sphis/)	Public Health & Information Sciences (http://louisville.edu/sphis/)	Dentistry MSD (p. 128)	-	DMD (http://catalog.louisville.edu/professional/dental-bulletin/) ⁷	Dentistry (https://louisville.edu/dentistry/)	
Communications (p. 104)	-	-	-	Arts & Sciences (http://louisville.edu/artsandsciences/)	Communications	Distilled Spirits Business	-	-	Certificate Business MBA (p. 130) (https://business.louisville.edu/)	
Communicative Disorders (p. 106)	-	-	-	Medicine Otolaryngology-Head & Neck Surgery (http://louisville.edu/medicine/)	Medicine Otolaryngology-Head & Neck Surgery (http://louisville.edu/medicine/)	Diversity Literacy	-	-	Certificate Arts & Sciences (http://louisville.edu/artsandsciences/)	
Computer Science & Engineering (p. 108)	MS* (p. 108)	MEng (p. 109) ³	PhD (p. 111)	-	Engineering Computer Science & Engineering (https://engineering.louisville.edu/)	Early Childhood Education, Interdiscip	MAT (p. 131)	-	-	Education Early Childhood Development & Elementary Education (http://louisville.edu/education/)
Counseling & Personnel Services	-	MEd (p. 112)	PhD (p. 115)	-	Education Counseling & Human Development (http://louisville.edu/education/)	Educational Administration	EdS (post-master's) (p. 133) ⁴	-	RANK 1 ²	Education & Human Development Evaluation, and Organizational Development (http://louisville.edu/education/)
Couple & Family Therapy (p. 118)	MS (p. 118)	-	-	-	Social Work (https://louisville.edu/kent/)	Education - Leadership & Organizational Development	-	EdD (p. 136)	-	Education & Human Development & Organizational Development (http://louisville.edu/education/)
Criminal Justice (p. 120)	MS* (p. 120)	-	PhD (p. 122)	-	Arts & Sciences Criminal Justice (http://louisville.edu/artsandsciences/)	-	-	-	-	

Educational Leadership & Organizational Development	-	PhD (p. 137)	-	Education & Human Development (http://louisville.edu/development/)	Educational Leadership and Organizational Development Advising	Family Business Management	-	-	-	Certificate (p. 155)	Business (http://business.louisville.edu)	
Electrical Engineering	MS (p. 141)	MEng (p. 139) ³	PhD (p. 142)	-	Engineering (https://louisville.edu/engineering)	Electrical Engineering	Franchise Management	-	-	-	Certificate (p. 156)	Business (http://business.louisville.edu)
Elementary Education (Early)	MAT (p. 143)	-	-	RANK 1 (p. 145) ²	Education & Human Development (http://louisville.edu/education/)	Elementary, Middle, and Secondary Education	Geography Applied	MS (p. 156)	-	-	-	Arts & Sciences & Geosciences (http://louisville.edu/artsandsciences/)
Elementary Education Alternative Certification	MAT (p. 144)	-	-	-	Education & Human Development (https://louisville.edu/education/)	Elementary, Middle, and Secondary Education	Health Administration	MS (p. 157)	-	-	-	Public Health & Management Information Systems (https://louisville.edu/sphis/)
Engineering Logistics	-	-	-	Certificate (http://catalog.louisville.edu/graduate-study/graduate-certificate-engineering-logistics/#text)	Engineering	Industrial Engineering	Health & Physical Education	MAT (p. 162)	-	-	-	Education Teaching & Human Development Learning (http://louisville.edu/education/)
English	MA (p. 147)	-	PhD (p. 149)	-	Arts & Sciences (http://louisville.edu/artsandsci)	English	Healthcare Financial Management	-	-	-	Certificate (p. 163)	Arts & Philosophy Sciences (https://louisville.edu/artsandsci/intro/)
Entrepreneurship	-	-	PhD (p. 150) ¹	-	Business (http://business.louisville.edu)	Entrepreneurship	Healthcare Management	-	-	-	Certificate (p. 164)	Public Health & Information Sciences (https://louisville.edu/sphis/)
Environmental Engineering	-	-	-	Certificate (p. 151)	Engineering	Civil & Environmental Engineering	Healthcare Management	-	-	-	Certificate (p. 165)	Public Health & Information Sciences (https://louisville.edu/sphis/)
Epidemiology	MS (p. 152)	-	PhD (p. 267)	-	Public Health & Information Sciences (https://louisville.edu/sphis/)	Epidemiology & Population Health	Healthcare Quality and Project Management	-	-	-	Certificate (p. 166)	Public Health & Information Sciences (https://louisville.edu/sphis/)
Exercise Physiology	MS (p. 155)	-	-	-	Education & Human Development (http://louisville.edu/education/)	Health & Sport Sciences	Healthcare Systems Engineering	-	-	-	Certificate (p. 167)	Engineering Industrial (https://louisville.edu/engineering)

Health Data Analytics	MS* (p. 167)	-	-	-	Public Health & Information Sciences (https://louisville.edu/sphis/)	Health Management & Systems Science	Materials & Energy Science Engineering	MS* (p. 194)	-	-	-	Engineering (https://engineering.louisville.edu/)
Health Professor Education	MS* (p. 169)	-	-	-	Certificate in Education & Human Development (http://louisville.edu/education/)	Education & Human Leadership, Development, Evaluation, & Organizational Development	Mathematics	MA (p. 195)	-	PhD (p. 197)	-	Arts & Mathematics Sciences (https://louisville.edu/artsandsci/)
Higher Education Administration	MA* (p. 171)	-	-	-	Education & Human Leadership, Development, Evaluation, & Organizational Development	Educational Leadership, Evaluation, & Organizational Development	Mechanical Engineering	MEng (p. 201)	MEng (p. 199) ³	PhD (p. 202)	-	Engineering Mechanical (https://engineering.louisville.edu/)
History	MA (p. 172)	-	-	-	Arts & Sciences (http://louisville.edu/artsandsci/)	Arts & History	Medicine	-	-	MD (http://catalog.louisville.edu/profession/)	-	Medicine (https://louisville.edu/medicine/)
Horse Racing Industry Business	-	-	-	-	Certificate of Business (https://business.louisville.edu/)	College Equine of Business (https://business.louisville.edu/)	Medieval & Renaissance Studies	-	-	-	-	Certificate in Arts & History Sciences (https://louisville.edu/artsandsciences/)
Human Resources & Organizational Development	MS* (p. 174)	-	-	-	Education & Human Leadership, Development, Evaluation, & Organizational Development	Educational Leadership, Evaluation, & Organizational Development	Microbiology & Immunology	MS (p. 204)	-	PhD (p. 206)	-	Medicine Microbiology & Immunology (https://louisville.edu/medicine/)
Humanities	MA (p. 176)	-	-	PhD (p. 179)	Arts & Sciences (http://louisville.edu/artsandsciences/)	Arts & Humanities	Middle Grades Education	-	-	-	RANK 1 (p. 208) ²	Education Middle & Secondary Development Education (https://louisville.edu/education/)
Industrial Engineering	MS* (p. 180)	-	-	PhD (p. 181)	Engineering (https://engineering.louisville.edu/)	Industrial Engineering	Middle School Education	MAT (p. 209)	-	-	-	Education Middle & Secondary Development Education (https://louisville.edu/education/)
Interdisciplinary Studies	MA (p. 182)	MS (p. 183)	PhD (p. 183)	-	Graduate School (https://louisville.edu/graduate/)	Interdisciplinary Studies	Music Composition	-	MM (p. 212)	-	-	Music Music (https://louisville.edu/music/)
Latin American & Latino Studies	-	-	-	-	Certificate in Arts & Sciences (https://louisville.edu/artsandsci/)	Arts & Latin American & Latino Studies	Music Education	MAT (p. 214)	MME (p. 216)	-	-	Education & Human Development, Music
Law	-	-	-	JD (http://catalog.louisville.edu/professional/) ⁷	Law (https://louisville.edu/law/)	Law	Music History and Literature	-	MM (p. 217)	-	-	Music Music (https://louisville.edu/music/)
Managerial Analytics	-	-	-	-	Certificate in Business (https://business.louisville.edu/)	Business						

Music Performance	-	MM (p. 219)	-	-	Music (https://louisville.edu/music/)	Music	Physiology (p. 250)	MS	-	PhD (p. 251)	-	Medicine Physiology (https://louisville.edu/medicine/)
Music Theory	-	MM (p. 223)	-	-	Music (https://louisville.edu/music/)	Music	Police Executive Leadership	-	-	-	-	Certificate (p. 255) Arts & Criminal Sciences Justice (https://louisville.edu/artsandsci)
Neuroscience, Translational ⁵	-	-	PhD (p. 191) ⁵	-	Graduate School (https://louisville.edu/graduate/)	Interdisciplinary Studies	Political Science	MA (p. 255)	-	-	-	Arts & Political Sciences Science (https://louisville.edu/artsandsciences/)
Nursing	-	MSN (p. 228)	PhD, PhD-DNP (p. 232)	-	Nursing (https://louisville.edu/nursing/)	Nursing	Population Health Management	-	-	-	-	Certificate (p. 257) Public Health & Information Sciences (https://louisville.edu/sphis/)
Nursing Practice	-	-	DNP, PhD-DNP (p. 234)	-	Nursing (https://louisville.edu/nursing/)	Nursing	Psychology, Clinical	-	-	PhD (p. 258)	-	Arts & Psychological Sciences & Brain Sciences (https://louisville.edu/artsandsciences/)
Nursing Practice, Specialization in Nurse Anesthesia	-	-	DNP (p. 237)	-	School of Nursing (https://louisville.edu/nursing/academic/dnp/)	Nursing	Psychology, Experimental	-	-	PhD (p. 259)	-	Arts & Psychological Sciences & Brain Sciences (https://louisville.edu/artsandsci)
Nurse Practitioner - APRN	-	-	-	-	Certificate (p. 225) School of Nursing (https://louisville.edu/nursing/)	Nursing	Public Administration	-	MPA (p. 261)	-	-	Arts & Urban & Sciences Public Administration (https://louisville.edu/artsandsciences/)
Oral Biology	MS (p. 238)	-	-	-	Dentistry (https://louisville.edu/dentistry/)	Dentistry	Public Health	-	MPH (p. 262)	-	-	Public Health & Health Information Sciences (https://louisville.edu/sphis/)
Organizational Change in Higher Education	-	-	-	-	Certificate (p. 240) Education & Human Development (https://louisville.edu/education/development)	Educational Leadership, Evaluation, and Organization Development	Public Health Sciences, Epidemiology	-	-	PhD (p. 267)	-	Public Health & Epidemiology & Population Health (https://louisville.edu/sphis/)
Pan-African Studies	MA (p. 241)	-	PhD (p. 242)	Certificate (p. 240)	Arts & Sciences (https://louisville.edu/artsandsci)	Pan-African Studies	Public Health Sciences, Epidemiology	-	-	PhD (p. 270)	-	Public Health & Management Information Systems Sciences (https://louisville.edu/sphis/)
Pharmacology & Toxicology	MS (p. 244)	-	PhD (p. 245)	-	Medicine (https://louisville.edu/medicine/)	Pharmacology & Toxicology	Public Health Sciences, Health Management & Policy	-	-	PhD (p. 270)	-	Public Health & Management Information Systems Sciences (https://louisville.edu/sphis/)
Physics	MS (p. 247)	-	PhD (p. 249)	-	Arts & Sciences (https://louisville.edu/artsandsci)	Physics & Astronomy	Public Health Sciences, Health Management & Policy	-	-	PhD (p. 270)	-	Public Health & Management Information Systems Sciences (https://louisville.edu/sphis/)

Public Health Sciences, Health Promotion & Behavioral Sciences	-	-	PhD (p. 274)	-	Public Health & Information Sciences Behavioral Sciences (https://louisville.edu/sphis/)	Sociology MA (p. 293)	-	PhD (p. 295)	-	Arts & Sociology Sciences (https://louisville.edu/artsandsciences/)	
Public Health Training	-	-	-	Certificate (p. 277)	Public Health & Information Sciences (https://louisville.edu/sphis/)	Spanish MA (p. 296)	-	-	-	Arts & Classical Sciences & Modern Languages (https://louisville.edu/artsandsci)	
Public History	-	-	-	Certificate (p. 278)	Arts & History Sciences (https://louisville.edu/artsandsciences/)	Special Education (p. 303)	MAT* (p. 303)	MEd* (p. 299)	-	RANK 1 (p. 301) ²	Education Special & Human Education Development (https://louisville.edu/education/)
Real Estate Development	-	-	-	Certificate (p. 278)	Arts & Urban & Public Affairs (https://louisville.edu/artsandsci)	Special Education alt. certificatic	MAT* (p. 304)	-	-	-	Education Special & Human Education Development (https://louisville.edu/education,
School Social Work	-	-	-	RANK 1 (p. 279) ²	Education Special & Human Education Development (https://louisville.edu/education/)	Special Education - MAT LBD	MAT* (http://catalog.louisville.edu/graduate/programs-study/master-of-arts-in-teaching-in-special-education-specialization-in-learning-behavior-disorders/)	-	-	-	Education Special and Education Human Development (https://louisville.edu/education/)
Secondary Education (p. 281)	-	-	-	RANK 1 (p. 280) ²	Education Middle & Human Secondary Development (https://louisville.edu/education,	Special Education alt. certificatic (MATLBD)	MAT* (p. 302)	-	-	-	Education Special & Human Education Development (https://louisville.edu/education,
Secondary Education alt. certification	-	-	-	-	Education Middle & Human Secondary Development (https://louisville.edu/education/)	Special Education, non-teaching	-	MEd* (p. 298)	-	-	Education Special & Human Education Development (https://louisville.edu/education/)
Six Sigma	-	-	-	Certificate (p. 284)	Engineering Management engineerin (https://louisville.edu/)	Special Education, non-teaching	-	MEd* (p. 298)	-	-	Education Special & Human Education Development (https://louisville.edu/education/)
Social Work	-	MSSW* (p. 284)	PhD (p. 292)	RANK 1 (p. 279) ²	Social Work (https://louisville.edu/kent/)	Special Education, non-teaching	-	MEd (p. 298)	-	-	Education Special & Human Education Development (https://louisville.edu/education,
Social Work	-	-	DSW* (p. 290)	-	Social Work (https://louisville.edu/kent/)	Special Education, non-teaching (Autism concentra	-	MEd (p. 298)	-	-	Education Special & Human Education Development (https://louisville.edu/education,

Sport Administration (p. 106)	MS*	-	-	-	Education Health & Human Development Sciences (https://louisville.edu/education/)	Women's, MA Gender & Sexuality Studies (p. 318)	-	-	Certificate Arts & Sciences Gender & Sexuality Studies (https://louisville.edu/artsandsciences/)
Structural Engineering	-	-	-	-	Certificate in Structural Engineering (https://nextcatalog.louisville.edu/graduate-programs-study/graduate-certificate-in-structural-engineering/)	Engineering Civil & Environmental Engineering (https://nextcatalog.louisville.edu/graduate-programs-study/graduate-certificate-in-structural-engineering/)	-	-	1 This program is not currently accepting applications for admission. 2 Rank 1 programs are not degree programs. Rank 1 programs are recognized only in the state of Kentucky. They are planned graduate-level programs designed for Kentucky educators seeking rank change for salary purposes. 3 Master of Engineering (MEng) programs other than Engineering Management are only available for students who have matriculated through a bachelor degree program at Speed School. Master of Science (MS) programs are for individuals from other institutions or for students with a BS who are returning for a master's degree. 4 The EdS (Education Specialist) degree in Educational Administration is a 30 credit hour, post-master's degree program. 5 Interdisciplinary program concentration or specialization. 6 Concentration title was "Bioethics and Medical Humanities" prior to 2019-2020. 7 Professional degree program 8 Post-graduate certificate. Advanced Practice registered nurses or registered nurses that hold a terminal degree (i.e., PhD, EdD, DNP) are eligible to apply.
Studio Art & Design (also see Art)	-	MFA (p. 307)	-	-	Arts & Fine Arts Sciences (https://louisville.edu/artsandsciences/)	-	-	-	
Sustainable MA & MS (p. 185) ⁵	-	-	-	-	Graduate Urban & School Public Affairs (https://louisville.edu/graduate/)	-	-	-	
Teaching and Learning	-	MEd* (p. 309)	-	-	Education & Human Development (https://louisville.edu/education/)	-	-	-	
Teaching English as an International Language (TEIL)	-	-	-	-	Certificate in Education & Human Development (http://louisville.edu/online/program-finder/?program=c	-	-	-	
Theatre Arts	-	MFA (p. 312)	-	-	Arts & Fine Arts Sciences (https://louisville.edu/artsandsciences/)	-	-	-	
Transportation Engineering	-	-	-	-	Certificate in Engineering (p. 313) (https://nextcatalog.louisville.edu/graduate-programs-study/graduate-certificate-in-transportation-engineering/)	Engineering Civil & Environmental Engineering (https://nextcatalog.louisville.edu/graduate-programs-study/graduate-certificate-in-transportation-engineering/)	-	-	
Urban & Public Affairs	-	-	PhD (p. 314)	-	Arts & Urban & Public Sciences Public Affairs (https://louisville.edu/artsandsciences/)	-	-	-	
Urban Planning	-	MUP (p. 315)	-	-	Arts & Urban & Public Sciences Public Affairs (https://louisville.edu/artsandsciences/)	-	-	-	

Doctor of Audiology – AuD (p. 61)

Doctor of Nursing Practice (p. 234)– (p. 234) DNP (p. 234)

Doctor of Nursing Practice, Specialization in Nurse Anesthesia - DNP (p. 237)

Doctor of Education – EdD

- Educational Leadership and Organizational Development

Specialist in Education – EdS

- Curriculum and Instruction
- Educational Administration - Instructional Leadership

Doctor of Philosophy – PhD

- Anatomical Science and Neurobiology
- Biochemistry and Molecular Genetics
- Biology
- Biostatistics
- Chemical Engineering
- Chemistry
- Civil Engineering
- Clinical Psychology
- Computer Science and Engineering
- Counseling and Personnel Services

- Criminal Justice
- Curriculum and Instruction
- Educational Leadership and Organizational Development
- Electrical Engineering
- English Rhetoric and Composition
- Entrepreneurship
- Experimental Psychology
- Humanities
- Industrial Engineering
- Interdisciplinary Studies
- Interdisciplinary Studies: Specialization in Bioinformatics
- Interdisciplinary Studies: Specialization in Translational Bioengineering
- Interdisciplinary Studies: Specialization in Translational Neuroscience (p. 191)
- Mathematics, Applied and Industrial (p. 197)
- Mechanical Engineering
- Microbiology and Immunology
- Nursing
- Pan-African Studies
- Pharmacology and Toxicology
- Physics
- Physiology
- Public Health Sciences: Specialization in Epidemiology (p. 267)
- Public Health Sciences: Specialization in Health Management and Policy (p. 270)
- Public Health Sciences: Specialization in Health Promotion and Behavioral Sciences (p. 274)
- Social Work (p. 292)
- Sociology, Applied (p. 295)
- Urban and Public Affairs

Master of Arts – MA

- Anthropology
- Applied Philosophy
- Art (Creative) and Art History
- Communication
- English
- Higher Education Administration
- History
- Humanities
- Interdisciplinary Studies
- Interdisciplinary Studies: Concentration in Sustainability (p. 184)
- Mathematics
- Pan-African Studies
- Political Science
- Sociology
- Spanish
- Women's, Gender and Sexuality Studies

Master of Arts in Teaching – MAT

- Early Childhood Education (Interdisciplinary)
- Elementary Education

- Health and Physical Education
- Middle School Education
- Middle School Education - Alternative Certification (5-9)
- Music Education
- Secondary Education
- Secondary Education - Alternative Certification (8-12)
- Special Education, Concentration in Moderate/Severe Disabilities (P-12)
- Special Education, Concentration in Moderate/Severe Disabilities (P-12) - Alternative Certification

Master of Business Administration – MBA

Master of Education – MEd

- Counseling and Personnel Services
- Special Education
- Special Education (Non-Teaching)
- Special Education (Non-Teaching) Concentration in Autism Spectrum Disorders and Applied Behavior Analysis
- Teaching and Learning

Master of Engineering – MEng

- Bioengineering (p. 67)
- Chemical Engineering (p. 89)
- Civil Engineering (p. 98)
- Computer Science and Engineering (p. 109)
- Electrical Engineering (p. 139)
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- Mechanical Engineering (p. 199)

Master of Fine Arts – MFA

- Studio Art and Design
- Theatre Arts

Master of Music – MM

- Music Composition
- Music History and Literature
- Music Performance
- Music Theory

Master of Music Education in Music Education – MME (p. 216)

Master of Public Administration – MPA

Master of Public Health – MPH

Master of Science – MS

- Accountancy and Analytics (p. 48)
- Anatomical Science and Neurobiology
- Biochemistry and Molecular Genetics
- Bioengineering (p. 69)
- Biology
- Biostatistics
- Business Analytics
- Chemical Engineering
- Chemistry
- Civil Engineering
- Communicative Disorders
- Computer Science (p. 108)
- Couple and Family Therapy
- Criminal Justice
- Electrical Engineering
- Epidemiology
- Exercise Physiology
- Geography, Applied (p. 156)
- Health Administration
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- Industrial Engineering
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- Interdisciplinary Studies: Concentration in Sustainability (p. 184)
- Materials and Energy Science and Engineering (p. 194)
- Mechanical Engineering
- Microbiology and Immunology
- Oral Biology
- Pharmacology and Toxicology
- Physics
- Physiology
- Sport Administration

Master of Science in Clinical Investigation Sciences – MSc

Master of Science in Dentistry – MSD

Master of Science in Nursing – MSN

Master of Science in Social Work – MSSW

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- Asian Studies (p. 61)
- Autism and Applied Behavior Analysis (p. 63)
- Biostatistics
- Business of Healthcare
- Clinical Investigative Sciences (p. 101)
- Cybersecurity (p. 126)
- Data Science (p. 127)
- Distilled Spirits Business (p. 130)
- Diversity Literacy (p. 130)
- Engineering Logistics (<http://catalog.louisville.edu/graduate/programs-study/graduate-certificate-engineering-logistics/#text>)
- Environmental Engineering (p. 151)
- Family Business Management and Advising (p. 155)
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- Pan-African Studies (p. 240)
- Police Executive Leadership Development (p. 255)
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- Six Sigma (<https://engineering.louisville.edu/>)
- Structural Engineering (p. 306)
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- Gifted and Talented Education (P-12) (<http://louisville.edu/education/degrees/endorsements/>)
- Instructional Computer Technology (P-12) (<http://louisville.edu/education/degrees/endorsements/>)
- Teacher Leadership (P-12) (<http://louisville.edu/education/degrees/endorsements/>)
- Teaching Classroom Reading (P-12) (<http://louisville.edu/education/degrees/endorsements/>)
- Teaching English as a Second Language (P-12) (<http://louisville.edu/education/degrees/endorsements/>)
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College of Arts and Sciences

A

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- Applied Philosophy (MA) (p. 57)
- Art (Creative) and Art History (MA) (p. 58)
- Asian Studies (CERT) (p. 61)

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C

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College of Education and Human Development

A

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C

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- Special Education, Concentration in Learning Behavior Disorders P-12 (MAT) (<http://catalog.louisville.edu/graduate/programs-study/master-of-arts-in-teaching-in-special-education-specialization-in-learning-behavior-disorders/>)
- Special Education, Concentration in Learning Behavior Disorders P-12, Alternative Certification (MAT) (p. 302)
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Kent School of Social Work and Family Science

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J.B. Speed School of Engineering

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Dual Degree Programs

A dual degree program is a formalized path of study that allows a student to pursue two different degrees at the same time, either at the same institution or at different institutions, and possibly complete them in less time than it would take to earn them separately. The two degrees may be in the same subject or in two different subjects; they may be at the same level (e.g., master's-master's) or at two different levels (e.g., doctoral-master's).

Students must meet the admission requirements for both degree programs. Other limitations or requirements may apply, depending on the program. Interested individuals may click on the links below for additional information.

Dual Dentistry-Graduate Degree Programs

- Combined Doctor of Dental Medicine and Master of Business Administration (DMD/MBA) (<https://business.louisville.edu/academics-programs/graduate-programs/dualmba/>)
- Combined Doctor of Dental Medicine and Master of Science in Oral Biology (DMD/MS) (<http://louisville.edu/dentistry/degrees/oralbiology/dmd-msob/>)
- Combined Doctor of Dental Medicine and Doctor of Philosophy (DMD/PhD) (<http://louisville.edu/dentistry/degrees/oralbiology/dmd-phd/>)

Dual Law-Graduate Degree Programs

- Combined Juris Doctor and Master of Arts in Humanities (JD/MA) (<https://louisville.edu/law/academics/degree-programs/dual-degree-programs/>)
- Combined Juris Doctor and Master of Arts in Political Science (JD/MA) (<https://louisville.edu/law/academics/degree-programs/dual-degree-programs/>)
- Combined Juris Doctor and Master of Business Administration (JD/MBA) (<https://louisville.edu/law/academics/degree-programs/dual-degree-programs/>)
- Combined Juris Doctor and Master of Public Administration (JD/MPA) (<https://louisville.edu/law/academics/degree-programs/dual-degree-programs/>)
- Combined Juris Doctor and Master of Science in Social Work (JD/MSSW) (<https://louisville.edu/law/academics/degree-programs/dual-degree-programs/>)
- Combined Juris Doctor and Master Urban Planning (JD/MUP) (<https://louisville.edu/law/academics/degree-programs/dual-degree-programs/>)
- Combined Juris Doctor and Master of Science in Divinity (JD/MDiv) (<https://louisville.edu/law/academics/degree-programs/dual-degree-programs/>)
with Louisville Presbyterian Theological Seminary (Program closed to enrollment)

Dual Medicine-Graduate Degree Programs

- Combined Doctor of Medicine and Master of Business Administration (MD/MBA) (<http://louisville.edu/medschool/dualdegree/MBA/>)
- Combined Doctor of Medicine and Doctor of Philosophy (MD/PhD) (<http://louisville.edu/medschool/dualdegree/PhD/>)

Dual Graduate-Graduate Degree Programs

- Combined Doctor of Audiology and Master of Business Administration (Aud.D/MBA) (<https://business.louisville.edu/academics-programs/graduate-programs/dualmba/>)

- Combined Doctor of Philosophy in Applied and Industrial Mathematics and Master of Science in Biostatistics (PhD/MS) (<https://louisville.edu/sphis/departments/bioinformatics-biostatistics/academics/dualdegree/>)
- Combined Master of Arts in Pan-African Studies and Master of Science in Social Work (MA/MSSW) (<https://louisville.edu/kent/academics/mssw-curriculum/>)
- Combined Master of Science in Couple and Family Therapy and Master of Science in Social Work (MS/MSSW) (<https://louisville.edu/kent/academics/couple-and-family-therapy/>)
- Combined Master of Public Administration/Master of Arts (Curatorial Studies) (MPA/MA) (<http://louisville.edu/upa/programs/mpa/mpa-ma/>)
- Combined Master of Arts in Women's, Gender and Sexuality Studies and Master of Science in Social Work (MA/MSSW) (<http://louisville.edu/wgs/graduate-studies/m-a-mssw.html>)
- Combined Master of Business Administration and Master of Arts in Humanities - Concentration in Public Humanities (MBA/MA) (<https://business.louisville.edu/academics-programs/graduate-programs/dualmba/>)
- Combined Master of Business Administration and Master of Divinity (MBA/MDiv) (<https://business.louisville.edu/academics-programs/graduate-programs/dualmba/>)
with Louisville Presbyterian Theological Seminary
- Combined Master of Business Administration and Master of Engineering (MBA/MEng) (<https://business.louisville.edu/academics-programs/graduate-programs/dualmba/>)
- Combined Master of Business Administration and Master of Science in Health Administration (MBA/MSHA) (<https://louisville.edu/sphis/departments/hmss/academics-1/dual-mba-msha/>)
- Combined Master of Public Administration and Master of Urban Planning (MPA/MUP) (<http://louisville.edu/upa/programs/mup/mup-mpa/>)
- Combined Master of Public Health in Health Policy and Master of Science in Health Administration (MPH/MSHA) (<https://louisville.edu/sphis/departments/hmss/academics-1/dual-mph-in-health-policy-msha-program/>)
- Combined Master of Divinity and Master of Science in Social Work (MDiv/MSSW) (<https://louisville.edu/kent/academics/mssw-curriculum/>)
with Louisville Presbyterian Theological Seminary

The links below lead to the university's online learning website. For curriculum information on a particular program, please refer to the corresponding program page (p. 34) in this catalog.

Online Doctoral Degrees

- Doctor of Social Work (DSW) (<https://louisville.edu/online/programs/doctoral/online-doctor-of-social-work/>)

Online Master's Degrees

- Biostatistics (MS) (http://louisville.edu/online/programs/masters/master-of-science-in-biostatistics/?utm_source=uofl-catalog)
- Business Analytics (MSBA) (<https://louisville.edu/online/programs/masters/online-master-of-science-in-business-analytics/msba/>)
- Business Administration (MBA) (http://louisville.edu/online/programs/masters/master-of-business-administration/?utm_source=uofl-catalog)

- Civil Engineering (MS) (http://louisville.edu/online/programs/masters/master-of-science-in-civil-engineering/?utm_source=uofl-catalog)
- Computer Science (MS) (http://louisville.edu/online/programs/masters/master-of-science-in-computer-science/?utm_source=uofl-catalog)
- Criminal Justice (MS) (http://louisville.edu/online/programs/masters/master-of-science-in-criminal-justice/?utm_source=uofl-catalog)
- Early Childhood Education, Interdisciplinary - Alternative Certification (MAT) (<https://louisville.edu/online/programs/masters/online-mat-in-interdisciplinary-early-childhood-education/>)
- Electrical Engineering (MS) (p. 141)
- Engineering Management (MEng) (http://louisville.edu/online/programs/masters/master-of-engineering-in-engineering-management/?utm_source=uofl-catalog)
- Health Administration (MS) (http://louisville.edu/online/programs/masters/online-master-of-science-in-health-administration/?utm_source=uofl-catalog)
- Health Data Analytics (MS) (http://louisville.edu/online/programs/masters/master-of-science-in-health-data-analytics/?utm_source=uofl-catalog)
- Health Professions Education (MS) (p. 169)
- Higher Education Administration (MA)—with concentrations (http://louisville.edu/online/programs/masters/master-of-arts-in-higher-education/?utm_source=uofl-catalog)
- Human Resources and Organization Development (MS)—with concentrations (http://louisville.edu/online/programs/masters/master-of-science-in-human-resources-and-organization-development/?utm_source=uofl-catalog)
- Industrial Engineering (MS) (<https://louisville.edu/online/programs/masters/online-master-of-science-in-industrial-engineering/>)
- Materials and Energy Science and Engineering (MS) (<http://louisville.edu/online/programs/masters/master-of-science-in-materials-and-energy-science-engineering/>)
- Social Work (MS)—with areas of specialization (http://louisville.edu/online/programs/masters/master-of-science-in-social-work/?utm_source=uofl-catalog)
- Special Education (MEd)—with concentrations (<http://louisville.edu/online/programs/masters/master-of-education-in-special-education/>)
- Special Education (MAT)—concentration in Moderate/Severe Disabilities (MSD) (http://louisville.edu/online/programs/masters/master-of-arts-in-teaching-in-special-education/?utm_source=uofl-catalog)
- Special Education (MAT)—concentration in Moderate/Severe Disabilities (MSD), alternative certification (http://louisville.edu/online/programs/masters/master-of-arts-in-teaching-in-special-education/?utm_source=uofl-catalog)
- Sport Administration (MS) (http://louisville.edu/online/programs/masters/master-of-science-in-sport-administration/?utm_source=uofl-catalog)
- Teaching and Learning (MEd)—with endorsements and concentrations (http://louisville.edu/online/programs/masters/master-of-education-in-teacher-leadership/?utm_source=uofl-catalog)

Online Graduate Certificates

- African American Theatre (<https://louisville.edu/online/programs/certificate-programs/online-graduate-certificate-in-african-american-theatre/>)
- Artificial Intelligence in Medicine (<https://louisville.edu/online/programs/certificate-programs/certificate-in-artificial-intelligence-in-medicine/>)
- Autism and Applied Behavior Analysis (p. 63)
- Biostatistics (http://louisville.edu/online/programs/certificate-programs/certificate-in-biostatistics/?utm_source=uofl-catalog)
- Business of Healthcare (p. 88)
- Cybersecurity (http://louisville.edu/online/programs/certificate-programs/graduate-certificate-in-cybersecurity/?utm_source=uofl-catalog)
- Data Science (http://louisville.edu/online/programs/certificate-programs/graduate-certificate-in-data-science/?utm_source=uofl-catalog)
- Distilled Spirits Business (http://louisville.edu/online/programs/certificate-programs/distilled-spirits-business-certificate/?utm_source=uofl-catalog)
- Engineering Logistics (<http://catalog.louisville.edu/graduate/programs-study/graduate-certificate-engineering-logistics/#text>)
- Family Business Management and Advising (p. 155)
- Franchise Management (http://louisville.edu/online/programs/certificate-programs/franchise-management/franchise-management-certificate/?utm_source=uofl-catalog)
- Healthcare Financial Management (<https://louisville.edu/online/programs/certificate-programs/online-graduate-certificate-in-healthcare-financial-management/>)
- Healthcare Management (<https://louisville.edu/online/programs/certificate-programs/online-graduate-certificate-in-healthcare-management/online-graduate-certificate-in-healthcare-management/>)
- Healthcare Quality and Project Management (<https://louisville.edu/online/programs/certificate-programs/online-graduate-certificate-in-healthcare-quality-and-project-management/>)
- Healthcare Systems Engineering (<https://louisville.edu/online/programs/certificate-programs/online-graduate-certificate-in-healthcare-systems-engineering/>)
- Health Professions Education (<https://louisville.edu/online/programs/certificate-programs/online-certificate-in-health-professions-education/>)
- Horse Racing Industry Business (p. 174)
- Managerial Analytics (<https://louisville.edu/online/programs/certificate-programs/online-managerial-analytics-certificate/>)
- Organizational Change in Higher Education (https://louisville.edu/online/programs/certificate-programs/online-graduate-certificate-in-organizational-change-in-higher-education/?utm_source=uofl-catalog)
- Population Health Management (<https://louisville.edu/online/programs/certificate-programs/online-graduate-certificate-in-population-health-management/>)
- Public Health Training (p. 277)
- Six Sigma (<https://engineering.louisville.edu/>)
- Structural Engineering (http://louisville.edu/online/programs/certificate-programs/structural-engineering/?utm_source=uofl-catalog)

- Teaching English as a Foreign Language (TEFL) (http://louisville.edu/online/programs/certificate-programs/certificate-in-teaching-english-as-an-international-language/?utm_source=uofl-catalog)
- Transportation Engineering (http://louisville.edu/online/programs/certificate-programs/transportation-engineering/?utm_source=uofl-catalog)

Teaching Endorsements

- Classroom Reading (P-12) (http://louisville.edu/online/programs/teaching-endorsements/classroom-reading-endorsement/?utm_source=uofl-catalog)
- English as a Second Language (ESL) (P-12) (http://louisville.edu/online/programs/teaching-endorsements/english-as-a-second-language-endorsement/?utm_source=uofl-catalog)
- Instructional Technology (P-12) (http://louisville.edu/online/programs/teaching-endorsements/instructional-technology-endorsement/?utm_source=uofl-catalog)

Accountancy and Analytics (MS)



This program was approved for students entering the university in the Summer 2023–Spring 2024 catalog year. For more information about catalog year, go to Catalog Year Information (<http://catalog.louisville.edu/undergraduate/university-wide-unit-specific-policies/catalog-year/>).

Master of Science in Accountancy and Analytics

Unit: College of Business (<https://business.louisville.edu/>) (GB)
Department: Accountancy (<https://business.louisville.edu/academics-programs/undergraduate-programs/accountancy/>)
Academic Plan Code(s): ACANMS

Program Information

The mission of the College of Business is to prepare students for responsible and rewarding careers, as well as to enhance the economic vitality of the city, the region, and the broader business community. The Master of Science in Accountancy and Analytics (MSAA) program serves both missions by creating an opportunity for business professionals to have access to a continuing education program in the accounting and analytics area. The combination of accounting and analytics knowledge will satisfy regional labor requirements as businesses transition to a more data driven environment.

This program is designed to:

- Equip graduates with technical accounting knowledge of GAAP (Generally Accepted Accounting Principles)

- Prepare graduates to assume leadership positions in the professional practice of accounting as Certified Public Accountants
- Provide graduates with functional knowledge of data science from a managerial perspective
- Impart graduates with programmatic or professional understanding of the results of data effectively, especially in terms of data visualization and data storytelling.

The Master of Science in Accountancy and Analytics is a 37 credit hour cohort-based program. Graduates of the program may also receive the Graduate Certificate in Managerial Analytics. This graduate certificate is a twelve (12) credit hour certificate that provides business professionals with the skills to thrive in a data driven environment.

Admission Requirements

- **Create application account**
Apply at the College of Business graduate programs website (<http://business.louisville.edu/uoflmac/>).
- **Two letters of recommendation**
Within the application, submit name and email address of your recommender. He/she will receive an email invitation on your behalf. Your recommender should speak to your character, academic aptitude, etc.
- **Professional resume**
- **Personal statement**
Within the application, attach a one–two page Word document describing your interest in the University of Louisville MAC program, why you selected the University of Louisville, your short and long term goals and any additional information you feel is relevant.
- **Submit and pay application fee**
- **Official college transcript(s)**
Order an official college transcript from all colleges attended, including the degree granting institution.
- **Graduate Management Admission Test (GMAT) or Graduate Record Examination (GRE)**
Waivers available

International Applicants

We welcome international applicants. Please be aware there are documents required in addition to the above list. Visit the graduate admissions page of the College of Business website (<https://business.louisville.edu/academics-programs/apply-to-cob/>) and open the International Applicant Checklist.

Program Requirements

Year 1		
Fall		
		Hours
MAC 622	Advanced Accounting Information Systems	3
MAC 610	Commercial Law for Professional Accountants	3
MAC 644	CPA Exam Preparation BEC	1
MAC 660	Financial Statement Analysis	3
MAC 668	Statistical Analysis	3
		Hours
		13
Spring		
ANLY 620	Advanced Business Analytics	1.5
ANLY 625	Spreadsheet Modeling for Analytics	1.5
MAC 620	Advanced Audit and Assurance Services	3
MAC 626	Advanced Corporate Financial Reporting	3
MAC 640	CPA Preparation and Review AUD	1

MAC 646	CPA Preparation and Review FAR	1
Hours		11
Summer		
ANLY 610	Database	1.5
ANLY 615	Artificial Intelligence	1.5
ANLY 630	Blockchain	1.5
ANLY 635	Storeytelling with Data	1.5
MAC 632	Leadership	1.5
MAC 642	CPA Exam Preparation REG	1
MAC 676	Global Learning	1.5
MAC 680	Capstone Project I	1.5
MAC 682	Capstone Project II	1.5
Hours		13
Minimum Total Hours		37

The Master of Accountancy and Analytics program prepares students to meet the requirements for certification and/or licensure. If you plan to pursue professional licensure or certification you should first determine your state's criteria for examination and licensure to see how/if our program meets those requirements prior to enrollment. We recommend that you also contact your state's licensing board directly to verify that the requirements have not changed recently and to answer any questions especially those regarding additional requirements beyond the degree.

More information about certification or licensure is available at the following website:

Kentucky State Board of Accountancy - CPA Exam Candidates

<https://cpa.ky.gov/examcandidates/Pages/default.aspx>

National Association of State Boards of Accountancy (NASBA) - The CPA Candidate Bulletin

https://nasba.org/wp-content/uploads/2023/02/Candidate-Bulletin-2023_February.pdf

African American Theatre (CERT)



Graduate Certificate in African American Theatre

Unit: College of Arts and Sciences (<http://louisville.edu/artsandsciences/>) ([GA](#))

Department: [Theatre Arts](#)

Program Webpage

Academic Plan Code(s): AATHCAT, AATHCATO

Program Information

This program can be completed in a traditional classroom format or entirely online (<https://louisville.edu/online/programs/certificate-programs/online-graduate-certificate-in-african-american-theatre/>).

The first (and only) graduate certificate program in African American Theatre in the United States.

The certificate requires 15 credit hours of graduate credit including:

- Nine (9) credit hours in African American Theatre
- Three (3) credit hours of theatre-related community service
- Three (3) credit hours of electives (approved by the AATP director)

The African American Theatre certificate can be completed as a stand-alone program or in conjunction with another graduate program in any area (e.g. Comparative Humanities, English, Music, Pan-African Studies).

The certificate program is specially designed for:

- Persons preparing for professional careers in the theatre arts
- Teachers, government and community agency professionals
- Individuals with a passion for theatre and performance from Africa and the African Diaspora
- Graduate students at the University of Louisville and other institutions

Admission Requirements

Application for Admission

- All candidates for admission to graduate programs must complete the online application form (<http://louisville.edu/graduate/apply/>).
- Consult with your intended program for specific application deadlines.
- A new application must be received any time a student is beginning a graduate program, transferring graduate programs, changing from non-degree to degree-seeking status, or adding a dual or certificate program to an existing degree program.
- **Note:** The University of Louisville reserves the right to change programs of study, academic requirements, fees, schedules of courses, the announced academic calendar and deadlines without prior notice.

Application Fee

- A non-refundable application fee (<http://louisville.edu/graduate/futurestudents/application-directions/>) is required with the application. Applications will not be forwarded to the department until this fee is paid.

Transcripts

- Applications to non-degree or certificate programs need only submit an official transcript certifying at least a bachelor's degree.
- All University of Louisville transcripts will automatically be submitted with the completion of an application. Transcripts must be sent directly from the school to the Graduate School, Graduate Admissions, in order to be considered official.

English Proficiency

- All applicants for whom English is a second language must also submit official TOEFL scores of 79 or higher on the internet-based test, 213 or higher on the computer-based test for verification of English proficiency. English proficiency can also be met by submitting official IELTS scores of at least 6.5 overall band score from the academic module exam or Duolingo overall score of 105.
- Information concerning the TOEFL exam can be obtained from www.ets.org/toefl (<http://www.ets.org/toefl/>) or 1-877-863-3546.
- Information concerning the IELTS exam can be obtained from www.ielts.org (<http://www.ielts.org/>).
- Information concerning the Duolingo exam can be obtained from englishtest.duolingo.com/applicants (<https://englishtest.duolingo.com/applicants/>)
- Students holding a bachelor's or advanced degree from an accredited institution in the United States may be exempt from this requirement.

Visiting Student Certification

- All visiting students must submit a Visiting Student Letter. The letter should verify that the student is in good standing in a graduate program, indicate the specific term for which the student has permission to enroll, list the approved courses to be taken, and be signed by the registrar or dean of the student's home school. It must be sent via regular mail; faxed or emailed copies will not be accepted.
- Other than the application and the application fee, the Visiting Student letter is the only credential required of visiting students.

Recommendations

- Two letters of recommendation from persons familiar with the applicant's academic work are required. There are programs that require more than two letters of recommendation. Please check with your department for additional requirements.
- Applicants applying for visitor status are not required to submit letters of recommendation. Letter of Recommendation may be completed electronically via the online application (<http://louisville.edu/graduate/apply/>).

Additional Requirements

- All credentials and/or communications submitted to the Graduate School, Graduate Admissions should contain the student's full name, University of Louisville issued student ID, and date of birth. Lack of this information may cause processing to be delayed.

Program Requirements

Code	Title	Hours
MFA graduate students (contact AATP Director for alternative options)		
TA 566	Advanced History of African-American Theatre (or TA Elective)	3
TA 664	Approaching African-American Theatre ^{1,3}	3
TA 654	Independent Study in Community Service ^{1,3}	3
TA Elective in African American Theatre (including TA 557 Advanced Hip Hop Theatre, TA 562 Advanced Black Dramatic Literature, TA 563 Advanced African American Women in Theatre, and TA 565 Advanced Theatre of the African World) ¹		3
One or more of the following:		3

TA 625	MFA Performance Project I (in an approved play) ^{1,2}
or TA 655	Independent Study
TA 626	Thesis Performance (in an approved play) ¹
TA 655	Independent Study (or approved courses in PAS, Humanities, and English)
Minimum Total Hours	
15	
<i>African American Theatre Program courses that can be taken for graduate credit and are offered online:</i>	
TA 562	Advanced Black Dramatic Literature
TA 557	Advanced Hip-Hop Theatre
TA 555	Special Topics in Theatre (Adv Cultural Diversity in Performance)

Note: Students enrolled in the MFA in Theatre Arts may not count more than 6 required MFA credits towards the Certificate.

¹ Required for the MFA.

² Two (2) credit hours required for MFA thesis performance.

³ The Director of the AATP can approve the substitution of graduate credits earned in other universities' graduate programs, particularly for students pursuing the certificate as a stand-alone program.

Anatomical Sciences and Neurobiology (MS)

Master of Science in Anatomical Science and Neurobiology

Unit: School of Medicine (<http://louisville.edu/medicine/>) (GM)

Department: Anatomical Science and Neurobiology (<http://louisville.edu/medicine/departments/anatomy/>)

Program Webpage (<https://louisville.edu/medicine/departments/anatomy/graduateprograms/>)

Academic Plan Code(s): ASNBMS

Program Information

The Department of Anatomical Sciences and Neurobiology (ASNB) Master of Science (MS) program is available to qualified individuals possessing a bachelor's degree from an accredited college or university. No specific undergraduate major is required, although some science background is required. Anatomical Sciences and Neurobiology has two program options available for students interested in earning the MS Degree:

The MS degree is offered to students interested in conducting original research and planning to continue their training and education in Anatomy and Neurobiology. This program option is available to all students accepted into the MS Program.

The MS degree program requires full-time study and it is expected that while participating in these programs, students will devote full-time effort toward completion of the degree requirements.

Admission Requirements

All students wishing to apply must submit an application to the Graduate School, Graduate Admissions with the following required documents:

- A formal application (<http://louisville.edu/graduate/apply/>) submitted to the Graduate School, Graduate Admissions (see website: louisville.edu/graduate/apply (<https://louisville.edu/>))

graduate/futurestudents/apply-materials/application/), for forms and directions.

- b. Application fee.
- c. A minimum of two letters of recommendation.
- d. Official transcripts of all college work.
- e. A brief statement of purpose describing your interests and career goals.
- f. All international applicants whose native language is not English must submit Test of English as a Foreign Language (TOEFL/IELTS/ Duolingo) scores. Students holding a bachelor's or advanced degree from an accredited institution in the United States are exempt from this requirement.

Optional document:

- Official scores on the Graduate record Examination (GRE) Test
- Official scores on the Medical College Admission Test (MCAT)

Review of applications begins in December and continues until all positions are filled. Admission into the program is competitive and applicants are encouraged to submit the applications early.

Program candidates are only admitted in the Fall semester. graduate program orientation begins August 1 (Although note that some Fall semester classes begin as early as mid-July).

Program Requirements

Coursework Requirements for the MS Degree

Students should familiarize themselves with the general requirements for the master's degree as stated in the current University of Louisville Graduate Catalog. Briefly, a minimum of 30 credit hours is required for the master's degree, of which 15 credit hours must be in courses of the major subject area, the program is typically completed within a two year period. The statute of limitation for obtaining a Master's degree is six years from admission to the program.

At least one-half of the credits counted toward the degree must be 600-level courses or above. This does not include nine (9) credit hours of research. The department has the following additional requirements:

Code	Title	Hours
Coursework		
Students will successfully complete at least two of the following courses within the department:		
ASNB 601	Gross Anatomy	6.5
ASNB 602	Fundamentals of Neuroscience	4
ASNB 605	Human Embryology	3
ASNB 617	Seminar on Developmental Neurobiology ¹	3
ASNB 614	Molecular Neuroscience ¹	4
ASNB 666	Synaptic Organization of the Central Nervous System ¹	3
ASNB 630	Origin of Mammalian Sensory Systems and Comparative Neurobiology	4
ASNB 671	General and Oral Histology	5
ASNB 606	Anatomy Seminar (taken each semester prior to candidacy)	1/ semester
Electives (see notes below)		varies
Minimum Total Credit Hours		30

¹ Offered on a rotational basis

Seminar

Anatomy Seminar (ASNB 606, 1 credit hour) must be taken for credit each semester prior to candidacy.

Electives

Additional courses (electives) within Anatomical Sciences and Neurobiology program or graduate level courses in other departments may be taken to achieve the minimum requirement of 30 credit hours. The student should consult with his/her advisor on the selection of the appropriate electives.

Additional Information for the MS Degree

Research Hours

Research credit hours may be taken as Laboratory Rotation (ASNB 618), which is graded on a pass/fail basis, prior to choosing a mentor. Once a mentor is chosen, research hours are taken as Original Investigation (ASNB 619), in which students earn a letter grade.

Original Research

Students will conduct this required research under the direction of a member or joint/associate member of the departmental faculty (hereafter known as the thesis advisor). Faculty reserve the right to decline accepting a student.

During the first year of enrollment, students are required to visit the laboratories of potential advisors to become acquainted with the faculty and the research opportunities available. Selection of an advisor and the initiation of a research project should be concluded prior to the end of the first year, at which time a written agreement, signed by both the student and thesis advisor, will be filed with the Graduate Program Director.

Candidacy

After completion of all requirements (as outlined above), students enter Master's Candidacy and must register for and maintain candidacy (MAST 600) until the successful defense of his/her thesis. This registration must be maintained year round (Fall, Spring and Summer semesters) until the degree is awarded. Once a student registers for MAST 600, he/she may not register for additional courses.

Thesis

By its nature, original research does not always achieve results within a specific period of time. Therefore, no specific time can be given for the successful completion of this degree. However, most MS students complete their degree in two years and must complete the degree requirements for the degree within six years of their admission to the MS program. Note that students are advised to complete the majority of their course work in the first year so that adequate time is allotted in the second year to complete their research and thesis. Specifically, students will be required to engage full-time in research for the equivalent of two academic semesters and maintain steady and satisfactory progress. Faculty advisors submit Graduate Student Progress Reports biannually to the Anatomical Sciences and Neurobiology graduate Program Committee for review.

Reading Committee

The composition requirements of, and specific deadlines related to, the Reading Committee appear in the Graduate Catalog. Briefly, the Reading Committee is composed of the student's advisor and two other faculty, one of which is from a different department. All three must be members of the graduate faculty. This committee should be established shortly after the student and her/his advisor agree on a specific research project. To avoid unnecessary delays the student should regularly consult with her/his thesis advisor and committee members concerning the direction and progress of the research project. Once in Master's candidacy, the student should meet with their committee at least once per semester.

Thesis Defense

The MS candidate will focus exclusively on completing their research projects and writing a thesis describing the results of their experiments. It is expected that the thesis should contain data sufficient for approximately one publishable manuscript. Upon completion of the thesis, the student will distribute a copy to each committee member. The committee will have two weeks to read the thesis and give approval to schedule a defense date or recommend changes that must be completed prior to scheduling a defense date. Once the thesis is approved by the committee, the student will schedule a thesis defense. The Graduate School requires that an announcement of the defense be posted at least two weeks prior to the scheduled date. The defense will consist of an oral presentation (approximately 30 minutes in length) of the research completed during the student's graduate training. Non-committee members in the audience will then ask questions. The general audience will then be dismissed and the student will defend his/her thesis before the committee. Completion of the MS degree will be determined by majority vote of the committee.

Anatomical Sciences and Neurobiology (PhD)

Doctor of Philosophy in Anatomical Science and Neurobiology

Unit: School of Medicine (<http://louisville.edu/medicine/>)(GM)
Department: Anatomical Science and Neurobiology (<http://louisville.edu/medicine/departments/anatomy/>)
Program Webpage (<http://louisville.edu/medicine/departments/anatomy/graduateprograms/>)
Academic Plan Code(s): ASNBPHD

Program Information

Our philosophy is to encourage academic excellence in the neurosciences within a framework of structure-function relationships at the molecular, cellular, and systemic levels. We strive to prepare students with sufficient background depth to excel in high tech cutting-edge translational (applied) research environments and the more traditional multi-disciplinary academic setting. We provide students with innovative approaches to important issues in neuroscience research including development, organization, and plasticity. Our research interests range from sensory and motor systems to therapeutic strategies for spinal cord injuries. In all approaches, we strive to integrate the latest teaching modalities while maintaining the time-honored advantages of hands-on, laboratory-based instruction.

The degree program is available to qualified individuals possessing a bachelor's degree from an accredited college or university. No specific undergraduate major is required, although some science background is required.

The PhD degree is offered to students who plan to pursue a career in research and/or teaching, in an academic institution or within the industry.

All degree programs require full-time study, and it is expected that while participating in these programs students will devote full-time effort toward completion of the degree requirements.

Students accepted into the PhD program will be considered for an IPIBS graduate student fellowship. The fellowship pays an annual stipend of \$28,000 in addition to payment of student tuition and health insurance.

Admission Requirements

All students wishing to apply must submit an application to the Graduate School, Graduate Admissions, with the following required documents:

- A formal application submitted to the Graduate School, Graduate Admissions (see website: louisville.edu/graduate/apply (<http://louisville.edu/graduate/apply/>) for forms and directions)
- Application fee
- A minimum of two letters of recommendation
- Official transcripts of all college work
- A brief statement of purpose describing your interests and career goals
- All international applicants whose native language is not English must submit Test of English as a Foreign Language (TOEFL/IELTS/ Duolingo) scores. Students holding a bachelor's or advanced degree from an accredited institution in the United States are exempt from this requirement

Optional Documents

- Official scores on the Graduate record Exam (GRE) General Test
- Official scores on the Medical College Admission Test (MCAT)

Review of applications begins December 15th and continues until all positions are filled. Admission into the program is competitive, and applicants are encouraged to submit their applications early. All materials must be received by January 15th. All applications received on time are automatically considered for a fellowship, which provides a stipend, covers tuition and health insurance.

Program candidates are only admitted in the fall semester. Graduate program orientation begins August 1st (although note that some fall semester classes begin as early as mid-July).

Program Requirements

All students must complete the Anatomical Sciences and Neurobiology (ASNB) required courses, and students funded via the Integrated Programs in Biomedical Sciences (IPIBS) must complete the IPIBS required courses (listed below). All students must also complete at least sixteen (16) credit hours of ASNB core courses (listed below). Additional elective coursework may be taken to enhance the student's individual program of study. Each student must complete a minimum of 30 total credit hours, of which fifteen (15) credit hours must be non-research courses in the major subject area.

At least one-half of the credits counted toward the degree must be 600-level courses or above (excluding research credit hours). Courses with course numbers, 500 to 599, open to both advanced undergraduate and graduate students, can be taken by graduate students for graduate credit (additional course requirements must be completed). Up to six (6) credit

hours of earned graduate credit hours can be transferred upon request from other accredited institutions, as long as the coursework was taken within three years prior to the student's admission to the program (see transfer credit information within the graduate catalog) and a grade of B or better was earned.

After completing the required master's-level coursework, students enroll in either MAST 600 Master's Degree Candidacy or DOCT 600 Doctoral Candidacy while completing additional program requirements.

Coursework

Code	Title	Hours
<i>Integrated Programs in Biomedical Sciences (IPIBS) Required Courses</i>		
BIOC 630	Responsible Conduct of Research: Survival Skills and Research Ethics	1
BIOC 667	Cell Biology (or equivalent)	3
<i>ASNB Required Courses</i>		<i>Credit Hours</i>
ASNB 602	Fundamentals of Neuroscience	4
ASNB 606	Anatomy Seminar	1
ASNB 618	Laboratory Rotation (must take at least two 3-credit lab rotations)	6
<i>ASNB Core Courses</i>		<i>Credit Hours</i>
ASNB 601	Gross Anatomy	6.5
ASNB 605	Human Embryology	3
ASNB 610	Neuroscience Methods	1-2
ASNB 617	Seminar on Developmental Neurobiology ¹	3
ASNB 614	Molecular Neuroscience ¹	4
ASNB 666	Synaptic Organization of the Central Nervous System ¹	3
ASNB 630	Origin of Mammalian Sensory Systems and Comparative Neurobiology	4
ASNB 671	General and Oral Histology	5
<i>Sample Electives ²</i>		
CHEM 547	Biochemistry II	3
MBIO 602	Immunology	3
PHZB 605	Systemic Physiology I	5
PHZB 606	Systemic Physiology II	5
NSCI 600	Translational Neurosciences	3
<i>Candidacy</i>		
MAST 600	Master's Degree Candidacy	0
DOCT 600	Doctoral Candidacy	0

¹ Offered on a rotational basis

² Additional courses (electives) within ASNB or graduate level courses in other departments may be taken. The student should consult with his/her advisor on the selection of the appropriate electives. A course in statistics is highly recommended.

Laboratory Rotations and Research Hours

Lab Rotations

Each student will complete two rotations in different laboratories prior to the start of their third semester. Exceptions or the addition of a third rotation require approval from the ASNB Graduate Committee. The objectives of rotations in two labs are to expose the student to different approaches and areas of research and to assist the student in choosing a laboratory for dissertation research. For each rotation, the student will register for the three (3) credit hour course Laboratory Rotation (ASNB 618) which is graded on a pass/fail basis. Once a student has completed a semester rotation in a given laboratory, an ASNB Rotation Report must be completed and submitted to the Graduate Program Director.

Research Hours

Once a mentor is chosen, research hours are taken as Original Investigation (ASNB 619), in which students earn a letter grade.

Advisory Committee

The purpose of the advisory committee is to act as the primary guiding and assessment body for the student in a course of study and training through which they will acquire the knowledge and skills required to earn the Doctor of Philosophy degree. The course of study and training will have components that are common for all students but may have others that are tailored to the particular needs and/or desires of individual students.

The committee must have a minimum of five members. The Mentor (Principal Advisor) serves as chair. The majority of committee members must have a primary, joint or associate appointment in ASNB. At least one member must have a primary appointment in a department outside ASNB (this outside committee member must not have a joint appointment in ASNB) and can include a Graduate Faculty from another University. The student, in conjunction with the Mentor, should form a committee prior to the start of the second year. Once the committee is formed, the student will meet with the committee at least once per year. A Graduate Student Progress Report, completed by the Mentor, must be filed semi-annually (at the end of the Fall and Spring semesters) with the ASNB Graduate Program Director. Registration for courses is contingent on this filing.

Qualifying Exam

The purpose of the qualifying exam is to assure that the student has sufficient knowledge and skills to begin a research project. The exam will be taken *within two terms* (Summer term included) after the successful completion of required coursework but no later than the Spring semester of Year Three.

Each member of the student's Advisory Committee will prepare one question designed to assess the student's ability to integrate course material, demonstrate critical thinking, and evaluate the literature related to the student's area of interest. The student's Mentor will submit all the questions (minimum of five) to the Graduate Program Director. The ASNB Graduate Committee will review the questions and select three for distribution to the student. The student will have two weeks to complete two of the three questions (of their own choosing) and submit the answers electronically (PDF format) to the Graduate Program Director. The exam is "open-book" and must be written in the student's own words. The answers represent the student's unaided efforts and should NOT be edited or critiqued in any form by anyone other than the student, including the mentor, the student's committee, or other trainees in the program. The answer to each question should be no less than 10 pages and no more than 20 pages in length, double-spaced, not including

references. The use of books and review articles is acceptable; however, a significant portion of the paper must be based on recent, primary sources in scientific journals.

The submitted answers will be evaluated by one member of the ASNB Graduate Committee plus one representative from the student's advisory committee, excluding the mentor. Each answer will be evaluated on a scale from 1 (poor) to 10 (outstanding) on mastery of basic background and conceptual material, familiarity with the literature in the field of study, and critical thinking about the cited works and scientific questions.

In order to pass the qualifying exam and continue in the PhD program, the student must:

- a. Receive a minimum total score of at least 12 out of 20, **and**
- b. Receive at least a score of 5 on each question.

A student who does not meet these passing requirements will have one chance for remediation. The remedial examination must be completed no later than six months after the student completed the original examination. Students that pass the qualifying exam with a score between 12 and 16 will be asked to revise their answers according to reviewer concerns. The exam will again be comprised of answering two questions in the same format; the third question that had been submitted to the student by the ASNB Graduate Committee that was not answered plus a new question. Failure after remediation will result in dismissal from the PhD program.

Upon successful completion of the exam, an evaluation form stating the outcome of the exam will be completed and signed by each committee member and will become a permanent part of the student's record. A passing grade indicates that the student has completed the requirements for an MS degree. At this point, the student becomes a doctoral candidate and must register for and maintain candidacy (DOCT 600) until the successful completion of his/her dissertation. This registration must be maintained year-round (Fall, Spring, and Summer). The statute of limitation for obtaining a PhD degree at the University of Louisville is four years after passing the qualifying exam. University-wide official maximums for Fellowships and Graduate Assistantships are typically six years.

Research Proposal

The Research Proposal should be defended in the semester following successful completion of the Qualifying Exam but not later than the Fall semester of Year Four. Prior to writing the Research Proposal, the student will develop an outline of the proposed experiments in coordination with their Mentor and then present this outline to their committee. It is at this point, prior to writing the Research Proposal that the committee should recommend any changes in the research plan; for example, the number of experiments, reducing the difficulty of experiments or introducing experiments that may be more appropriate for addressing the research question. Once the committee is satisfied with the proposed experiments, the student will write a Research Proposal in the format of the Research Strategy Section of a National Institutes of Health Predoctoral National Research Service Award (F31) application (or similar applications to other appropriate funding agencies such as the National Science Foundation).

Upon successful completion of the research proposal, the student will distribute a copy to each committee member, who will have two weeks to read the proposal. Students must consider this two-week reading period when preparing the document and scheduling the exam. The proposal defense will be chaired by the student's advisor, the exam will

begin with an oral presentation, open to the public, in which the student will present an overview (approximately 40 minutes) of the research plan. The presentation will be followed by an oral defense to assess the student's readiness to conduct the proposed research and their knowledge of background information relevant to the proposed research. Non-committee members in the audience will have an opportunity to ask questions first. The general audience will then be dismissed and the student will defend his/her proposal before the committee. Success or failure will be determined by majority vote of the committee. A student who fails to successfully defend their research proposal will have two months to remediate. Failure on the second attempt will result in dismissal from the program.

Upon successful completion of the proposal defense, a Proposal Defense Evaluation Form, stating the outcome of the exam, will be completed and signed by each committee member and will become a permanent part of the student's record.

All eligible students are encouraged to subsequently submit (in coordination with their advisor) full applications for funding to the appropriate agency.

* All eligible students are encouraged to submit (in coordination with their advisor) an application for a National Institutes of Health Predoctoral National Research Service Award (F31) or a National Science Foundation Predoctoral Award. Therefore, the Research Proposal may be submitted in the format of a relevant application with the exception that the background and significance section should be expanded to include a more extensive literature review than permitted by the NIH or NSF page limitations.

Annual presentation of research progress

PhD students who have completed their coursework (MS and PhD candidates) must present their research accomplishments annually. This presentation should be 20-50 minutes in length, and time and location of the presentation should be formally announced to the department faculty, staff, and students at least one week prior to the planned presentation. Presentations at journal clubs are encouraged, but cannot be used as a substitute for the annual presentation requirement.

Dissertation Defense

With the exception of their training in teaching, the PhD candidate who successfully defends their research proposal will focus exclusively on completing their research projects and writing a dissertation describing the results of their experiments. The candidate must complete all requirements for the degree of Doctor of Philosophy within four calendar years after passing the qualifying examination. It is expected that the dissertation should contain data sufficient for approximately three publishable manuscripts. Upon completion of a near final draft of their dissertation and prior to scheduling of their defense, the student must distribute a copy to each Dissertation Committee member. The committee will have two weeks to read a preliminary draft of the dissertation and give the approval to schedule a defense date or recommend major changes that need to be completed prior to scheduling a defense date.

Once the dissertation is approved to move forward by the committee, the student will schedule a Dissertation Defense and distribute an edited copy to each committee member. The Graduate School requires that an announcement of the defense be made at least two weeks prior to the scheduled date. The defense will consist of a public oral presentation (approximately 45 minutes in length) of the research completed during

the student's graduate training. Non-committee members in the audience will be allowed to ask questions. The general audience will then be dismissed and the student will defend his/her dissertation before the committee. Upon completion, a written report stating the outcome of the defense will be completed by each committee member and will become a permanent part of the student's record.

Approval by the majority of Dissertation Committee members will signify successful completion of the PhD degree.

Anthropology (MA)

Master of Arts in Anthropology

Unit: College of Arts and Sciences (<http://louisville.edu/artsandsciences/>) (GA)

Department: Anthropology (<http://louisville.edu/anthropology/>)

Program Website (<http://louisville.edu/anthropology/graduate/>)

Academic Plan Code(s): ANTHMA, ANTHMA_ACC

Program Information

The Master of Arts (MA) in Anthropology is designed to enhance student knowledge of and skills in dealing with contemporary social issues facing globalizing communities world-over and to enable students to locate these in the long progression of human history and within the body of social science theory. We expect our graduates to enter professions as skilled administrators, researchers, practitioners, advocates, and leaders. Although students may focus on biological anthropology, archaeology, or cultural anthropology, this is a general, comprehensive masters program.

Anthropology is among the most transdisciplinary of fields, and we see our students taking courses from and pursuing collaborations with colleagues in Humanities, Sociology, History, Women and Gender Studies, Pan-African Studies, Political Science, Art History, Biology, and the Kent School of Social Work. Students with little or no academic background in anthropology will be required to take some preparatory courses determined in consultation with the Anthropology Director of Graduate Studies.

Degree Summary

Code	Title	Hours
	Seminars	9
	Electives	15
	Thesis/Internship	6
Minimum Total Hours		30

Accelerated BA/MA in Anthropology

Undergraduate Anthropology majors who are already thinking about pursuing a master's degree in Anthropology can speed up the process by applying some of their undergraduate credit hours toward a Master of Arts degree. Students take three graduate-level courses/nine (9) credit hours (either 500-level with the additional graduate-level assignments or 600-level) while still an undergraduate and then have those credits apply both toward the undergraduate degree and an eventual master's degree from the University of Louisville. Students may pursue either the thesis or experiential (non-thesis) option within the MA Program.

Interested students should:

- Have a minimum overall Anthropology GPA of 3.3 and meet all other requirements for admission to the Master of Arts in Anthropology program (including at least eighteen (18) credit hours of Anthropology with at least nine (9) hours at the 300 level or higher).
- Complete the Anthropology Department's internal application for permission to participate in the accelerated BA/MA program and the Graduate School's application for admission to the Master of Arts program. Students must apply by no later than the end of their junior year.

Students must retain a 3.0 GPA in Anthropology during their senior year to remain in the program.

Admission Requirements

Applicants must complete/submit:

- Online graduate application (<http://graduate.louisville.edu/apply/>) for admission.
- A statement of interests covering relevant experience and aspirations. This letter is absolutely critical to your successful application, as it helps us assess where you might find common interests among Department faculty.
- Official transcripts. As stipulated by the Graduate School, the minimum GPA for acceptance into the program is 3.0.
- Three letters of recommendation addressing the candidate's readiness for graduate studies, academic abilities, and potential for success. One letter may be from an employer.
- Applicants may choose to submit a writing sample.

The Graduate Committee uses a holistic approach when evaluating graduate applications.

Program Requirements

The **Master of Arts (MA) in Anthropology** requires 30 credit hours at the graduate level. It comprises 24 credit hours of course work, plus six (6) credit hours of thesis or internship. All students enrolled in the MA program are required to complete one of the following options:

In addition to the nine (9) credit hours of the 600-level core seminars, students take another 15 credit hours of course work (electives) at the 500 or 600 level, and six (6) credit hours of thesis or internship/practicum hours.

Students may enroll in up to nine (9) credit hours in another department. Students may enroll in 500-level graduate courses in another department with the permission of the Anthropology Director of Graduate Studies.

Masters students who are not in the accelerate BA/MA program may apply up to six (6) credit hours taken at the 500- or 600-level as an undergraduate, may be applied toward the MA in Anthropology on the condition that the student earned a grade of B (not B-minus) or higher in the course and the course was taught at the graduate level. Approval from the Director of Graduate Studies is required. Master's-degree students outside of the accelerated master's-degree program may not use coursework earned as undergraduate and used to meet the requirements for the undergraduate degree for graduate credit.

Thesis Option

Code	Title	Hours
	Core Seminars	9
	Electives	15

Thesis	6
Minimum Total Hours	30

Thesis Option Coursework

Code	Title	Hours
Core Seminars		6

ANTH 608	Social and Cultural Theory	
ANTH 612	Seminar: Contemporary Issues in Anthropology	

Students must select one of the following courses: 3

ANTH 609	Research Design: Archaeology	
ANTH 610	Research Design: Biological Anthropology	
ANTH 611	Research Design: Socio-Cultural Anthropology	

Code	Title	Hours
Electives		15

ANTH 507	Space, Place and Culture	
ANTH 517	Anthropology of China	
ANTH 522	Ecology, Politics and Culture	
ANTH 526	Archaeology as Practice	
ANTH 528	Animals and Humans	
ANTH 529	Zooarchaeology	
ANTH 530	Human Impacts on Past Environments	
ANTH 531	Anthropology of Water	
ANTH 534	Food and Farm Movements in the Americas	
ANTH 535	Nutritional Anthropology	
ANTH 540	Health and Civilization	
ANTH 549	Modes of Consciousness	
ANTH 562	Special Topics in Cultural Anthropology	
ANTH 563	Special Topics in Biological Anthropology	
ANTH 564	Special Topics in Archaeology	
ANTH 578	Lithic Technology	
ANTH 579	Ceramic Analysis	
ANTH 607	Emergence of Human Culture	
ANTH 622	Anthropology of Violence	
ANTH 624	Black Cultural Traditions	
ANTH 625	Globalization, Transnationalism, and Anthropology	
ANTH 626	Food Justice	
ANTH 627	Political Economy and Culture	
ANTH 640	Linguistic Anthropology	
ANTH 650	Health and Disease: A Bio-Cultural Approach	
ANTH 651	Seminar in Biological Anthropology	
ANTH 653	Human Molecular Evolutionary Genetics	
ANTH 661	Special Topics in Anthropology	
ANTH 662	Special Topics in Cultural Anthropology	
ANTH 663	Special Topics in Biological Anthropology	
ANTH 670	Independent Study (Reading)	
ANTH 664	Special Topics in Archaeology	
ANTH 671	Independent Study (Research)	

Or approved 500- and 600-level elective in another social science discipline

ANTH 672	Thesis	6
Minimum Total Hours		30

Experiential Option

Code	Title	Hours
Core Seminars		9
Electives		15
Internship		6

Minimum Total Hours	30
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Experiential Option Coursework

Code	Title	Hours
Core Seminars		

ANTH 608	Social and Cultural Theory	
ANTH 612	Seminar: Contemporary Issues in Anthropology	

Students must select one of the following courses: 3

ANTH 609	Research Design: Archaeology	
ANTH 610	Research Design: Biological Anthropology	
ANTH 611	Research Design: Socio-Cultural Anthropology	

Code	Title	Hours
Electives		15

ANTH 507	Space, Place and Culture	
ANTH 517	Anthropology of China	
ANTH 522	Ecology, Politics and Culture	
ANTH 526	Archaeology as Practice	
ANTH 528	Animals and Humans	
ANTH 529	Zooarchaeology	
ANTH 530	Human Impacts on Past Environments	
ANTH 531	Anthropology of Water	
ANTH 534	Food and Farm Movements in the Americas	
ANTH 535	Nutritional Anthropology	
ANTH 540	Health and Civilization	
ANTH 549	Modes of Consciousness	
ANTH 562	Special Topics in Cultural Anthropology	
ANTH 563	Special Topics in Biological Anthropology	
ANTH 564	Special Topics in Archaeology	
ANTH 578	Lithic Technology	
ANTH 579	Ceramic Analysis	
ANTH 607	Emergence of Human Culture	
ANTH 622	Anthropology of Violence	
ANTH 624	Black Cultural Traditions	
ANTH 625	Globalization, Transnationalism, and Anthropology	
ANTH 626	Food Justice	
ANTH 627	Political Economy and Culture	
ANTH 640	Linguistic Anthropology	
ANTH 650	Health and Disease: A Bio-Cultural Approach	
ANTH 651	Seminar in Biological Anthropology	
ANTH 653	Human Molecular Evolutionary Genetics	
ANTH 661	Special Topics in Anthropology	
ANTH 662	Special Topics in Cultural Anthropology	
ANTH 663	Special Topics in Biological Anthropology	
ANTH 664	Special Topics in Archaeology	

ANTH 670	Independent Study (Reading)
ANTH 671	Independent Study (Research)
ANTH 673	Internship
Or approved 500- and 600-level elective in another social science discipline	
Minimum Total Hours	30

Applied Philosophy (MA)

Master of Arts in Applied Philosophy

Unit: College of Arts and Sciences (<http://louisville.edu/artsandsciences/intro/>) (GA)

Department: Philosophy (<https://louisville.edu/philosophy/>)

Academic Plan Code(s): APHIMA

Program Information

The Master of Arts (MA) in Applied Philosophy with Concentration in Health Care Ethics is designed for diverse graduate, pre-professional, and professional students to develop their skills as highly engaged citizens, leaders, and scholars. Building on six core bioethics courses, the MA in Applied Philosophy offers students a significant degree of flexibility through electives in other departments and schools to deepen their personal areas of interest and broaden their expertise beyond their core knowledge base. The degree prepares graduates to bring a more educated, nuanced and thoughtful approach to their work in clinical or hospital settings, health law or policy development or academic research and teaching as well as many other overlapping possibilities.

Graduates of the program will possess a mastery of 1) ethical theory, 2) the application of theory to practice, and 3) the clinical case studies that guide research, policy, and legal deliberation in respect to our medical and health care practices. Graduates will be trained for positions in ethical leadership and will be "reflexively ethical" in order to establish standards that ramify throughout the organizations into which they are hired.

Degree Summary

Code	Title	Hours
Core Courses		15
Electives		15
Internship		3
Minimum Total Hours		33

Admission Requirements

All applicants must submit to the Graduate Admissions Office:

- A graduate application (<https://louisville.edu/graduate/futurestudents/apply-materials/application/>) with application fee
- TOEFL, IELTS or Duolingo scores, if an international student
- Two recent letters of recommendation from those familiar with the applicant's academic work or life long learning and speak to your ability to complete graduate level education. Discursive letters preferred.
- Curriculum vitae or resume
- Personal statement, which should address why you have decided to pursue a MA in Applied Philosophy. The personal statement should be between 2-4 double spaced pages (500-1000 words).

Degree Requirements

Code	Title	Hours
Core Courses		
BETH 680	Foundations of Bioethics	3
BETH 681	Current Controversies in Health Care Ethics	3
BETH 682	Health and Social Justice	3
BETH 683	Race, Medicine, and Health	3
BETH 684	Clinical Ethics	3
Choose one course from the following based upon concentration:		3
PHPB 630	Social and Structural Determinants of Health	
BETH 636	Philosophy of Science	
	or LAW 980 Medicine, Bioethics and the Law	
Guided electives (choose 12 hours from the courses below):		12
ANTH 608	Social and Cultural Theory	
BETH 601	Independent Study in Bioethics	
BETH 685	Health Care Ethics Internship	
ECPY 663	Multicultural and Diversity Issues	
HIST 589/ WGST 532	History of American Sexualities - WR (http://catalog.louisville.edu/undergraduate/general-education-requirements/)	
LAW 826	Family Law	
LAW 906	Race and the Law	
LAW 923	Elder Law	
LAW 924	Sexuality and the Law	
LAW 944	Poverty, Health and the Law	
LAW 946	Introductions to Health Law	
LAW 947	Mental Health and the Law	
LAW 959	Genetics and the Law	
LAW 977	Animal Law	
LAW 978	Disability Law	
LAW 980	Medicine, Bioethics and the Law	
PAS 615	Theories of Race and Racism	
PHIL/PAS 616	African-American Philosophy	
PHIL 619	Topics in Philosophy of Race and Racism	
PHIL 690	Philosophical Foundations of Diversity, Equity, and Inclusion	
PHPB 612/ COMM 652	Health Communication: Theory and Practice	
PHPB 630	Social and Structural Determinants of Health	
PHPB 635	Health Promotion Policy Development	
POLS 668/ WGST 656	Feminist Theory	
PSYC 656	Professional and Ethical Issues in Clinical Psychology	
SOC 685	Race and Ethnicity	
SOC 740	Social Policy	
SOC 675	Social Inequality & Stratification	
MSSW 603	Diversity, Oppression, and Social Justice Practice	
Culminating Graduate Experience		
BETH 685	Health Care Ethics Internship	3
Minimum Total Hours		33

Art (Creative) and Art History (MA)



Master of Arts in Art (Creative) and Art History

Unit: College of Arts and Sciences (<http://louisville.edu/artsandsciences/intro/>) (GA)

Department: Art and Design (<https://louisville.edu/art/>)

Program Webpage (<https://louisville.edu/art/graduate/>)

Academic Plan Code(s): See Concentration Requirements tab.

Program Information

The Department of Art and Design, endowed as the Hite Institute of Art and Design, offers a Master of Arts in Art degree with concentrations in Art History and Critical & Curatorial Studies. The program consists of 31 credit hours of graduate study divided between work in the Core Curriculum and work in either the Art History or the Critical & Curatorial Studies concentration.

The Master of Arts (MA) in Art concentration in Art History provides advanced expertise in the history of art. This course of study prepares students with the course work, language skills, and research experience needed for further graduate study or work in a museum or educational setting. Students in this concentration may select in-depth courses in Renaissance and Baroque Art in Italy, Spain, and Northern Europe; Mexican Art; 19th and 20th Century Architecture; American Art; Film; Modern, Contemporary western, and Contemporary Art and Theory; and Asian and Non-western Art and Architecture.

The Master of Arts (MA) in Art concentration in Critical & Curatorial Studies combines critical theory, contemporary art and exhibition history, and practical exhibition experience to prepare students for work in the expanding fields of contemporary exhibition development and art writing.

Students in the MA program benefit from the Hite Institute of Art and Design's substantial resources, which include multiple galleries on campus and in downtown Louisville, partnerships with local art museums and galleries, as well as an active speaker and colloquia schedule featuring internationally prominent curators, gallery directors, and artists.

Degree Summary

Code	Title	Hours
	Program Core and Electives	16
	Concentration Coursework	15
Minimum Total Hours		31

Accelerated BA/MA in Art History

Students enrolled in the BA in Art track in Art History who are considering pursuing a master's degree (MA) in Art History can speed up the process by applying some of their undergraduate credit hours toward a master's degree. Students accepted into the Accelerated BA/MA program take three 500-level graduate courses [nine (9) credit hours] as an undergraduate that apply toward both the bachelor's degree and the eventual master's degree.

Interested students must apply to the program no later than the end of their junior year to be eligible to enroll in graduate coursework in their final year of the program. Students must have at least a 3.0 university grade point average when they apply and must maintain a 3.0 once accepted. Once admitted to the accelerated BA/MA program, students are expected to maintain a full graduate load of nine (9) credit hours.

Once accepted into the program, students complete nine (9) credit hours of 500-level graduate coursework during their final year of undergraduate studies. They then graduate with a bachelor's degree and move straight into the University of Louisville Master of Arts program. Students in the accelerated program must meet all of the requirements for the Master of Arts, including completing at least 12 credit hours of their 31 credit hour program in 600-level courses.

Admission Requirements

To be considered for admission to the MA program, students must submit the following credentials to the Graduate School: (<http://louisville.edu/graduate/apply/>)

- A formal Application for Graduate Admission, including a nonrefundable application processing fee,
- Official transcripts of all colleges attended (undergraduate or graduate),
- Two letters of recommendation specific to the program,
- Graduate Record Examination (GRE) scores,
- A statement of about 500 typed words detailing the applicant's educational and professional goals,
- A writing sample (normally an advanced-level Art History paper).

Program Requirements

Code	Title	Hours
Core Coursework		16
ARTH 600	Graduate Seminar (or CCS 600 - first semester)	
ARTH 642	Theories & Methods in the Visual Arts (to be taken in first semester)	
Art History Elective (500 or 600 level)		
Elective - Outside the Department of Art & Design (500 or 600 level) (with approval of advisor)		
Elective - Outside the concentration (500 or 600 level) ¹		
ARTH 645	Thesis Guidance (or CCS 645)	
Concentration		15
<i>Students complete one of the following (see Concentration Requirements tab for specific coursework):</i>		
Concentration in Art History		
Concentration in Critical & Curatorial Studies		
Minimum Total Hours		31

¹ 'Outside the concentration' means outside the area of focus, e.g.: students in the Art History concentration must take a course in

Studio Art or Curatorial Studies; students in the Curatorial Studies concentration must take a course in Studio Art or Art History.

Concentration Requirements

All students must complete one of the following fifteen (15) credit hour concentrations in addition to the sixteen (16) credit hour program core (see Degree Requirements tab).

Concentration in Art History

Academic Plan Code(s): ARTCMA_HIS

Upon admission to the program, students in the Art History concentration are expected to demonstrate competence in the history of art, equivalent to an undergraduate major.

Reading knowledge of one foreign language is required for the completion of the Art History concentration. This requirement should be met during the first year in the program, but must be met before enrolling for Thesis Guidance (ARTH 645/ARTH 646). Proficiency can be demonstrated in one of two ways:

- a. Taking an examination administered by the department, scheduled in the fall and spring semesters; or
- b. Completing the intermediate level of the language at the University of Louisville with a grade of B or better.

Code	Title	Hours
ARTH Pre 1750 - 3 credit hours, select one course from the following: 3		
ARTH 542	Special Topics	
ARTH 651	Topics in Ancient Art	
ARTH 552	Ancient Painting	
ARTH 553	Ancient Cities	
ARTH 561/661	Studies in Medieval Art	
ARTH 571/671	Studies in Renaissance Art	
ARTH 581/681	Studies in Baroque Art	
ARTH After 1750 - 3 credit hours, select one course from the following: 3		
ARTH 521	Studies in Modern Art	
ARTH 525/625	Representations of Trauma in the Visual Arts	
ARTH 526/626	Studies in Contemporary Art	
ARTH 542	Special Topics	
ARTH 593/693	Studies in Modern Architecture	
ARTH 595	Studies in American Art	
& ARTH 695	Topics in American Art	
ARTH 597	Studies in Photographic History	
ARTH 621	Topics in Modern Art	
ARTH 623	History of Performance Art	
ARTH 699	Topics in Urban History	
ARTH NonWestern - 3 credit hours, select one course from the following: 3		
ARTH 531/631	Studies in Asian Art	
ARTH 542	Special Topics	
ARTH 544	Pan-African Art: Form and Content	
ARTH 549	Contemporary Trends in African-American Art	
ARTH Elective		3
ARTH Elective		3

ARTH 643/644 Independent Study (one optional independent optional study course is permitted)

Language (fulfillment of the language requirement is required during the first year in the program)

Thesis

Minimum Total Hours

15

A minimum of twelve (12) credit hours in the concentration, exclusive of Thesis Guidance, must be at the 600-level, of which at least nine (9) credit hours must be in Art History.

The concentration in Art History will conclude with a written thesis.

The thesis consists of a research paper demonstrating critical knowledge of relevant sources, skill in analysis and interpretation, and the ability to present the results in a well-organized and intelligent manner. The thesis must be defended in an oral examination.

Concentration in Critical & Curatorial Studies

Academic Plan Code(s): ARTMA_CCS

Upon admission to the program, students in the Critical & Curatorial Studies concentration are expected to demonstrate competence in the history of art, studio art, or arts management equivalent to an undergraduate major and an interest in museum theory and work.

Code	Title	Hours
CCS 647	Introduction to Critical and Curatorial Studies I	3
CCS 648	Critical and Curatorial Studies II	3
CCS 649	Curatorial Internship	3
ARTH (500 or 600 level)		3
Select one of the following 600-level Public Administration courses: 3		
PADM 600	Foundations of Public Administration	
PADM 603	Program Evaluation	
PADM 609	Nonprofit Management	
PADM 612	Grantsmanship and Fundraising	
Written Thesis with Exhibition or Curatorial Project		

Minimum Total Hours

15

A minimum of twelve (12) credit hours in the concentration, exclusive of Thesis Guidance, must be at the 600-level

The concentration in Critical & Curatorial Studies will conclude with a thesis exhibition or curatorial project. The exhibition or curatorial project may be produced in cooperation with the university's galleries, the Speed Art Museum, or other appropriate institutions authorized by the department. It should be a culminating experience occurring in the final year of study.

To fulfill this requirement, the candidate must submit a prefatory project proposal with the approval of their graduate advisor, produce or implement the thesis practicum proposed, and appropriately document the exhibit or project. This documentation will include exhibition or project materials such as press releases, announcements, wall texts, brochures and/or catalogs, and digital and/or photographic documentation of the exhibition or project as well as other corollary documentary materials. The thesis project will also include a written portion, in addition to the practicum and documentation, that will provide a narrative basis in critical theory and current professional curatorial

practice detailing the planning, implementation, and documentation of the project. The written thesis will be submitted in conformity with the regulations governing the form and presentation of the written master's thesis.

Artificial Intelligence in Medicine (CERT)

This program was approved for students entering the university in the Summer 2023–Spring 2024 catalog year. For more information about catalog year, go to Catalog Year Information (<http://catalog.louisville.edu/undergraduate/university-wide-unit-specific-policies/catalog-year/>).

Graduate Certificate in Artificial Intelligence in Medicine

Unit: Speed School of Engineering (<http://engineering.louisville.edu>) (GS)

Department: Bioengineering (<https://engineering.louisville.edu/academics/departments/bioengineering/>)

Academic Plan Code(s): AIM_CGR, AIM_CGRO

Program Information

This program can be completed in a traditional classroom format or entirely online (<https://louisville.edu/online/programs/certificate-programs/certificate-in-artificial-intelligence-in-medicine/>).

The graduate certificate in Artificial Intelligence in Medicine offers students training in the application of computational methods and machine learning techniques to the analysis of medical problems. The focus of the program is an emphasis on the mastery of skills required to analyze medical data related to patients, which include big data, medical imaging, physiological and disease progression modeling, experimental (clinical and laboratory), and healthcare information. This program will benefit healthcare through the use of modern computational techniques to manage and investigate the ever-increasing volume of patient data and the wide variety of diseases. Students will acquire skills and knowledge in computation, modeling and simulation, machine learning, medical data management, and advanced statistical analysis, with an emphasis on interdisciplinary collaboration.

The courses available for this program may include assignments and projects in collaboration with researchers at the School of Medicine. In particular, Bioengineering faculty have established collaborations with the Cardiovascular Innovation Institute, the Kentucky Spinal Cord Injury Research Center, the Brown Cancer Center, the Center for Predictive Medicine, and the Departments of Oncology and Radiology.

Certificate Summary

Code	Title	Hours
	Bioengineering Coursework	9
	Approved Electives	6
Minimum Total Hours		15

The admission standards for the Graduate Certificate program in Artificial Intelligence in Medicine are as follows:

- a. All admission applications for the Graduate Certificate program shall include:
 - i. A completed graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) for the Graduate School

- ii. Application fee
- iii. Official transcript certifying at least a bachelor's degree. All transcripts not in English must be certified as authentic and translated verbatim into English.
- b. The minimum requirement for admission is the baccalaureate degree or its equivalent from an accredited institution, or current enrollment in a graduate Speed School program, and completion of BE 340 (Computational Methodologies in Bioengineering) or its equivalent.
- c. The successful applicant will typically have an undergraduate grade point average of 3.0 or above (on a 4.00 scale) in their engineering courses.
- d. The minimum math pre-requisite course required is ENGR 205 (Differential Equations for Engineering) or its equivalent.
- e. International students whose primary language is not English must show English language proficiency. Applicants must either submit an official TOEFL, IELTS or Duolingo score, or demonstrate a degree award from an acceptable English language institution. The successful applicant will typically have a total TOEFL score of 80 or higher, an overall IELTS score of 6.5 or higher or Duolingo score of 105.

Students can enroll in a Graduate Certificate program either as a non-degree seeking student or as a student simultaneously enrolled in a graduate degree program and this graduate certificate program. Students who wish to earn a graduate degree must meet all admission criteria for the degree program.

All students enrolled in a graduate certificate program are expected to make steady and satisfactory progress toward the completion of the certificate. Students who are not enrolled for a period of more than 12 months will be considered to have withdrawn from the certificate program. Students who seek to return after such a period of time must contact the graduate program director.

The following certificate requirements are mandatory of all Graduate Certificate candidates:

- a. The Certificate Program of Study must be completed with a 3.0 GPA or better for all graduate courses used to satisfy certificate requirements.
- b. Graduate certificate students must take all certificate course work at the University of Louisville. No transfer credits will be accepted towards a graduate certificate.

The Bioengineering Department has established the following grade policy for the Artificial Intelligence in Medicine Graduate Certificate program:

- a. A student cannot receive a C+ or lower grade in courses counting towards the certificate.

Additionally, all program requirements for this certificate must be completed within three years from admission into the program.

Program Requirements

Code	Title	Hours
Choose 15 credit hours from the list below (9 credit hours must be from BE courses):		15
BE 524	LabVIEW for Bioengineers	
BE 530	Machine Learning in Python	
BE 540	Machine Learning in Medicine	

BE 542	Medical Image Computing
BE 543	Computer Tools for Medical Image Analysis
BE 544	Artificial Intelligence Techniques in Digital Pathology
BE 640	Computational Methods for Medical Image Analysis
BE 645	Artificial Intelligence and Radiomics
BE 685	Modeling of Biological Phenomena
CSE 532	Python and Data Analytics
CSE 545	Artificial Intelligence
CSE 546	Introduction to Machine Learning
CSE 547	Deep Learning Algorithms and Methods
CSE 590	Special Topics in Computer Science and Engineering (Big Data Analytics Tools & Tech)
CSE 632	Data Mining
<i>NOTE: Only one of either CSE 632 or PHMS 641 can count towards certificate</i>	
CSE 641	Medical Imaging Systems
CSE 660	Introduction to Bioinformatics
CSE 694	Special Topics in Computer Science and Engineering ¹
PHST 620	Introduction to Statistical Computing
PHST 655	Basic Statistical Methods for Bioinformatics
PHST 681	Biostatistical Methods II
PHST 710	Advanced Statistical Computing I
PHMS 641	Data Mining I
PHMS 642	Data Mining II

Minimum Total Hours **15**

- ¹ CSE 694 Special Topics options:
- a. Current topics in Bioinformatics
 - b. Topics in Advanced Machine Learning Theory & Methods

Asian Studies (CERT)

Graduate Certificate in Asian Studies (ASSTCAS)

Unit: College of Arts and Sciences (<http://louisville.edu/artsandsciences/>) (GA)

Program Website (<http://louisville.edu/asianstudies/>)

Academic Plan Code(s): ASSTCAS

Program Information

The Graduate Certificate in Asian Studies is a graduate-level interdisciplinary program housed in the College of Arts and Sciences. It allows students to learn more about the peoples of China, India, and Japan from the perspectives of art history, geography, history, religious studies, political science, sociology, and theatre arts. The 15 credit hour program may be completed as a stand-alone program, or in conjunction with other graduate programs—for example, the MA in History or Political Science, or the PhD in Art History or Humanities.

Students take 15 credit hours in graduate courses with an Asian emphasis. At least three of the five required courses must be at the 600 level, and the five courses must be drawn from at least three of the following disciplines: Anthropology, Art History, Classical and Modern Languages, Geography, History, Humanities, Political Science, Sociology,

Theatre Arts, or Women's, Gender and Sexuality Studies. A minimum of three (3) credit hours must be in the Division of Humanities (exclusive of language courses), and at least three (3) credit hours must be in the Division of Social Sciences.

To complete the Graduate Certificate, students also must demonstrate reading knowledge in one of the following: Chinese, Japanese, or another language designated as an Asian language by the Program Director.

With the approval of the Program Director, an internship in a community or local business may be substituted for three (3) credit hours of classwork. To be eligible for this substitution, the internship must involve work that is primarily connected with Asia or Asian-Americans in some way.

Admission Requirements

Interested students must have earned a baccalaureate or other undergraduate degree from an accredited college or university, and meet the criteria for admission to the Graduate School at the University of Louisville and submit a graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>).

Individuals wishing to pursue the graduate certificate in conjunction with a graduate degree program in another University of Louisville department should be admitted to that degree program before applying for admission to the Graduate Certificate Program in Asian Studies.

Program Requirements

Code	Title	Hours
Select five of the following (at least three must be at the 600 level)		15
ARTH/AST 531	Studies in Asian Art ¹	
ARTH 631	Topics in Asian Art ¹	
AST 500	Topics in Asian Studies-Humanities ¹	
AST 501	Topics in Asian Studies-Social Sciences ¹	
AST/POLS 641	Clash of Civilizations in the 21st Century	
HIST/WGST 584	Women in East Asian History	
AST 598	Nationalism and Modernity in East Asia	

Minimum Total Hours **15**

¹ May be repeated when topics vary.

Audiology (AuD)

Doctor of Audiology

Unit: School of Medicine (<http://louisville.edu/medicine/>) (GM)

Department: Audiology (<http://louisville.edu/medicine/degrees/audiology/>)

Program Website (<https://louisville.edu/medschool/audiology/>)

Academic Plan Code(s): AUDIDAU

Program Information

The Doctor of Audiology degree is a four-year, post-baccalaureate degree program leading to a professional degree conferred by the Graduate School. The program is physically located within the Louisville Medical Center and administratively located in the Department of Otolaryngology-Head and Neck Surgery and Communicative Disorders in the University of Louisville School of Medicine. The faculty are committed to the clinical

focus of the Doctor of Audiology degree and endeavor to bring real-world experiences to bear on the teaching environment. The faculty actively participate in the provision of clinical services in both hospital and private practice arenas.

Students benefit by working side by side with the Audiology faculty and staff in an active and dynamic medical environment. Students will interact with faculty, residents and students from other disciplines such as Otolaryngology, speech pathology, and pediatrics, not only in the provision of clinical services but also in teaching and research endeavors.

Admission Requirements

Admission to the program will be for Fall term only, and applications must be received by January 1 of the application year.

Students must apply through the Graduate School (<https://louisville.edu/graduate/futurestudents/apply-materials/application/>).

Applicants should submit:

- All undergraduate transcripts
- GRE scores
- Three letters of recommendation
- A structured personal statement:
 - Please respond to all three questions in up to two pages(total)
 - Part 1: Describe and explain the experience(s) you have had that have convinced you that audiology is the career for you. (This may include: coursework, shadowing, job experience, personal experience.)
 - Part 2: What relevant life experiences (e.g., leadership roles, service to the community, personal accomplishments, etc.) and personal qualities do you have that will help you to succeed in graduate school?
 - Part 3: Describe how you have solved a problem and how the skills and techniques that you employed might help you in graduate school and as a clinical audiologist. (The problem could be one related to your undergraduate experience, to a job that you have held, or a personal challenge that you have faced.)

Applicants must have a minimum GPA of 3.0; Admission to the program is based on a favorable review of application materials and an interview with the admissions committee. During their interview, applicants will be asked to demonstrate a knowledge of the field.

Please see the Doctor of Audiology Program website (<http://louisville.edu/medicine/degrees/audiology/>) for more information.

Program Requirements

The Doctor of Audiology degree program has been designed to meet the content and experience guidelines developed over the past decade by numerous professional organizations and associations.

The curriculum begins with the student spending a significant amount of time in the classroom with a minimum amount of time in the clinical environment. Over the course of the four years, the ratio of classroom to clinic time reverses. During the fourth year, students will be given options for practical experiences, an externship, in a variety of sites around the country.

Typical 4-Year Curriculum

(subject to change)

Year 1		Hours
Fall		
AUDI 600	Anatomy and Physiology of Hearing	3
AUDI 604	Essential Techniques in Audiometry for Pediatrics and Adults	3
AUDI 606	Acoustics and Speech Acoustics	3
AUDI 614	Clinical Techniques in Audiology I	1
AUDI 610	Clinical Clerkship I	1
Hours		11
Spring		
AUDI 626	Assessment and Management of Vestibular Disorders	3
AUDI 624	Amplification Technology	3
AUDI 622	Electrophysiologic Techniques in Audiology	3
AUDI 615	Clinical Techniques in Audiology II	2
AUDI 610	Clinical Clerkship I	1
Hours		12
Summer		
AUDI 630	Amplification Selection and Fitting	3
AUDI 610	Clinical Clerkship I	1
AUDI 629	Cochlear Implants and other Implantable Hearing Devices	4
AUDI 636	Pediatric Audiology	3
Hours		11
Year 2		
Fall		
AUDI 620	Clinical Clerkship II	2
AUDI 621	Audiologic Rehabilitation	4
AUDI 648	Hearing Science I	3
AUDI 650	Research Methods	3
Hours		12
Spring		
AUDI 620	Clinical Clerkship II	2
AUDI 646	Advanced Topics in Medical Audiology	4
AUDI 660	Investigation in Audiologic Practice	1
AUDI 627	Tinnitus	3
Hours		10
Summer		
AUDI 632	Professional Issues in Audiology	2
AUDI 635	Audiology Internship	4
AUDI 652	Prevention of Hearing Loss	2
AUDI 660	Investigation in Audiologic Practice	1
Hours		9
Year 3		
Fall		
AUDI 635	Audiology Internship	4
AUDI 660	Investigation in Audiologic Practice	1
AUDI 656	Practice Management in Audiology	4
AUDI 680	Special Topics in Audiology	2
Hours		11
Spring		
AUDI 612	Pathology of the Auditory-Vestibular System	3
AUDI 635	Audiology Internship	4
AUDI 638	Educational Audiology	3
AUDI 660	Investigation in Audiologic Practice	1
Hours		11
Summer		
DOCT 600	Doctoral Candidacy ¹	0
Hours		0

Year 4		
Fall		
DOCT 600	Doctoral Candidacy ¹	0
Hours		0
Spring		
DOCT 600	Doctoral Candidacy ¹	0
Hours		0
Minimum Total Hours		87

¹ Full-time status

The Doctor of Audiology program prepares students to meet the requirements for certification and/or licensure. If you plan to pursue professional licensure or certification you should first determine your state's criteria for examination and licensure to see how/if our program meets those requirements prior to enrollment. We recommend that you also contact your state's licensing board directly to verify that the requirements have not changed recently and to answer any questions especially those regarding additional requirements beyond the degree.

More information about certification or licensure is available at the following website: <https://louisville.edu/oapa/licensure-information> (<https://louisville.edu/oapa/licensure-information/>) (you may search by school or by the name of the program then click on 'View Details' to display the information).

Autism and Applied Behavior Analysis (CERT)

Graduate Certificate in Autism and Applied Behavior Analysis

Unit: College of Education and Human Development (<http://louisville.edu/education/>) (GE)

Department: Special Education, Early Childhood, and Prevention Science (<http://louisville.edu/education/departments/sped/>)

Program Webpage (<http://louisville.edu/education/degrees/bcba-certificate/>)

Academic Plan Code(s): AABACAA, AABACAAO

Program Information

This program can be completed in a traditional classroom format or entirely online (<https://louisville.edu/online/>).

The University of Louisville's Graduate Certificate in Autism and Applied Behavior Analysis provides practitioners with advanced knowledge in autism research and behavioral analytic approaches to skill development and the treatment of challenging behavior.

Students receive rigorous academic work within the program's carefully designed course sequence that is taught by faculty with practical and research experience in autism and applied behavior analysis. The reported increase in the number of children with autism suggests growth in demand for professionals trained in behavior analytic applications within schools and the community.

Candidates who intend to sit for the Board Certified Behavior Analyst (BCBA) certification exam must also accumulate field work hours. Candidates have the option to enroll in practicum credit hours through UofL and work with the program director to complete appropriate experiences. Or, candidates can accumulate field work hours on their

own. However, candidates are strongly recommended to review and follow the BCBA Fieldwork Standards.

Admission Requirements

Admission to the program requires a graduate application to the Graduate School (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>).

Applicants must also have the following:

- A master's degree in Special Education, Psychology, or Behavior Analysis from an accredited institution
- Official transcripts
- Two letters of recommendation related to the applicant's work with individuals with autism
- Professional Goals Statement
- Current Resume
- Test of English as a Foreign Language (TOEFL/IELTS/Duolingo) is required of all students who completed their degrees from outside the United States in which English is not the native language.

Those intending to seek certification as a Board Certified Behavior Analyst (BCBA) must hold a master's degree in Education, Psychology, or Behavior Analysis.

Program Requirements

Program Coursework

Code	Title	Hours
EDSP 644	Applied Behavior Analysis	3
EDSP 650	Behavior Assessment	3
EDSP 654	Radical Behaviorism	3
EDSP 669	Single Case Research Methods and Designs	3
<i>Midpoint Assessment</i>		
EDSP 546	Behavior Analytic Approach to Communication	3
EDSP 651	Professional and Ethical Practice of Applied Behavior Analysis	3
EDSP 671	Behavior Intervention	3
<i>Exit Requirements</i>		
Minimum Total Hours		21

Midpoint Assessment: Completion of EDSP 650 Hallmark assessment task with a rating of Satisfactory. Grades of "B-" or better in all certificate courses prior to Midpoint: EDSP 644, EDSP 654, EDSP 669 and EDSP 650.

Exit Requirement: Completion of intervention project and presentation with a rating of Satisfactory and grades of B- or higher in all certificate courses.

The graduate certificate in Autism and Applied Behavior Analysis prepares students to meet the requirements for certification and/or licensure. If you plan to pursue professional licensure or certification, you should first determine your state's criteria for examination and licensure to see how/if our program meets those requirements prior to enrollment. We recommend that you also contact your state's licensing board directly to verify that the requirements have not changed recently and to answer any questions especially those regarding additional requirements beyond the degree.

More information about certification or licensure is available at the following website: <https://louisville.edu/oapa/licensure-information> (<https://louisville.edu/oapa/licensure-information/>) (you may search by school or by the name of the program then click on 'View Details' to display the information).

For programs with an online option, more information about certification or licensure is available here: <https://louisville.edu/online/About-Us?tab=disclosures> (<https://louisville.edu/online/About-Us/?tab=disclosures>)

Biochemistry and Molecular Genetics (MS)



Master of Science in Biochemistry and Molecular Genetics

Unit: School of Medicine (<https://louisville.edu/medicine/>) (GM)
Department: Biochemistry and Molecular Genetics (<http://louisville.edu/medicine/departments/biochemistry/>)
Program Webpage (<https://louisville.edu/medschool/biochemistry/>)
Academic Plan Code(s): BIOCMS

Program Information

The Master of Science in Biochemistry and Molecular Genetics program is two-to-three-year course of study designed for students interested in:

- A master's degree leading to jobs that do not require extensive research experience or credentials, e.g., pharmaceutical representatives, medical insurance providers, scientific writing.
- Preparation for professional school, e.g., medical or legal.
- Combined programs to form hybrid or dual science/business or science/public health degrees, such as an MS/MBA or MS/MPH programs.
- Gaining practical training in laboratory technique and data analysis as the basis for a career in biotechnology or academic research.

As teachers and scientists, the faculty of the Department of Biochemistry and Molecular Genetics subscribe to the following missions:

- Provide up-to-date and high-quality classroom and laboratory instruction in the disciplines of biochemistry, genetics, and molecular biology to students at the university.
- Conduct and publish research or other scholarship in areas that advance knowledge within a discipline, contribute to improving the human condition, and contribute to teaching.
- Train students and post-doctoral fellows in biochemical research.

Admission Requirements

All applications must be submitted online (<https://louisville.edu/graduate/apply/>) to the Graduate School.

Only complete applications will be reviewed. A complete application must have all the following:

- Transcripts of all course work
- At least two letters of recommendation, preferably from faculty in biology and/or chemistry
- A personal statement of interest

Selection Process

Applications will be reviewed by the Director of Graduate Studies and the Graduate Executive Committee of the Department. We use a holistic review process and use the GPA and experience to select applicants we feel will be successful in our program.

Final decisions for admissions will be made in April-May of each year.

Program Requirements

Code	Title	Hours
Program Core		18
BIOC 606	Biochemistry Seminar	1
BIOC 630	Responsible Conduct of Research: Survival Skills and Research Ethics	1
BIOC 645	Advanced Biochemistry I	4
BIOC 647	Advanced Biochemistry II	4
BIOC 668	Molecular Biology	4
Students complete one of the following options:		12
<i>MS Thesis Option</i>		
Electives (6 credit hours)		
Ten (10) credit hours from the following:		
BIOC 613	Biochemistry Laboratory	2-4
BIOC 619	Research	1-15
MS Non-Thesis Option: Laboratory-Based		
BIOC 611	Techniques in Biomolecular Interactions	4
BIOC 613	Biochemistry Laboratory	4
Electives		4
<i>MS Non-Thesis Option: Course-Based</i>		
Two from the following:		
BIOC 670	Biomedical Genetics and Genomics	3-5
BIOC 675	Cancer Biology	4
BIOC 661	Molecular Mechanisms of Toxicology	3
BIOC 663	High-Throughput Sequencing Data Analysis	3
Electives (inside or outside BIOC), 8+ credit hours ¹		
Minimum Total Hours		30-32

¹ Laboratory work (BIOC 613) may be considered an elective to count towards the non-thesis, course-based degree option.

Thesis/Final Paper

Thesis

A MS research thesis is required for the thesis option. Students, with the consent of their committee, may choose between a traditional research thesis format or a thesis in which the methods and results sections are replaced by manuscripts ready for submission for publication in a refereed journal.

In either case, the thesis must conform to the Graduate School Standards for Preparation of Theses and Dissertations (<https://louisville.edu/graduate/current-students/thesis-dissertation-information/>).

Paper

A paper based on literature research or laboratory research (rotation research) is required for the non-thesis, lab option. The topic will be approved by the Director of Graduate Studies and the paper evaluated by two faculty.

A paper based on literature research is required for the non-thesis, coursework option. The topic will be approved by the Director of Graduate Studies and the paper evaluated by two faculty.

Schedule of Course Offerings

Year 1		Hours
Fall		
BIOC 611	Techniques in Biomolecular Interactions	4
BIOC 645	Advanced Biochemistry I (Required)	4
BIOC 648	Journal Club in Biochemistry and Molecular Genetics	1
BIOC 663	High-Throughput Sequencing Data Analysis (Elective)	3
BIOC 670	Biomedical Genetics and Genomics (Elective)	3 or 5
BIOC 680	Biomolecular Interactions (Elective)	2
BIOC 606	Biochemistry Seminar (Required)	1
BIOC 603	Special Topics in Biochemistry (Elective)	1-4
BIOC 613	Biochemistry Laboratory (Required for lab-based option)	2-4
BIOC 619	Research (Required for thesis-based option)	1-9
Hours		18-20
Spring		
BIOC 603	Special Topics in Biochemistry	1-4
BIOC 606	Biochemistry Seminar	1
BIOC 613	Biochemistry Laboratory (Required for lab-based option)	2-4
BIOC 619	Research (Required for thesis-based option)	1-9
BIOC 647	Advanced Biochemistry II (Required)	4
BIOC 675	Cancer Biology (Elective)	4
BIOC 630	Responsible Conduct of Research: Survival Skills and Research Ethics (Required)	1
BIOC 661	Molecular Mechanisms of Toxicology (Elective)	3
BIOC 667	Cell Biology (Elective)	3
BIOC 668	Molecular Biology (Required)	4
Hours		19
Minimum Total Hours		37-39

Biochemistry and Molecular Genetics (PhD)

Doctor of Philosophy in Biochemistry and Molecular Genetics

Unit: School of Medicine (<http://louisville.edu/medicine/>) (GM)

Department: Biochemistry and Molecular Genetics (<http://louisville.edu/medschool/biochemistry/>)

Program Website (<http://louisville.edu/medschool/biochemistry/>)

Academic Plan Code(s): BIOCPHD

Program Information

As teachers and scientists, the faculty of the Department of Biochemistry and Molecular Genetics subscribe to the following missions:

- Provide up-to-date and high-quality classroom and laboratory instruction in the discipline of biochemistry, molecular biology, and genetics to students at the university.
- Conduct and publish research or other scholarship in areas that advance our knowledge of a discipline, and contribute to improving the human condition.
- Train students and post-doctoral fellows in biochemical research.

Admission Requirements

All applications must be submitted using the online graduate application (<http://louisville.edu/graduate/apply/>).

Doctoral students are admitted for Fall term only. Be sure to select Fall term for start date and Biochemistry and Molecular Genetics for the program. Review of applications begins in December of each year and applications are reviewed on a rolling basis through March.

Criteria and Mechanism for Selection

Criteria

The Biochemistry and Molecular Genetics department uses a holistic approach for reviewing applications and selecting candidates for interview. The applicant's academic record, research experience, and letters of recommendation are closely evaluated. Competitive candidates have a strong background in biochemistry, chemistry, or biology with evidence of rigorous coursework. In addition, a one-to-two-page personal statement describing past educational, laboratory and relevant life experiences, as well as a brief description of professional goals after the degree program, is required.

Competitive applicants have:

- A minimum undergraduate (and graduate) overall grade point average of 3.0 (4.0 system) with an average of 3.0 in science courses.
- Previous research experience
- Strong letters of recommendation

Selection

The Biochemistry and Molecular Genetics department Graduate Executive Committee (GEC) reviews applications on a rolling basis. Top candidates will be interviewed online or in person. Select candidates will be invited to a recruitment weekend in February to visit the department and meet faculty and students.

Select candidates are nominated for Integrated Programs in Biomedical Sciences (IPBS). Fellowship awards for qualified applicants (louisville.edu/medicine/ipibs/about (<http://louisville.edu/medicine/ipibs/about/>)). The department will notify applicants by email of their decision. All applicants who are accepted into the program must respond with their decision no later than April 15. In the absence of a response, after April 15 the position in the program and financial support is no longer guaranteed and may be offered to another applicant. The Biochemistry and Molecular Genetics department accepts four to six students per year into the program.

Requirements for the PhD Degree in Biochemistry and Molecular Genetics

During PhD training students receive considerable guidance from their mentor, committee, and faculty members of the department. However, students need to recognize that individuals who pursue a biomedical graduate degree are expected to take full responsibility for their own scientific and professional development and to seek out and utilize all available resources for that goal.

Annual progress reports to document that a student is in good standing within the Biochemistry and Molecular Genetics department graduate program are required. The criteria for good standing in the graduate program are based on successful completion of milestones that indicate progression towards a degree. These milestones are the successful completion of:

- All coursework with a minimum GPA of 3.0.
- A minimum of two laboratory rotations.
- Two seminar presentations.
- Annual progress reports that indicate satisfactory progress.
- Exam 1 (PhD qualifying exam).
- Exam 2a and 2b (approved research proposal and committee meeting).
- Annual research conferences with committee meetings in years three and beyond.

To fulfill all requirements for the PhD degree a student must

- Complete a body of novel research (dissertation).
- Publish at minimum one first author manuscript.
- Write and defend a doctoral dissertation that is acceptable by the dissertation committee and Graduate School.

Student Support

An IPIBS Fellowship will provide stipend support for the first 23 months. Support after the first 23 months is the responsibility of the individual student's dissertation advisor. Students are also encouraged to seek extramural support.

Guidance for the Student

The Director of the Biochemistry and Molecular Genetics Graduate Program will serve as the first year advisor to all incoming graduate students until a dissertation advisor (mentor) is selected. During the first year, all students will meet with all available faculty to discuss research projects and complete a minimum of two laboratory rotations to help select a lab and mentor. After completion of lab rotations and before beginning a second year, the student will select a mentor, subject to the approval of the Graduate Executive Committee and the department chair.

Qualifying Exam

All required coursework must be completed by the end of year two. Upon successful completion of all coursework the student moves into master's candidacy and is eligible for the PhD Qualifying Exam (QE).

The purpose of the QE is to evaluate the student's ability to interpret literature, develop a research plan, integrate material from the graduate curriculum, display core knowledge of biochemical principles, and orally defend his/her ideas. The format of the QE requires the student to write and orally defend a NIH-style fellowship proposal, followed by an oral exam covering general biochemical/genetic principles covered in the curriculum. Upon successful completion of the QE, the student will

be awarded a MS degree and move into doctoral candidacy. An initial committee meeting should be held during the second year to provide guidance on the student's research. A full research proposal must be completed and approved by the committee before the end of the Spring term of the students year three.

Curriculum

Year 1		Hours
Fall		
Required Courses		
BIOC 611	Techniques in Biomolecular Interactions	4
BIOC 613	Biochemistry Laboratory	4
BIOC 645	Advanced Biochemistry I	4
BIOC 648	Journal Club in Biochemistry and Molecular Genetics	1
Hours		13
Spring		
Required Courses		
BIOC 619	Research	1
BIOC 630	Responsible Conduct of Research: Survival Skills and Research Ethics	1
BIOC 667	Cell Biology	3
BIOC 668	Molecular Biology	4
Electives		0-3
ENGL 677	Graduate Writing in the Disciplines	3
Hours		9-12
Summer		
Required Courses		
BIOC 619	Research	5
BIOC 662	Biomedical Research Data Analysis Methods	1
Hours		6
Year 2		
Fall		
Required Courses		
BIOC 606	Biochemistry Seminar	1
BIOC 648	Journal Club in Biochemistry and Molecular Genetics	1
BIOC 670	Biomedical Genetics and Genomics	3-5
Electives		
BIOC 619	Research	1-2
BIOC 663	High-Throughput Sequencing Data Analysis	3
BIOC 670	Biomedical Genetics and Genomics (for 2 additional credits)	2
Hours		11-14
Spring		
Required Courses		
BIOC 619	Research	4
BIOC 620	Scientific Method and Grant Writing	2
Electives		
BIOC 675 or BIOC 661	Cancer Biology or Molecular Mechanisms of Toxicology	3-4
Hours		9-10
Summer		
Required Courses		
MAST 600	Master's Degree Candidacy	0
Hours		0
Years 3-5		
Required Courses		
DOCT 600	Doctoral Candidacy	0
Hours		0
Minimum Total Hours		48-55

Bioengineering (MEng)

Master of Engineering in Bioengineering

Unit: Speed School of Engineering (<https://engineering.louisville.edu/>) (SP)

Program Website (<https://engineering.louisville.edu/bioengineering/>)

Academic Plan Code(s): BE_ _MEN

Program Information

General Information

The Bachelor of Science in Bioengineering degree will provide a student with the basis to be able to complete the Master of Engineering (MEng) in Bioengineering degree. The Master of Engineering in Bioengineering degree program is accredited by the Engineering Accreditation Commission (EAC) of ABET, www.abet.org (<http://www.abet.org>).

Since the Bioengineering MEng is accredited as part of a five-year program with one-year of co-op experience, it is only available for students who have matriculated through the Bioengineering bachelor degree program at Speed School. Students who earn an undergraduate degree at a school or university other than the University of Louisville pursue the MS degree instead of the MEng degree.

Master of Engineering Program Educational Objectives

Embodying the University, Speed School of Engineering and Department of Bioengineering missions of providing an excellent education through research, innovation and a rigorous curriculum, the Department of Bioengineering Master of Engineering degree program will produce graduates who:

- Demonstrate advanced level academic expertise and practical engineering experience necessary to function as bioengineering professionals in a modern, ever-changing world. (Advanced Knowledge and Life-long Learning)
- Display competence by being selected for employment by industrial, academic or government entities or further professional/graduate studies. (Career Opportunities)
- Understand the broad, social, ethical and professional issues of contemporary engineering practice. (Awareness and Responsibility)

Master of Engineering Student Outcomes

In order to achieve these objectives, the Master of Engineering has the following outcomes set for its graduates.

Graduates will demonstrate:

- An ability to identify, formulate, and solve complex engineering problems by applying advanced principles of engineering, science and mathematics.
- An ability to apply engineering design to produce advanced solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental and economic factors.
- An ability to develop and conduct appropriate experimentation using scientific methods to collect, analyze and interpret data, and to use engineering judgment to draw conclusions.

- An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Residency

All graduate students are expected to make steady and satisfactory progress toward the completion of degrees. A candidate for the Master of Engineering degree who does not register for credit hours must maintain active registration by paying a fee each semester for MEng residency until the degree is awarded (i.e., the candidate must maintain continuous registration, including summer terms, in Graduate Studies). Failure to pay the MEng residency fee will be cause to cancel a student's residency. Students who are not enrolled for a period of more than 12 months will be considered to have withdrawn from the program. In order to be restored to residency, the student must submit a new application, have the recommendation of the department chair, receive the approval of the Associate Dean and pay the fee for each of the semesters during which the residency was void.

Academic Performance

The J.B. Speed School of Engineering has established the following performance policies:

- The minimum grade point average requirement for good standing is 3.00 for all academic work completed while in graduate studies.
- Any student with a cumulative graduate GPA below 3.00 will be placed on academic warning. Students on academic warning are limited to enrollment for thirteen (13) credit hours in a fall or spring semester and seven (7) credit hours for summer terms.

Students who do not bring their cumulative graduate GPA back at or above a 3.00 in the semester immediately following Academic Warning, will be placed on Academic Probation for the next semester of enrollment. Students on probation are limited to enrollment for thirteen (13) credit hours in a fall or spring semester and seven (7) credit hours for summer terms. Any student who remains on academic probation for two consecutive terms may be considered for dismissal from the program.

- Students receiving graduate assistantships (teaching, research or service) shall be provided adequate training and shall be required to understand and adhere to University policies related to these areas. The performance of teaching, research and service duties by such students shall be periodically evaluated. Students with teaching assistantships shall be evaluated annually.
- Students who fail to meet performance goals or who do not meet other requirements as outlined in the admission letter, program requirements or the university catalog may be subject to academic dismissal from their programs.
- A maximum of eight (8) credit hours of graduate level courses taken as an undergraduate may be used to satisfy MEng degree requirements; these courses cannot have been used to also satisfy BS degree requirements.

Degree Requirements

The following degree requirements are mandatory of all master of engineering candidates:

- The program of study must be completed with a 3.00 GPA or better for all graduate courses used to satisfy degree requirements. Additionally, the program of study must be completed with a 3.00 GPA or better for all academic work attempted in graduate studies.

- b. Master's degree students must take at least 24 credit hours of coursework at the University of Louisville to satisfy the residency requirement for the master's degree. A maximum of six (6) credit hours of graduate credit may be transferred from accredited institutions.
- c. Students following the thesis option must follow the Procedures and Standards for Master of Engineering Theses.
- d. The total requirements must be completed within six years after admission into graduate studies. The time limit imposed by the rule may be extended in individual cases upon recommendation of the department chair and approval of the associate dean for academic and student affairs.
- e. The MEng degree cannot be conferred prior to the BS degree.

Admission Standards

Since the Bioengineering MEng is accredited as part of a five-year program with one-year of co-op experience, it is only available for students who have matriculated through the Bioengineering bachelor's degree program at J. B. Speed School of Engineering.

The application form is available online (<https://engineering.louisville.edu/meng-graduate-application-form/>).

The requirements for admission or readmission to a master of engineering program are:

- a. Submission of a completed MEng application for the field of specialization in which the student is earning a bachelor degree from the J.B. Speed School of Engineering. Students can be admitted to the MEng program with fewer than thirteen (13) credit hours of BS degree requirements remaining and no later than two years post-conferral of their baccalaureate degree;
- b. Recommendation by the faculty and chair of the student's department for admission or readmission to graduate studies;
- c. Cumulative baccalaureate grade point average of 2.75. However, those students with cumulative baccalaureate grade-point averages from 2.50 to 2.75 may be admitted upon petition and approval of the chair and faculty of the department.

A student becomes a candidate for the master of engineering degree upon admission to graduate studies and initial registration as a graduate student.

Program Requirements

The Master of Engineering (MEng) in Bioengineering degree requires the following over and above the Bachelor of Science in Bioengineering Degree

Required Coursework

Code	Title	Hours
BE 621	Bioinstrumentation	4
BE 654	Advanced Physiology for Engineers	3
IE 563	Experimental Design in Engineering	3
BE Electives ^{1,2}		9
Technical Electives ^{1,3}		6
Select one of the following:		6
<i>Thesis Option</i>		
BE 697	Master of Engineering Thesis in Bioengineering ⁴	
<i>Non-Thesis Option</i>		

BE 691	Bioengineering Non-thesis Design/Research Project	
Technical Elective ^{1,3}		
Minimum Total Hours		31

The Master of Engineering degree must be completed with a 3.00 GPA or better for all graduate courses used to satisfy degree requirements. Additionally, the Master of Engineering degree must be completed with a 3.00 GPA or better for all academic work attempted in Graduate Studies.

A maximum of eight (8) credit hours of graduate-level courses taken as an undergraduate may be used to satisfy MEng degree requirements; these courses cannot have been used to also satisfy BS degree requirements.

- ¹ Electives must be chosen so that at least one-half of the total credits counted toward the degree, exclusive of thesis, are 600-level
- ² BE Electives must be chosen from the following approved list (see below). All prerequisites must be satisfied. A minimum of nine (9) credit hours and maximum of fifteen (15) credit hours of electives must be selected.
- ³ Technical Electives must be chosen from the following approved list. All prerequisites must be satisfied. Please note that all BE Electives can be counted toward Technical Electives, however, only three (3) credit hours from EM and three (3) credit hours from BIOC, CHEM, BE 695, or MATH may be used towards degree requirements.
- ⁴ For the thesis option, a student is required to select both an approved MEng thesis topic and the director and members of the thesis committee during the first term of Graduate Studies. The thesis director must give approval for enrollment in BE 697.

BE Electives

Code	Title	Hours
BE 500	Special Topics in Bioengineering	3
BE 522	Biomedical Acoustics	3
BE 524	LabVIEW for Bioengineers	3
BE 530	Machine Learning in Python	3
BE 540	Machine Learning in Medicine	3
BE 542	Medical Image Computing	3
BE 552	Introduction to Tissue Engineering	3
BE 553	Nanoscale Bioengineering: Application and Methodology of Nanobiomaterials in Bioengineering	3
BE 581	Advanced Computer-Aided Design and Manufacturing for Bioengineers	3
BE 593	Independent Study in Bioengineering	1-4
BE 600	Advanced Topics in Bioengineering	1-6
BE 605	Tissue and Molecular Biology Techniques Laboratory	3
BE 611	Cardiovascular Dynamics	3
BE 630	Biomechanical Computer Modeling and Simulation of Human Movement	3
BE 639	Injury Biomechanics	3
BE 640	Computational Methods for Medical Image Analysis	3

BE 645	Artificial Intelligence and Radiomics	3
BE 650	Advanced Biomaterials	3
BE 658	Rehabilitation Engineering and Assistive Technology	3
BE 670	Cellular Mechanobiology in Cancer	3
BE 683	Artificial Organs	3
BE 685	Modeling of Biological Phenomena	3
BE 693	Independent Study in Bioengineering	1-6

Technical Electives

Code	Title	Hours
BE 500	Special Topics in Bioengineering	3
BE 522	Biomedical Acoustics	3
BE 524	LabVIEW for Bioengineers	3
BE 540	Machine Learning in Medicine	3
BE 552	Introduction to Tissue Engineering	3
BE 553	Nanoscale Bioengineering: Application and Methodology of Nanobiomaterials in Bioengineering	3
BE 581	Advanced Computer-Aided Design and Manufacturing for Bioengineers	3
BE 593	Independent Study in Bioengineering	1-4
BE 600	Advanced Topics in Bioengineering	1-6
BE 605	Tissue and Molecular Biology Techniques Laboratory	3
BE 611	Cardiovascular Dynamics	3
BE 630	Biomechanical Computer Modeling and Simulation of Human Movement	3
BE 639	Injury Biomechanics	3
BE 640	Computational Methods for Medical Image Analysis	3
BE 645	Artificial Intelligence and Radiomics	3
BE 650	Advanced Biomaterials	3
BE 658	Rehabilitation Engineering and Assistive Technology	3
BE 670	Cellular Mechanobiology in Cancer	3
BE 683	Artificial Organs	3
BE 685	Modeling of Biological Phenomena	3
BE 693	Independent Study in Bioengineering	1-6
BE 695	Bioengineering Research Design & Methods	3
BIOC/CHEM 545	Biochemistry I	3
BIOC/CHEM 547	Advanced Biochemistry II	3
BIOC/CHEM 645	Advanced Biochemistry I	4
BIOC/CHEM 647	Advanced Biochemistry II	4
BIOL 653	Advanced Chronic Disease Biology	4
CSE 535	Database Systems	3
CSE 619	Design and Analysis of Computer Algorithms	3
CSE 628	Computer Graphics	3
CSE 632	Data Mining	3
CSE/ECE 641	Medical Imaging Systems	3
CSE 660	Introduction to Bioinformatics	3
ECE 520	Digital Signal Processing	3

ECE 521	Digital Signal Processing Laboratory	1
ECE 530	Introduction to Random Processes and Estimation Theory	3
ECE 533	Integrated Circuit Design	3
ECE 543	Fundamentals of Microfabrication and MEMS	3
ECE 544	Microfabrications/MEMS Laboratory	1
ECE 620	Pattern Recognition and Machine Intelligence	3
ECE 641	Medical Imaging Systems	3
ECE 643	Introduction to Biomedical Computing	3
ECE 655	Pattern Recognition and Machine Intelligence Laboratory	1
ECE 675	Nanostructure Self-Assembly	3
EM 525	Project Management	3
EM 613	Operations Management	3
EM 628	Engineering Management	3
EM 661	Engineering Statistics II	3
IE 580	Introduction to Human Factors Engineering and Ergonomics	3
IE 581	Advanced Topics in Human Factors Engineering	3
IE 631	Advanced Quality Control	3
MATH 501	Introduction to Analysis I - CUE (http://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
MATH 502	Introduction to Analysis II	3
ME 512	Finite Element Methods for Mechanical Design I	3
ME 555	Introduction to Micro and Nanotechnology	3
ME 565	Advanced Engineering Mathematics I	3
ME 606	Continuum Mechanics	3
ME 612	Finite Element Methods for Mechanical Design II	3
ME 638	Computational Methods in Fluid Flow and Heat Transfer	3
ME 644	Mechatronics	3
ME 650	Biofluid Mechanics	3
ME 651	Kinematics and Kinetics of Human Movement	3

Bioengineering (MS)

Master of Science in Bioengineering

Unit: Speed School of Engineering (<https://engineering.louisville.edu/>)
Department: Bioengineering (<https://engineering.louisville.edu/bioengineering/>)

Program Website (<https://engineering.louisville.edu/graduatedegrees/>)
Academic Plan Code: BE_ _MS

Program Information

General Information

The Master of Science in Bioengineering program offers advanced-level training that provides students with in-depth knowledge of bioengineering in areas such as biocomputational modeling, bioimaging, bioinstrumentation, biomaterials, biomechanics, biomedical devices, bioMEMS, bionanotechnology, biosensors, biosignal processing, biosystems control, molecular bioengineering, and tissue engineering. Student educational experiences are enhanced by research opportunities in laboratories conducting basic and translational research on oncology,

cardiovascular disease, nanotherapeutics, orthopedics, drug delivery, injury, tissue regeneration and image-based diagnostics.

The Master of Science (MS) degree program is intended for persons having an accredited baccalaureate degree in bioengineering, but is also available to those with other backgrounds. Applicants with other backgrounds should expect to take some undergraduate background coursework. Students interested in the MS degree program should consult the Director of Graduate Studies in the Department of Bioengineering.

The Master of Science in Bioengineering program objectives are to:

- a. Train highly motivated graduate students who demonstrate advanced level bioengineering expertise and practical engineering experience necessary to function as bioengineering professionals.
- b. Develop students with the bioengineering expertise and practical experience necessary for employment in industry, academia or government, or further professional/graduate studies.

Academic Performance

The J.B. Speed School of Engineering has established the following performance policies:

- a. The minimum grade point average requirement for good standing and satisfaction of degree requirements is 3.00 for all academic work completed while in graduate studies.
- b. Any student who does not satisfy the published performance criteria shall be placed in probationary status. Please review the Academic Standing Section (<https://catalog.louisville.edu/graduate/general-policies-procedures-requirements/>) within this catalog in regard to Academic Probation.
- c. Students who fail to meet performance goals or who do not meet other requirements as outlined in the admission letter, program requirements or the university catalog may be subject to academic dismissal from their programs. All degree requirements must be completed within six years from admission into the program.

All graduate students are expected to make steady and satisfactory progress toward the completion of degrees. Students who are not enrolled for a period of more than 12 months will be considered to have withdrawn from the program. Students who seek to return after such a period of time must contact the graduate program director.

The Bioengineering department has established the following grading policy for the Master of Science in Bioengineering program:

1. A student cannot receive a C+ or lower grade in courses counting towards the Bioengineering Master's of Science Program. The program Director must be made aware of any coursework in which a grade of C+ or lower was received.

Degree Requirements

The following degree requirements are mandatory of all Master of Science candidates:

- a. The program of study must be completed with a 3.00 GPA or better for all graduate courses used to satisfy degree requirements. Additionally, the program of study must be completed with a 3.00 GPA or better for all academic work attempted in graduate studies.
- b. Master's students must take at least 24 credit hours of coursework at the University of Louisville to satisfy the residency requirement for

the master's degree. A maximum of six (6) credit hours of graduate credit may be transferred from accredited institutions.

- c. Students following the Thesis Option must follow the Guidelines for the Preparation of a Thesis or Dissertation [pdf] (<http://louisville.edu/graduate/current-students/thesis-dissertation-information/thesis-dissertation-guidelines-1/>)
- d. Student has six years after their admission to the MS program to complete their degree.

The requirements for the Master of Science degree are discussed in more detail in the Degree Requirements (<https://catalog.louisville.edu/graduate/general-policies-procedures-requirements/degree-requirements/>) section of this catalog.

Admission Standards

The admission standards for the Master of Science program in Bioengineering are as follows:

- a. All admission applications for the program shall include:
 - i. A completed application for admission (<http://louisville.edu/graduate/apply/>) for the Graduate School,
 - ii. An application fee,
 - iii. At least two letters of recommendation,
 - iv. Written statement describing previous experience related to Bioengineering and how the Master of Science in Bioengineering will allow the applicant to fulfill their career goals, and
 - v. Official transcript(s) for all previous post-secondary coursework. All transcripts not in English must be certified as authentic and translated verbatim into English.
- b. The minimum requirement for admission is the baccalaureate degree or its equivalent from an accredited institution.
- c. The successful applicant will typically have an undergraduate grade point average of 3.00 or above (on a 4.00 scale).
- d. International students whose primary language is not English must show English language proficiency by either TOEFL/IELTS/Duolingo score or demonstration of a degree awarded from an acceptable English language institution. The successful applicant will typically have a TOEFL score of 80 or higher or overall IELTS score of 6.5 or higher or a Duolingo score of 105 or higher.

Degree Requirements

Code	Title	Hours
Program Core		
BE 601	Bioengineering Seminar (two)	2
BE 621	Bioinstrumentation	4
BE 654	Advanced Physiology for Engineers	3
BE 695	Bioengineering Research Design & Methods	3
CHE 686	Chemical Engineering Analysis	3
Technical Electives ¹		9-12
See below for areas of emphasis and approved courses ¹		
Thesis or Project ²		3-6
BE 698	Master of Science Thesis in Bioengineering	
or BE 691	Bioengineering Non-thesis Design/Research Project	
Minimum Total Hours		30

The master of science degree must be completed with a 3.00 GPA or better for all graduate courses used to satisfy degree requirements and all academic work attempted in graduate studies.

¹ Thesis option students complete nine (9) credit hours of emphasis-area coursework; non-thesis option students complete twelve (12) credit hours of emphasis-area coursework.

² Thesis option students complete six (6) credit hours of BE 698 Master of Science Thesis in Bioengineering; non-thesis option students complete three (3) credit hours of BE 691 Bioengineering Non-thesis Design/Research Project.

Technical Electives

Thesis option students complete nine (9) credit hours of technical electives in the emphasis areas listed below. Non-thesis/project option students complete twelve (12) credit hours of technical electives. Students may take technical electives from more than one area of emphasis with prior approval from the student's advisor and the Department Chair.

Technical electives must include at least nine (9) credit hours of Bioengineering (BE-prefix courses), unless a student's advisor and the Department Chair approve a deviation from this requirement.

Fulfillment of technical elective requirements with courses outside of the emphasis-area electives require permission from the student's advisor and Department Chair.

Code	Title	Hours
Bioelectrical & Biomedical Devices		
BE 522	Biomedical Acoustics	
BE 524	LabVIEW for Bioengineers	
BE 581	Advanced Computer-Aided Design and Manufacturing for Bioengineers	
BE 611	Cardiovascular Dynamics	
BE 650	Advanced Biomaterials	
BE 683	Artificial Organs	
ECE 543	Fundamentals of Microfabrication and MEMS	
Bioimaging & Biocomputational Modeling		
BE 530	Machine Learning in Python	
BE 540	Machine Learning in Medicine	
BE 542	Medical Image Computing	
BE 543	Computer Tools for Medical Image Analysis	
BE 544	Artificial Intelligence Techniques in Digital Pathology	
BE 640	Computational Methods for Medical Image Analysis	
BE 685	Modeling of Biological Phenomena	
CSE 622	Simulation and Modeling of Discrete Systems	
CSE 627	Digital Image Processing	
CSE/ECE 641	Medical Imaging Systems	
CSE 660	Introduction to Bioinformatics	
ECE 643	Introduction to Biomedical Computing	
Biomechanics & Rehabilitation		
BE 581	Advanced Computer-Aided Design and Manufacturing for Bioengineers	
BE 611	Cardiovascular Dynamics	

BE 630	Biomechanical Computer Modeling and Simulation of Human Movement
BE 639	Injury Biomechanics
BE 658	Rehabilitation Engineering and Assistive Technology
BE 670	Cellular Mechanobiology in Cancer
Molecular & Tissue Engineering	
BE 552	Introduction to Tissue Engineering
BE 553	Nanoscale Bioengineering: Application and Methodology of Nanobiomaterials in Bioengineering
BE 605	Tissue and Molecular Biology Techniques Laboratory
BE 650	Advanced Biomaterials
BE 670	Cellular Mechanobiology in Cancer
BIOC 680	Biomolecular Interactions
BIOC 668	Molecular Biology
BIOC 611	Techniques in Biomolecular Interactions

Biology (MS)

Master of Science in Biology

Unit: College of Arts and Sciences (<http://louisville.edu/artsandsciences/>) (GA)

Department: Biology (<http://louisville.edu/biology/>)

Program Website (<http://louisville.edu/biology/graduate/>)

Academic Plan Code(s): BIOLMS_THE, BIOLMS_NTH, BIOLMS_NAC

Program Information

The degree program is available to qualified individuals possessing a bachelor's degree from an accredited college or university. A biology undergraduate major is preferred. However, other majors containing sufficient biology, chemistry and math may be acceptable.

The Department of Biology offers master's degrees with programs of study tailored to the needs and interests of a diverse student population. Students may enroll on a full or part-time basis. The Department of Biology offers both thesis and non-thesis options. The thesis option is generally chosen by students with career goals which include a research emphasis. Students choosing this option take coursework and carry out an intensive independent research project under the supervision of a member of the Graduate Faculty, culminating in a written thesis based upon the research project. The non-thesis option is usually chosen by those who wish to advance their knowledge of biology but are not sure of a specific career goal or do not anticipate a research emphasis in their future.

Accelerated BA-BS/MS in Biology

Students who wish to pursue an accelerated non-thesis master's degree in Biology (BA-BS/MS) will be allowed to apply up to nine (9) credit hours of coursework taken for graduate credit while enrolled as an undergraduate. An additional 24 credit hours of graduate coursework will constitute the minimum number of credit hours for obtaining the non-thesis masters in the accelerated program.

Admission Requirements

Program admission requirements and application requirements can be viewed on the Department of Biology website (<http://louisville.edu/biology/>). Questions can be addressed to or further information obtained from the Director of Graduate Studies, Dr. Sarah Emery, at (502) 852-5940 or sarah.emery@louisville.edu (smemer03@louisville.edu).

The following requirements/standards apply to applicants to the MS program in the Department of Biology:

- The applicant must have a baccalaureate degree with a major in Biology or an acceptable sub-discipline, with an undergraduate GPA of 3.0 or higher.
- While there is no minimum requirement for GRE scores, competitive students usually have scores around the 50th percentile or better on the general GRE test (verbal + quantitative). MCAT or DAT test scores at similar percentiles are also acceptable. **NOTE: SUBMISSION OF GRE SCORES IS OPTIONAL FOR ALL APPLICANTS THROUGH SPRING 2024. WE SUGGEST ONLY SUBMITTING SCORES IF THEY WILL HELP PROVIDE A MORE HOLISTIC PERSPECTIVE TO YOUR APPLICATION. GRE SCORES ARE NOT USED FOR FUNDING DECISIONS.**
- For foreign students, a TOEFL score of 83 on the internet-based exam, at least 6.5 on the IELTS exam is required or Duolingo score of 105 (students holding a baccalaureate or advanced degree from an accredited institution in the United States or other English-speaking country are exempt from this requirement).

Deadline for Completed Applications

- July 1 for Fall admission
- November 1 for Spring admission.

Application Materials

Applications will be complete when the following materials have been received (final action on applications will not be taken until complete):

- A completed graduate application (<https://louisville.edu/graduate/futurestudents/apply-materials/application/>) form and fee
- Official transcripts of all previous undergraduate and graduate coursework. All academic credentials not in English must be accompanied with a notarized verbatim English translation in addition to official transcripts. If you studied outside of the United States, you are required to submit your academic records to a NACES (National Association of Credential Evaluation Services) verified credential evaluation service for a course-by-course evaluation to determine that your degree is equivalent to a US bachelor's degree.
- Official GRE, MCAT or DAT exam scores (optional)
- Two or more letters of recommendation from persons familiar with your academic performance and capabilities
- Official TOEFL, IELTS or Duolingo scores if required.

Send to:

Official documentation should be sent to the Graduate School and a copy to the Director of Graduate Studies, Department of Biology

Program Requirements

MS in Biology and Accelerated BA-BS/MS in Biology

Thesis option students are required to complete a minimum of 30 credit hours; non-thesis option students must complete a minimum of 33 credit hours.

A minimum of 12 (thesis option) or 17 (non-thesis option) credit hours, exclusive of thesis credit, must be in courses at the 600 level. Students intending to seek a PhD degree later are advised to take as many of their courses as possible at the 600 level or above.

Thesis Option

Code	Title	Hours
General Background Courses		
One course from two of the following categories: ¹		6-8
	Cellular/Physiology	
	Subcellular/Genetics	
	Evolution or Systematics	
	Population, Community, or Ecosystem Ecology	
Other Coursework		
BIOL 650	Advanced Biostatistics	4
	Electives	12-14
	Thesis Research (600 level)	6
Minimum Total Hours		30

Non-Thesis Option

Code	Title	Hours
General Background Courses		
One course from three of the following categories:		9-12
	Cellular/Physiology	
	Subcellular/Genetics	
	Evolution or Systematics	
	Population, Community, or Ecosystem Ecology	
Other Coursework		
BIOL 650	Advanced Biostatistics	4
BIOL 691	Independent Research	3-4
	Electives	13-17
Minimum Total Hours		33

¹ Courses to be selected by student's committee: one course from each of two (thesis option) or three (non-thesis option) Background Coursework categories.

Biology (PhD)

Doctor of Philosophy in Biology

Unit: College of Arts and Sciences (<http://louisville.edu/artsandsciences/intro/>) (GA)

Department: Biology (<http://louisville.edu/biology/graduate/>)

Program Website (<http://louisville.edu/biology/graduate/>)

Academic Plan Code(s): BIOLPHDEEB, BIOLPHDMCD

Program Information

A broad range of courses are taught in most biological disciplines, although the department is focused in two major directions. Faculty in the Divisions of Molecular, Cellular, and Developmental Biology (MCD) and Evolution, Ecology and Behavioral Biology (EEB) have research interests in environmental microbiology, population and microbial genetics, developmental biology, plant and animal physiology, metabolism, plant and animal ecology, behavioral ecology, invertebrate zoology, and community and ecosystem ecology.

Students seeking the PhD Degree in Biology traditionally have a master's degree or its equivalent; however, students may enter the program with only the baccalaureate degree. Generally, the first year or two is spent in coursework, research is begun by the second year, and the thesis/dissertation completed in the final year.

Graduate Assistantships and Other Financial Support

Graduate Teaching Assistantships (GTA) are awarded by the Graduate Committee of the Department of Biology to meet the instructional needs of the Department and enhance and broaden the educational experience of doctoral students. All newly admitted students are automatically considered for this type of annual support, which includes a monthly stipend, tuition remission, and health insurance.

Financial support may also be available from individual faculty members who have research funding that supports graduate students as Graduate Research Assistants (GRA). The faculty members holding this support select students to fill these positions.

A small number of the most highly qualified accepted applicants will be nominated by the Department for University Fellowship awards, which carry a monthly stipend, tuition remission, and health insurance benefits. These students must meet qualifications set by the Graduate School.

Admission Requirements

The following requirements must be met in order to be admitted to the PhD program in the Department of Biology:

- a. The applicant must have a baccalaureate degree with a major in biology or an acceptable sub-discipline of biology.
- b. The applicant must meet the following admissions standards:
 - Undergraduate GPA of 3.0 or higher
 - While there is no minimum requirement for GRE scores, competitive students usually have scores around the 50th percentile or better on the general GRE test (verbal + quantitative). **NOTE: SUBMISSION OF GRE SCORES IS OPTIONAL FOR ALL APPLICANTS THROUGH SPRING 2024. WE SUGGEST ONLY SUBMITTING SCORES IF THEY WILL HELP PROVIDE A MORE HOLISTIC PERSPECTIVE TO YOUR APPLICATION. GRE SCORES ARE NOT USED FOR FUNDING DECISIONS.**
 - For foreign students, a TOEFL score of 83 on the internet-based exam; at least 6.5 on the IELTS exam or Duolingo score of 105 (students holding a baccalaureate or advanced degree from an accredited institution in the United States are exempt from this requirement).
- c. All applicants must review the research specialties of the departmental faculty to ensure that an area compatible with the student's interest is available. Applicants for the PhD program must communicate with a member of the biology faculty prior to admission and receive agreement that the faculty member will serve as the major professor. No formal admission to the program can occur

without the preliminary acceptance of a mentor. Faculty contact information is available at louisville.edu/biology (<http://louisville.edu/biology/>).

Your application will be complete when we have all of the following (final action on an application cannot be taken until all items have been received):

Official documentation must be sent to the Graduate School and a copy to the Director of Graduate Studies, Department of Biology. Send the following:

- Completed graduate application (<https://louisville.edu/graduate/futurestudents/apply-materials/application/>) and application fee;
- One official transcript of all previous undergraduate and graduate coursework. All academic credentials not in English must be accompanied with a notarized verbatim English translation in addition to official transcripts. If you studied outside of the United States, you are required to submit your academic records to a NACES (National Association of Credential Evaluation Services) verified credential evaluation service for a course-by-course evaluation to determine that your degree is equivalent to a US bachelor's degree.
- Official GRE scores (optional)
- Two or more letters of recommendation from persons familiar with your academic performance; and
- Official TOEFL, IELTS or Duolingo scores (international students).

Deadline for completed applications:

- July 1* for Fall admission
- November 1 for Spring admission.

*For full consideration for financial support, Ph.D. applications should be completed by January 15 for Fall admission.

Degree Requirements for the PhD in Biology

Code	Title	Hours
Foundations in Biology		
BIOL 600	Graduate Seminar I	1
BIOL 601	Graduate Seminar II	1
One course to be selected by the student's committee from each category:		
	Biostatistics	4
	Evolutionary Biology ¹	4
Focus Area		
Select two courses from within an Area of Focus:		8
Ecology, Evolution and Behavioral (EEB) Biology Focus Area:		
Population and Community Ecology		
Ecosystem Ecology or Behavioral Ecology		
Molecular, Cellular and Developmental (MCD) Biology Focus Area:		
Genetics/Cellular ²		
Physiology ³		
Advanced Biology Electives		16

BIOL 700	Dissertation Research	7
Minimum Total Hours		41

- ¹ Courses that cover the evolutionary history and/or phylogenetic relationships of molecules or organisms
- ² Courses that discuss the biochemistry and molecular genetics of life or describe the cell as the structural and functional unit of life
- ³ Courses that discuss life processes at the level of the organism

Biostatistics (CERT)

Graduate Certificate in Biostatistics

Unit: School of Public Health and Information Science (<http://louisville.edu/sphis/>) (GH)

Department: Bioinformatics and Biostatistics (<http://louisville.edu/sphis/departments/bioinformatics-biostatistics/>)

Program Website (<http://louisville.edu/sphis/departments/bioinformatics-biostatistics/academics/certificate/>)

Academic Plan Code(s): BDSCCBS, BDSCCBSO

Program Information

This program can be completed in a traditional classroom format or entirely online (<http://louisville.edu/online/programs/certificate-programs/certificate-in-biostatistics/>).

The Department of Biostatistics offers this certificate program to deliver core biostatistics instruction to a wide spectrum of the industrial workforce. Students are required to complete at least 15 credit hours of core and elective coursework. The program provides an ideal path for students and professionals seeking to enhance their data analytic and decision-making skills. In addition, individuals who are interested in the possibility of entering the MS program in Biostatistics can use this program as a stepping stone to the master's degree.

Competencies

The core competencies of the Certificate in Biostatistics program include knowledge of basic Biostatistical methods, basic knowledge of data management and statistical computing and a preliminary exposure to research design.

- Analyze moderately complex research data using statistical methods involving common linear statistical models. [C4]*
- Manage data and conduct elementary statistical computing using SAS software. [C3]*
- Critique/design basic methods for moderately complex research problems [C6]*

Demonstration of the competencies is accomplished by successful completion of all certificate curriculum activities.

* Bracketed codes represent cognitive domain levels from Bloom's Taxonomy

Faculty Advisor

On matriculation, each student is assigned a faculty advisor and is requested to meet at least once a semester (face-to-face or using a video conferencing tool) with his or her advisor. The faculty advisor works with the student to develop a program of study and serves as an academic mentor and counselor on career and employment

opportunities, professional development, and opportunities beyond the certificate.

Admission Requirements

- Graduate application (<http://louisville.edu/graduate/apply/>) submitted to the Graduate School
- Bachelor's degree or its equivalent in basic sciences, economics, psychology, or in a closely related discipline from an accredited institution. The curriculum must contain a statistics or biostatistics course at the sophomore level or higher and at least two courses in basic sciences.
- Preferred minimum GPA is 2.75 on a 4.0 scale.
- Curriculum vitae (CV)
- At least two letters of recommendation written within past twelve months, submitted as part of the application.
- Non-refundable application fee.
- Postsecondary transcripts. Transcripts from institutions outside of the United States will require a foreign credential evaluation.
- Proficiency in English language is a requirement and a key to the success in the program. English language proficiency is established by one of the following:
 - TOEFL examination score at or above 213 (computer based test) and 79 (internet based test)
 - IELTS test score of 6.5 or higher
 - Duolingo test score of 105 or higher
 - ECFMG (Educational Commission for Foreign Medical Graduates) certification
 - Successful completion of the exit examination for the advanced level of an Intensive English as a Second Language Program
 - Demonstration of a degree awarded from an institution with instruction primarily in English, as formally documented by an appropriate institutional official.

Application Deadline

Fall semester – July 1 (International applicants); July 25 (Domestic applicants).

Spring semester – Applications are not accepted.

Summer semester – April 1 (International applicants); April 15 (Domestic applicants).

- *Only students interested in eventually pursuing the MS in Biostatistics should seek Summer admission. No Certificate courses are offered in the Summer term, only our Math Tools remedial calculus courses.*

Information contact:

Dr. Doug Lorenz
douglas.lorenz@louisville.edu
502-852-3635

Curriculum

The curriculum calls for completing 15-16 credit hours using courses listed below.

Certificate Requirements

Code	Title	Hours
Biostatistics Coursework		
PHST 680	Biostatistical Methods I	3
PHST 681	Biostatistical Methods II	3
PHST 620	Introduction to Statistical Computing	3
PHST 684	Categorical Data Analysis ¹	3
Choose one of the following:		3-4
PHST 640	Statistical Methods for Research Design in Health Sciences	
or		
PHST 624 & PHST 625	Clinical Trials I: Planning and Design & Clinical Trials II	
Minimum Total Hours		15-16

If a student chooses to pursue the Master of Science (MS) in Biostatistics degree after enrolling in or completing the Biostatistics Certificate program, then all relevant coursework completed within the preceding five years with a grade of B or better may be applied towards the coursework for the MS in Biostatistics degree.

¹ Course requires the completion of PHST 680 as a prerequisite.

Biostatistics (MS)

Master of Science in Biostatistics (BDSCMS)

Unit: School of Public Health and Information Sciences (<https://louisville.edu/sphis/>) (GH)

Department: Bioinformatics and Biostatistics (<http://louisville.edu/sphis/departments/bioinformatics-biostatistics/>)

Program Webpage (<http://louisville.edu/sphis/departments/bioinformatics-biostatistics/academics/ms/>)

Academic Plan Codes: BDSCMS, BDSCMS_O, BDSCMS_INF

Program Information

This program can be completed in a traditional classroom format or entirely online (<http://louisville.edu/online/programs/certificate-programs/certificate-in-biostatistics/>).

Biostatistics involves the development and application of statistical techniques to scientific research in health-related fields including medicine, nursing, and public health. Students in the Master of Science in Biostatistics program receive state-of-the-art training in the latest statistical methodologies with focus on the design of research studies, modern statistical data analysis in health sciences research, and research in Biostatistical methodology. In addition, students are provided with tools with which to develop evidence-based clinical and healthcare policies and guidelines.

Competency

Evaluate the biostatistics content of scientific and biomedical literature. ^{C6}

Analyze moderately complex research data using statistical methods involving common linear statistical models. ^{C4}

Manage data using spreadsheet and database software. ^{C3}

Demonstrate use of standard statistical and graphics computer packages such as SAS, R, Microsoft Excel, and SPSS. ^{C3}

Evaluate statistical methods presented in the literature. ^{C6}

Investigate theoretic underpinnings and apply principles and theorems of biostatistics. ^{C4}

Design research studies using appropriate statistical methods. ^{C3}

Superscript codes represent cognitive domain levels from Bloom's Taxonomy

Demonstration of the competencies is accomplished by successful completion of all MS curriculum activities.

Faculty Advisor

Upon admission to the MS program, the program director serves as the student's faculty advisor until a mentor for the student's independent study, practicum or thesis (as applicable) is identified. At this milestone, the mentor becomes the student's faculty advisor.

Program of Study

Upon admission to the MS program, the program director, working with the student as faculty advisor, develops a program of study for the student, which requires agreement by the student and the academic dean. Changes to a student's program of study, including coursework, milestones, and their anticipated timings, are made by the student's faculty advisor, working with the student, and formally signed by the student, the faculty advisor, the program director, and, for selected changes, the academic dean. This flexibility allows adapting programs of study to differing student capabilities and interests.

Admission Requirements

The MS program is available to students who have completed an undergraduate degree in biostatistics, statistics, mathematics, or a related discipline and possess competency in college-level calculus, up to and including multivariable calculus (partial differentiation and multiple integration) and statistics as evidenced by transcripts from postsecondary institutions attended.

The following are required for admission:

- Graduate application (<http://louisville.edu/graduate/apply/>) submitted to the Graduate School.
- Non-refundable application fee.
- At least two letters of recommendation written within past twelve months, submitted as part of the graduate application (<http://louisville.edu/graduate/apply/>)
- All post-secondary transcripts. Transcripts from institutions outside of the United States require a foreign credential evaluation.
 - The minimum undergraduate grade point average that will be considered for unconditional acceptance and admission is 3.0 on a 4.0 scale.
 - Students lacking the necessary background in calculus (up to and including multivariable calculus with coverage of partial differentiation and multiple integration) may be conditionally admitted to the MS program under Provisional Probation status and required to complete remedial coursework in calculus, offered by the Department in the University of Louisville's summer term. A minimum grade of B- in each course assigned to the student must be achieved (in addition to satisfaction of any other admission conditions) in order for the student to be fully admitted to the MS program. Students have one opportunity to satisfactorily complete all remedial courses assigned

to them and all remedial courses must be completed prior to the student's first Fall semester in the program. Students admitted under Provisional Probation status will be "discontinued" from the MS program if they fail to achieve this required calculus competency. The details of these and all conditional admissions are specified in the admission letter students receive from the Department.

- A statement of purpose submitted to the department office, which must include desired degree program.
- International students for whom English is not their primary language must show English language proficiency by one of the following:
 - TOEFL examination score at or above 550 (paper based test and a 5.0 on the TWE test), 213 (computer based test), 79 (internet based test)
 - IELTS test score of 6.5 or higher
 - Duolingo test score of 105 or higher
 - ECFMG (Educational Commission for Foreign Medical Graduates) certification
 - Successfully passing the exit examination for the advanced level of an Intensive English as a Second Language Program
 - Demonstration of a degree awarded from an institution with instruction primarily in English, as formally documented by an appropriate institutional official

Application Deadline

- Fall semester – July 1 (International applicants); July 25 (Domestic applicants).
- Spring semester – Applications are not accepted.
- Summer semester – April 1 (International applicants); April 15 (Domestic applicants).
 - *Summer admission is only for student seeking provisional admission to the MS with the requirement to complete our Math Tools sequence in remedial calculus.*

Program Requirements

The MS program in biostatistics can be completed by one of three options. The descriptions below are for students who have completed all prerequisite courses for required and elective courses included in each degree program. Additional credit hours may be needed for remediation of missing or lacking student capabilities encountered following matriculation or for capabilities outside the standard coursework required for an identified project or thesis.

- **The Standard Program** is a 30 credit hour, non-thesis curriculum that emphasizes a broad understanding of biostatistics and can be completed in three semesters by full-time students. The standard program can be completed in a traditional classroom format or entirely online (<http://louisville.edu/online/programs/certificate-programs/certificate-in-biostatistics/>).
- **The Thesis Option** involves continuing beyond the required coursework for the standard program to pursue the preparation and defense of a master's thesis in an additional semester, during which the student enrolls for a thesis research course for no fewer than six (6) credit hours. The thesis option is recommended for students intending to pursue a PhD degree or wanting to pursue a research project that interests them. However, a master's thesis is a requirement for the thesis option only. A student who elects to pursue the thesis option and subsequently does not successfully complete

the thesis remains eligible for the award of degree under the standard program.

- **The Bioinformatics Concentration** is a 30 credit hour, non-thesis curriculum that is based on coursework in bioinformatics and biostatistics and can also be completed in three semesters by full-time students. The Bioinformatics concentration is currently available in a traditional classroom format only.

Coursework Requirements

Code	Title	Hours
Core Coursework ¹		12
Concentration Coursework		18
Thesis (optional)		[6]
Minimum Total Hours		30

For a detailed description of the degree requirements and course listing for each option, click on the "Concentration Requirements" tab.

Students will declare their intended degree option upon entrance to the program. Students may choose to move onto a different program path upon discussion with the Program Director. However, switching between the standard program and the Bioinformatics concentration will typically lead to a delay in degree fulfillment due to the differences in the required coursework. Students intending to graduate with the thesis option will begin with the standard program. At the completion of the spring semester of the first year for full-time students (the completion of at least 19 credit hours for part time students), students that have not yet declared for the thesis option may make this declaration, if desired.

Award of degree from an accredited school of public health requires successful completion of the equivalent of three (3) credit hours of instruction that provides students a broad introduction to public health. Students with a prior degree and/or coursework from a CEPH accredited school or program of public health may be relieved of this requirement, per approval of the Associate Dean for Academic Affairs.

Program Core

The following courses are required for all three tracks:

Year 1		
Fall		Hours
PHST 661	Probability	3
PHST 680	Biostatistical Methods I	3
PHPH 523	Public Health in the United States ¹	(3)
Hours		6
Spring		Hours
PHST 662	Mathematical Statistics	3
PHST 681	Biostatistical Methods II	3
Hours		6
Minimum Total Hours		12

¹ PHPH 523 fulfills the accreditation requirement that all graduates from the School of Public Health and Information Science receive foundational instruction in public health. The three (3) credit hours for PHPH 523 do not accrue toward the 30 credit hours required for MS degree completion. Students with a prior degree and/or coursework from a CEPH accredited school or program of public health may be relieved of this requirement, per approval of the Associate Dean for Academic Affairs.

Concentration Coursework

The course tables below list all required courses for each track, including the Program Core courses listed under the Degree Requirements tab.

Standard Program Curriculum

Year 1		
Fall		Hours
PHST 661	Probability	3
PHST 680	Biostatistical Methods I	3
PHST 624	Clinical Trials I: Planning and Design	2
PHPH 523	Public Health in the United States ¹	(3)
Hours		8
Spring		
PHST 662	Mathematical Statistics	3
PHST 681	Biostatistical Methods II	3
PHST 684	Categorical Data Analysis	3
PHST 625	Clinical Trials II	2
Hours		11
Year 2		
Fall		Hours
PHST 683	Survival Analysis	3
PHST 620	Introduction to Statistical Computing	3
Various Electives ²		5
Hours		11
Minimum Total Hours		30

¹ PHPH 523 fulfills the accreditation requirement that all graduates from the School of Public Health and Information Science receive foundational instruction in public health. The three (3) credit hours for PHPH 523 do not accrue toward the 30 credit hours required for MS degree completion. Students with a prior degree and/or coursework from a CEPH accredited school or program of public health may be relieved of this requirement, per approval of the Associate Dean for Academic Affairs.

² Electives are chosen with the approval of a faculty advisor. Students are typically encouraged to select electives from among the following courses offered by the Department of Bioinformatics and Biostatistics:

Standard Program Electives

Code	Title	Hours
PHST 603	Biostatistics Public Health Practicum I	1-2
PHST 640	Statistical Methods for Research Design in Health Sciences	3
PHMS 641	Data Mining I	3
PHST 675	Independent Study in Biostatistics	1-3
PHST 682	Multivariate Statistical Analysis	3

Subject to the approval of a faculty advisor, students are also welcome to choose elective courses outside of the department in fields related to biostatistics, such as Mathematics, Epidemiology, and Computer Science.

Students seeking to pursue elective coursework outside the department are responsible for ensuring they have met the prerequisites for these courses.

Bioinformatics Concentration Curriculum

Since the curriculum for the Bioinformatics concentration differs from the standard program at the beginning of the first semester of study,

students electing the Bioinformatics concentration must declare this choice at or before enrollment.

Year 1		
Fall		Hours
PHST 661	Probability	3
PHST 680	Biostatistical Methods I	3
BIOC 545	Biochemistry I	3
PHPH 523	Public Health in the United States ¹	(3)
Hours		9
Spring		
PHST 662	Mathematical Statistics	3
PHST 681	Biostatistical Methods II	3
Various electives ²		3
Hours		9
Year 2		
Fall		Hours
PHST 710	Advanced Statistical Computing I	3
PHST 655	Basic Statistical Methods for Bioinformatics	3
PHMS 641	Data Mining I	3
Various electives ²		3
Hours		12
Minimum Total Hours		30

¹ PHPH 523 fulfills the accreditation requirement that all graduates from the School of Public Health and Information Science receive foundational instruction in public health. The three (3) credit hours for PHPH 523 do not accrue toward the 30 credit hours required for MS degree completion. Students with a prior degree and/or coursework from a CEPH accredited school or program of public health may be relieved of this requirement, per approval of the Associate Dean for Academic Affairs.

² Students must accumulate a minimum of six (6) credit hours of electives. These may be distributed among semesters as the student chooses. Electives are chosen with the approval of a faculty advisor. Students are encouraged to select electives from among the following courses:

Bioinformatics Concentration Electives

Code	Title	Hours
PHST 603	Biostatistics Public Health Practicum I	1-2
PHST 620	Introduction to Statistical Computing	3
PHST 675	Independent Study in Biostatistics	1-3
PHST 682	Multivariate Statistical Analysis	3
PHST 684	Categorical Data Analysis	3
BIOC 547	Advanced Biochemistry II	3
BIOC 603	Special Topics in Biochemistry	1-4

Thesis Option (Standard Curriculum)

The curriculum for the thesis option of the MS degree consists of additional thesis hours beyond the completion of the curriculum for the standard program. Students must declare to enroll in the thesis option at the completion of the spring semester of the first year for full-time students (the completion of at least 19 credit hours for part time students). Only after completion of the required 30 credit hours of coursework in the standard program curriculum, students electing the thesis option enroll for a minimum of six (6) credit hours of thesis

research (PHST 666) in the spring semester of the second year, and typically write and defend a thesis by the end of that semester.

Year 2		Hours
Spring		
PHST 666	Master's Thesis Research ¹	6
Hours		6
Minimum Total Hours		6

¹ Students wishing to maintain full-time status may register for more than six (6) credit hours of thesis or additional coursework.

Thesis

A student may apply to pursue preparation and defense of a master's thesis following completion of the required standard program coursework. Pursuing an optional thesis requires permission of the program director. The thesis topic is approved by the major professor and thesis committee, chaired by the major professor. The student identifies a desired mentor to become his or her major professor, who is recommended by the program director and appointed by the academic dean. The major professor (or at least one when there are co-major professors) must be from the Department of Bioinformatics and Biostatistics. Following appointment, the major professor becomes the student's faculty advisor. Procedures for the thesis are given below.

Thesis Committee

Working with the major professor, the student identifies at least two or more additional desired committee members. Including the major professor, at least two members of the committee must be faculty in the Department of Bioinformatics and Biostatistics and at least one member must be from outside the department. The committee members are then recommended by the program director and appointed by the academic dean.

Thesis Preparation

The thesis is prepared in format according to the guidelines (<http://louisville.edu/graduate/current-students/thesis-dissertation-information/>) established by the Graduate School. It is the responsibility of each student to ensure that the readability and quality of writing in his/her thesis meets professional standards. Students are strongly encouraged to take advantage of the services offered by the University Writing Center (<http://louisville.edu/writingcenter/>) when writing their theses. The services offered by the Writing Center are free to the student.

Thesis Approval

Final approval of the thesis is voted upon by the thesis committee after an oral defense of the thesis by the student. Students submit their theses to members of their committee two or more weeks prior to the date of the oral defense. Approval of the thesis is by majority vote of the committee after the oral defense.

Students are required by the Graduate School to provide two weeks' notice when scheduling oral defenses (<http://louisville.edu/graduate/current-students/thesis-dissertation-information/>). This requirement permits those wanting to attend the oral defense adequate time to make arrangements for attending. Students must follow the below procedure for scheduling oral defenses:

- Identify a date and time for the oral defense in consultation with the thesis advisor and members of the committee.

- Request a room reservation for the oral defense through the Department's Administrative Assistant.
- Notify the Department's Administrative Assistant of the date, time, and location of the oral defense as well as the title of the thesis. The Department's Administrative Assistant will circulate an announcement of the defense as well as notify the SPHIS Office of Student Services of the defense, who in turn notify Graduate School.
- Distribute technically and grammatically error-free copies of the thesis to all committee members at least two weeks prior to the defense date.

There are no exceptions to these requirements and students will not be permitted by the Department to schedule defenses with less than two weeks' notice. Students are expected to be aware of university deadlines for theses (<http://louisville.edu/graduate/current-students/thesis-dissertation-information/>) and to ensure that the two weeks' notice requirement is fulfilled within these university deadlines. Students are strongly encouraged to allow for even greater than two weeks' notice to ensure that all deadlines and requirements are fulfilled.

Thesis Submission

The following steps must be taken to submit the final copy of the thesis electronically after oral defense and approval of the committee:

- Final document must be converted to a PDF (following the guidelines as noted above) and sent to the Graduate School and the department's administrative assistant.
- Submit as advised by the Graduate School through the ThinkIR repository. The directions on submission will be provided upon review of the thesis by the Graduate School.
- The signature page within the electronic version must have the names of the committee members typed under the signature line; the signatures cannot be scanned into the document.
- Submit a signed signature page (digital/electronic signature page (<http://louisville.edu/graduate/current-students/thesis-dissertation-information/ElectronicDissertationSignaturePage.pdf>) or a hard copy on white paper, with original signatures) to the Graduate School.

An electronic copy of the thesis must be provided to the Department's Administrative Assistant.

Biostatistics (PhD)

Doctor of Philosophy in Biostatistics

Unit: School of Public Health and Information Sciences (<https://louisville.edu/sphis/>) (GH)

Department: Bioinformatics and Biostatistics (<http://louisville.edu/sphis/departments/bioinformatics-biostatistics/>)

Program Webpage (<http://louisville.edu/sphis/departments/bioinformatics-biostatistics/academics/phd/>)

Academic Plan Code(s): BDSCPHD

Program Information

Introduction

Biostatistics involves the development and application of statistical techniques to scientific research in health-related fields, including medicine, epidemiology, and public health. Students in the PhD program receive state-of-the-art training in the latest statistical methodology in order to tackle the challenges associated with the study design and data analysis of modern research conducted in the health sciences. The PhD

program provides advanced training in biostatistical theory and methods, with the goal of enabling the student to carry out original research. In addition, students may elect to train with an emphasis in bioinformatics.

Bioinformatics requires the development and application of statistical methods for many of the areas covered by the field, including genomics, proteomics, statistical genetics, and metabolomics. Current biomedical research technologies generate high volumes of data that require extension of existing statistical methodologies and development of new methodologies in order to extract important information regarding biological processes. The emphasis on bioinformatics is designed to fulfill the expanding need for biostatisticians with advanced training in this area. Students in the bioinformatics emphasis gain a basic understanding of molecular and cellular biology, genetics, and bioinformatics and an in-depth knowledge of statistical theory and methods. Graduates are able to carry out original statistical research in genomics, proteomics, metabolomics, and evolving areas of systems biology.

Students who complete the MS program in biostatistics with the Department of Bioinformatics and Biostatistics or who already possess the equivalent of an MS in statistics, biostatistics, or a related discipline may apply for admission to the PhD program.

Competencies

To graduate, a student must demonstrate mastery of the following core competencies*:

Competency	CE	SCP	Dsrt	CW
Thoroughly understand the broad discipline of biostatistics, including its theoretical underpinnings, its history of development, current applications, and areas of active inquiry	X		X	X
Thoroughly review and critique statistical methods literature.			X	
Conduct statistical analyses and data management using standard statistical software such as SAS, R, and SPSS.	X	X	X	X

Analyze research data using linear models and other appropriate statistical methods	X	X		X
Read, interpret, and review biomedical literature where biostatistical techniques are used.			X	
Advance the field of biostatistics through original and independent research			X	

Students are also expected to develop the following additional emphasis-specific proficiencies. These proficiencies may vary dependent upon a student's individualized course of study:

Biostatistics Emphasis:

Competency	CE	SCP	Dsrt	CW
Analyze dichotomous, count, and time-to-event data using appropriate statistical methods, including logistic regression, log-linear models, Kaplan-Meier curves, and Cox proportional hazards models				X

Assist researchers in planning research studies, proposing and evaluating statistical methods and computing power analyses	X			X
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Bioinformatics Emphasis:

Competency	CE	SCP	Dsrt	CW
Analyze high-throughput, biological data, such as those obtained from microarrays and next generation sequencing technologies, with statistical models specifically geared to the data issues associated with these platforms.			X	X
Retrieve and leverage various types of biological information from online repositories			X	X

Apply models that use the knowledge and basic principles of molecular biology, especially the structure and functions of DNA, RNA, proteins and their inter-relationships to address important biological questions based on genomic and proteomic data

*Key for demonstration (method):

- CE = Comprehensive examinations
- SCP = Statistical consulting practicum
- Dsrt = Dissertation
- CW = Coursework

Curriculum

The curriculum consists of a minimum of 34 credit hours of coursework, a comprehensive examination, and a doctoral dissertation. The student is eligible to sit for comprehensive examinations upon completion of required coursework. Upon passing the comprehensive examination and completing required and elective coursework, the student enters candidacy to work on the dissertation. After the dissertation is submitted and approved, including an oral defense, the student is eligible to receive the PhD degree in Biostatistics.

Award of degree from an accredited school of public health requires successful completion of the equivalent of three (3) credit hours of instruction that provides students a broad introduction to public health.

The course PHPH 523 Public Health in the United States fulfills this requirement. The three (3) credit hours for PHPH 523 do not accrue toward the 34 credit hours required for PhD degree completion. Students with a prior degree from a CEPH accredited school or program of public health may be relieved of this requirement, per approval of the Associate Dean for Academic Affairs.

Faculty Advisor

Upon admission to the PhD program, each student is assigned to the graduate coordinator of the PhD program for course advising. The graduate coordinator assumes the role of faculty advisor until the student chooses a dissertation advisor at which point this responsibility shifts to the dissertation advisor. If it becomes clear that a PhD student will be working with a given faculty member prior to forming a dissertation committee, the student may request a change in course advisor by completing the form *Request to Change Academic Advisor*.

Program of Study

Upon admission to the PhD program, a program of study is developed for each student by the faculty advisor and approved by the program director and department chair. Students who did not complete the MS program in Biostatistics with the Department of Bioinformatics and Biostatistics may be required to complete additional coursework normally offered in the MS program. Decisions regarding additional coursework are made by the student's assigned faculty advisor and such courses become part of the program of study. This approach gives maximum flexibility for addressing differing student qualifications and interests.

Application Requirements

The PhD program is available to students who are entering from the MS program or to students entering with a master's degree in biostatistics, statistics, decision science, or a related discipline.

The following are additionally required for admission:

- Graduate application (<http://louisville.edu/graduate/apply/>)
- Non-refundable application fee
- At least two letters of recommendation written within past twelve months, which may be submitted with the Graduate application (<http://louisville.edu/graduate/apply/>)
- GRE Scores are required and are considered in the context of other required components of the application. Students who have been successful in our programs in the past typically have a median [Q1, Q3] GRE Quantitative score at the 87th percentile.
- All postsecondary transcripts (may require foreign credential evaluation if not from an accredited U.S. institution)
- Statement of goals, including the desired emphasis, if any.
- International students for whom English is not their primary language must show English language proficiency by one of the following:
 - TOEFL examination score at or above 550 (paper based test and a 5.0 on the TWE test), 213 (computer based test), 79 (internet based test)
 - IELTS test score of 6.5 or higher
 - Duolingo test score of 105 or higher
 - ECFMG (Educational Commission for Foreign Medical Graduates) certification
 - Successfully passing the exit examination for the advanced level of an Intensive English as a Second Language Program
 - Demonstration of a degree awarded from an institution with instruction primarily in English, as formally documented by an appropriate institutional official

Application Deadline

Fall semester – Applications are accepted on a rolling basis.

Domestic student are encouraged to apply no later than 30 days prior to the start of the fall semester.

International students encouraged to apply no later than 120 days prior to the start of the fall semester.

Spring semester – Applications are not accepted.

Summer semester – Applications are not accepted.

Program Requirements

Completion of the required coursework is the prelude to sitting for the comprehensive examination. Successful completion of the comprehensive examination allows the student to enter doctoral candidacy. A doctoral candidate must then develop and successfully defend a dissertation proposal that describes an original and independent research project. Upon successful defense of the proposal, a student may then proceed to continue dissertation research. Upon successful completion of the research, defense of the dissertation, and demonstration of the required competencies, a student is awarded the PhD degree.

Coursework

34 total credit hours

12 credit hours of required core coursework

22 credit hours of elective courses (vary based on area of emphasis)

Code	Title	Hours
Required Coursework (12 credit hours)		
PHST 691	Bayesian Inference and Decision	3
PHST 710	Advanced Statistical Computing I	3
PHST 762	Advanced Statistical Inference	3
PHST 781	Advanced Linear Models	3
Recommended Elective Coursework (22 credit hours)		
<i>No Emphasis</i>		
PHST 703	Biostatistical Consulting Practicum	1
PHST 724	Advanced Clinical Trials	3
PHST 780	Advanced Nonparametrics	3
PHST 782	Generalized Linear Models	3
PHST 783	Advanced Survival Analysis	3
Additional Electives (see list below)		9
<i>Bioinformatics specialization</i>		
PHST 703	Biostatistical Consulting Practicum	1
PHST 750	Statistics for Bioinformatics	3
PHST 751	High-throughout Data Analysis	3
PHST 752	Statistical Genetics	3
CSE 660	Introduction to Bioinformatics	3
BIOC 545	Biochemistry I	3
Additional Electives (see list below)		6

The student may be required to take one or more prerequisite courses for a required course if the student does not meet the prerequisites. These prerequisite courses become part of the program of study but are in addition to the number of coursework credit hours presented above.

Electives

The six to nine (6-9) credit hours of Additional Electives listed in the table on the previous page must be taken from the following lists. The student's program of study specifies the particular courses permitted to be taken.

No Emphasis

Code	Title	Hours
PHST 675	Independent Study in Biostatistics	1-3
PHST 682	Multivariate Statistical Analysis	3

PHST 704	Mixed Effect Models and Longitudinal Data Analysis	3
PHST 711	Advanced Statistical Computing II	3
PHST 750	Statistics for Bioinformatics	3
PHST 751	High-throughput Data Analysis	3
PHST 752	Statistical Genetics	3

Bioinformatics specialization

Code	Title	Hours
PHST 675	Independent Study in Biostatistics	1-3
PHST 682	Multivariate Statistical Analysis	3
PHST 704	Mixed Effect Models and Longitudinal Data Analysis	3
PHST 711	Advanced Statistical Computing II	3
PHST 780	Advanced Nonparametrics	3
PHST 782	Generalized Linear Models	3
CSE 632	Data Mining	3

The student may be required to take one or more prerequisite courses for an elective course if the student does not meet the prerequisites. These prerequisite courses become part of the program of study but are in addition to the number of coursework credit hours presented above. Enrollment in other courses such as PHPH 701 may be required to maintain academic status for funding purposes.

Sample Program of Study Year 1 No Emphasis

Fall		Hours
PHST 710	Advanced Statistical Computing I	3
PHST 762	Advanced Statistical Inference	3
PHST 781	Advanced Linear Models	3
Hours		9
Spring		Hours
PHST 691	Bayesian Inference and Decision	3
Select two of the following:		6
PHST 724	Advanced Clinical Trials	
PHST 780	Advanced Nonparametrics	
PHST 782	Generalized Linear Models	
PHST 783	Advanced Survival Analysis	
Hours		9
Summer		Hours
PHST 703	Biostatistical Consulting Practicum	1
Hours		1
Minimum Total Hours		19

Sample Program of Study Year 1, Bioinformatics specialization

Fall		Hours
PHST 710	Advanced Statistical Computing I	3
PHST 762	Advanced Statistical Inference	3
PHST 781	Advanced Linear Models	3
Hours		9
Spring		Hours
PHST 691	Bayesian Inference and Decision	3
Select two of the following:		6

PHST 750	Statistics for Bioinformatics	
PHST 752	Statistical Genetics	
CSE 660	Introduction to Bioinformatics	
BIOC 545	Biochemistry I	
Hours		9
Summer		Hours
PHST 703	Biostatistical Consulting Practicum	1
Hours		1
Minimum Total Hours		19

All pre-candidacy PhD students on support of any kind (Fellowship, GRA, TA, Hourly) must be enrolled in the Department's seminar course (PHST 602) for one (1) credit hour during semesters they are supported.

Comprehensive Examination

Prior to the beginning of the student's second year in the PhD program, he/she will take a written Comprehensive Examination. The objective of this examination is for the student to demonstrate a comprehensive knowledge of statistical theory and methods as learned in the courses taken during the first year in the program. This examination is given over two consecutive days shortly before the start of the fall semester. Students will be notified of the dates and location at least one month in advance. Students must have passed PHST 691, PHST 710, PHST 762, and PHST 781 before they may take the comprehensive examination.

The examination will consist of four sections, each corresponding to one of the required courses (PHST 710, PHST 762, PHST 781, PHST 691) and each given individually. Each section is designed to test the student's competency in a core area of the discipline and to assess his/her ability to apply this knowledge to solve new and/or complex problems.

- The Statistical Inference (PHST 762) section will be a two-hour written examination given in the morning of the first day.
- The Computing section (PHST 710) will be a three-hour computing examination given in the afternoon of the first day.
- The Linear Models (PHST 781) section will be a two-hour written examination given in the morning of the second day.
- The Bayesian Inference section (PHST 691) will be a 90-minute written examination and a two-hour computing exam, both given in the afternoon of the second day.

Material from courses corresponding to each section of the comprehensive exam will help students prepare for those sections. However, questions from any sources may appear that cover the same topics as listed in the syllabi of PHST 691, PHST 710, PHST 762, and PHST 781. Further, problems on the Computing section of the exam may draw on topics covered in PHST 691, PHST 762, and PHST 781.

Each student receives a grade of either "pass" or "fail" for the entire comprehensive examination and each student must pass all four sections of the comprehensive examination to receive a "pass". Students that pass the exam will be eligible to enter doctoral candidacy upon completion of the remaining, second-year coursework. A failing grade indicates a deficiency in one or more areas, and a student with a grade of "fail" will have one opportunity to retake the full Comprehensive Examination (all four sections), typically in the following January. The results from a student's first attempt at the comprehensive exam will not be considered in the grading of the second attempt and will not factor into the determination of a pass or fail score for the second attempt at the exam. Students that fail to pass the examination on their

second attempt will be dismissed from the program without any further consideration.

Neither scores nor graded copies of completed examinations will be shared with students. Students may review ungraded copies of their own completed comprehensive exams with the exam graders. The ungraded, completed copies will be held in the department office. Students will not be permitted to keep ungraded copies of the completed comprehensive exams.

Special Notes on the Comprehensive Exam

- For all the exams, the students will not have access to any course books, notes or any other materials (paper or electronic copies)
- Students will write programs and run code in the Bayesian and non-Bayesian computing examinations. These examinations will be given either in a computer lab in the SPHIS building or the students will be required to bring their own laptop to run the programs.
- The only materials which can be consulted for the computing portions of the examinations are R help menus locally available on the specific computer. Students will be asked ahead of time to upload all R packages needed to appear for the exam. Students will not be allowed to avail the internet by any means.
- Any suspected cheating on the Comprehensive Examination will be addressed according to university policies provided in Section 5 of Dean of Students document, Students Rights and Responsibilities (<https://louisville.edu/dos/students/studentrightsandresponsibilities/>). Additionally, students found guilty of academic dishonesty on the Comprehensive Examination will be expelled from the PhD program immediately.
- More than one faculty members will grade all the examinations.

Dissertation

In order to complete the degree, a candidate must submit and successfully defend a dissertation on a topic approved by his or her major professor and the dissertation committee. Dissertation work may be started following successful completion of doctoral comprehensive examinations.

Dissertation Committee

The dissertation committee is formed by the candidate's proposing a major professor (or principal advisor) and at least four other committee members. The major professor (or at least one when there are co-major professors) must be from the Department of Bioinformatics and Biostatistics. One member of the dissertation committee must be external to the Department of Bioinformatics and Biostatistics. The committee is appointed by the dean of the school upon the recommendation of the program director and chair of the department.

Dissertation Proposal (Pre-Dissertation Essay)

A dissertation proposal or pre-dissertation essay is submitted to the major professor and the dissertation committee. Students must make an oral presentation of the proposal to the dissertation committee, after which the members of the committee vote upon approval of the proposal. The proposal must be approved by a majority vote of the dissertation committee before the candidate undertakes further work on the dissertation.

The dissertation proposal document will include a general overview of the selected research project/projects, and discuss the relevant literature. It will also contain a detailed description of the project(s), describing both the research that the students have already accomplished and that which remains. In most cases, this will take the form of one or more chapters corresponding to preliminary or submitted academic manuscripts. There are no formal formatting requirements for the dissertation proposal, although students are encouraged to use the formatting specifications required of the dissertation.

Data Application

All dissertations must include analysis of at least one real data set. This may be in the context of demonstrating new statistical methodology in a real application. Students are expected to explore the relevant scientific literature to provide the appropriate context for the results of the data analysis.

Dissertation Preparation

The dissertation is to be prepared in format according to the guidelines established by the Graduate School (<http://louisville.edu/graduate/current-students/thesis-dissertation-information/>). It is the responsibility of each student to ensure that the readability and quality of writing in his/her thesis meets professional standards. Students are strongly encouraged to take advantage of the services offered by the University Writing Center (<http://louisville.edu/writingcenter/>) when writing their dissertation. The services offered by the Writing Center are free to the student.

Dissertation Approval

Final approval of the dissertation is voted upon by the dissertation committee after an oral defense of the dissertation by the student. Students submit their dissertations to members of their committee two or more weeks prior to the date of the oral defense. Approval of the dissertation is by a majority vote of the committee after the oral defense.

Students are required by the Graduate School to provide two weeks' notice when scheduling oral defenses (<http://louisville.edu/graduate/current-students/thesis-dissertation-information/>). This requirement permits those wanting to attend the oral defense adequate time to make arrangements for attending. Students must follow the below procedure for scheduling oral defenses:

- a. Identify a date and time for the oral defense in consultation with the dissertation advisor and members of the committee.
- b. Request a room reservation for the oral defense through the Department's Administrative Assistant.
- c. Notify the Department's Administrative Assistant of the date, time, and location of the oral defense as well as the title of the dissertation. The Department's Administrative Assistant will circulate an announcement of the defense as well as notify the SPHIS Office of Student Services of the defense, who in turn will notify the Graduate School.
- d. Distribute technically and grammatically error-free copies of the dissertation to all committee members at least two weeks prior to the defense date.

There are no exceptions to these requirements and students will not be permitted by the Department to schedule defenses with less than 2 weeks' notice. Students are expected to be aware of university deadlines for dissertations (<http://louisville.edu/graduate/current-students/thesis-dissertation-information/>) and to ensure that the two weeks' notice requirement is fulfilled within these university deadlines. Students are

strongly encouraged to allow for even greater than two weeks' notice to ensure that all deadlines and requirements are fulfilled.

Dissertation Submission

The following steps must be taken to submit the final copy of the dissertation electronically after oral defense and approval of the committee:

- Final document must be converted to a PDF (following the guidelines as noted above) and sent to the Graduate School and the department's administrative assistant.
- Submit as advised by the Graduate School through the ThinkIR repository. The directions on submission will be provided upon review of the dissertation by the Graduate School.
- The signature page within the electronic version must have the names of your committee members typed under the signature line; the signatures cannot be scanned into the document.
- Submit a signed signature page (digital/electronic signature page (<http://louisville.edu/graduate/current-students/thesis-dissertation-information/ElectronicDissertationSignaturePage.pdf>) or a hard copy on white paper, with original signatures) to the Graduate School.

An electronic copy of the dissertation must be provided to the Department's Administrative Assistant.

Applying for a Degree

Students are responsible for completing an "Application for Degree" form at the beginning of the semester in which they will defend their thesis or dissertation. Students may apply for their degree via ULink. The steps are as follows:

- Log on to your ULink account.
- Go to Student Services Page.
- Scroll down and on the right of the screen you will find a column labeled "Registration".
- Under Registration click on the Degree Application link.
- Follow the Prompts to complete your application for degree. Once completed, you will receive an e-mail confirmation of submission in your University e-mail.

Future deadline dates can be found on the Graduate Academic calendar (<http://louisville.edu/calendars/academic/undergrad-grad/>).

For any questions or concerns students might have during the semester in which they plan to graduate, students' best resource is the Graduate School. The Department of Bioinformatics and Biostatistics faculty and staff are also here to advise and assist you with any questions you might have.

Business Administration (MBA)

Master of Business Administration

Unit: College of Business (<http://business.louisville.edu/>) (GB)
Department: Business (<http://business.louisville.edu/uoflmba/>)
Program Website (<https://business.louisville.edu/learnmore/uoflmba/>)

Academic Plan Code(s): BA_MBA

Program Information

This program can be completed in a traditional classroom format or entirely online (<http://louisville.edu/online/programs/masters/master-of-business-administration/>).

The College of Business Master of Business Administration at the University of Louisville is offered in multiple formats:

- Full-time MBA
- Professional (Part-time) MBA
- Innovative (Entrepreneurship) MBA
- Executive MBA - *The Executive MBA program is not currently accepting applications for admission.*
- Global MBA
- Online MBA

Admission to MBA programs is highly competitive. All Master of Business Administration programs require completion of an undergraduate degree. GMATs are required; however, GMAT waivers are available. Letters of reference requirements vary by program.

All programs are cohort-based, vary in duration between 13 and 20 months, and vary in credit hour requirements between 45 and 48.

Admission Requirements

Below is a checklist intended to help with the admissions process. It is recommended that your application be submitted within 30 days of creating your account.

Contact the University of Louisville MBA Office with any questions via telephone (502) 852-7257 or email mba@louisville.edu.

Application Checklist

- **Create application account**

Visit UofLMBA.com (<http://business.louisville.edu/uoflmba/>) and click "APPLY NOW."

- **Two letters of recommendation**

Within the application, submit names and email addresses of your recommenders. They will receive an email invitation on your behalf. Your recommenders should speak to your character, academic aptitude, etc.

- **Professional resume**

Within the application, upload your resume.

- **Personal statement**

Within the application, attach a 1-2 page Word document describing your interest in the UofL MBA program, why you selected the University of Louisville, your short and long term goals and any additional information you feel is relevant.

- **Submit and pay application fee**

- **Official college transcript(s)**

Order an official college transcript from all colleges attended, including the degree granting institution.

Mail transcripts to:

College of Business, MBA Office

University of Louisville

Louisville, KY 40292

E-Transcripts will be accepted from the institution only. Have these sent to mba@louisville.edu.

• **Graduate Management Admission Test (GMAT)**

The GMAT is optional. However, the admissions application includes a field in which you may provide your GMAT test date and/or scores. We will also accept GRE scores, although they are also optional.

International Applicants

We welcome all international applicants. Please be aware that there are documents required from international applicants that are in addition to the above list.

Visit business.louisville.edu/academics-programs/graduate-programs/apply/ (<https://business.louisville.edu/academics-programs/graduate-programs/apply/>) and open the International Applicant Checklist

Full-time Master of Business Administration

The Full-time MBA is a 13-month cohort based program with two tracks: an internship track and a non-internship track (both are 45 credit hours in duration).

Application requirements include: an undergraduate degree (with official university transcripts); a GMAT or GRE test result (waivers are available), two letters of reference, and an application fee. Please contact the College of Business if you are seeking a dual degree with another University of Louisville college including the School Law, Dentistry, or Medicine. Refer to the web link for information about Graduate Tuition/Program Fee and Costs (<https://business.louisville.edu/academics-programs/graduate-programs/apply/tuition-and-costs/>).

Program Webpage: business.louisville.edu/uoflmba/ (<http://business.louisville.edu/uoflmba/>)

Year 1		
Fall		Hours
MBA 601	Strategic Analysis	1.5
MBA 602	Decision Analysis	1.5
MBA 604	Economics I	1.5
MBA 607	Economics II	1.5
MBA 609	Financial Accounting	1.5
MBA 611	Managerial Accounting I	1.5
MBA 613	Managerial Accounting II	1.5
MBA 612	Finance I	1.5
MBA 608	Technology Management	1.5
MBA 641	Professional Development Module-Team Building	0.5
MBA 649	Professional Development Module-Inclusive Leadership	0.5
MBA 642	Communications	0.5
Hours		15
Spring		Hours
MBA 616	Finance II	1.5
MBA 603	Organizational Behavior	1.5

MBA 617	Marketing I	1.5
MBA 619	Marketing II	1.5
MBA 621	Global Business	1.5
MBA 622	Project Management	1.5
MBA 606	Leadership	1.5
MBA 614	Operations Management	1.5
MBA 624	Strategic Management	1.5
MBA 695	PDM-Crisis Management	0.5
MBA 696	PDM-Negotiation	0.5
MBA 651	Introduction to Business Analytics	1.5
MBA 644	Professional Development Module-Business Etiquette	0.5
Hours		16.5
Summer		
MBA 623	Global Learning	1.5
MBA 680	Special Topics in Business (9 credit hours is required.)	1.0 - 6.0
MBA 699	MBA Internship (spread across multiple semesters or three (3) credit hours in special topics if MBA 699 not completed)	3.0
Hours		5.5-10.5
Minimum Total Hours		37-42

Sequence of courses are subject to change.

Professional (Part-time) Master of Business Administration

The Part-time MBA is a 20-month cohort based 45 credit hour program.

Program fee (<https://business.louisville.edu/academics-programs/graduate-programs/apply/tuition-and-costs/>). Application requirements include an undergraduate degree (with official university transcripts), a GMAT or GRE test result (waivers are available), two letters of reference, and an application fee. Please contact the College of Business if you are seeking a dual degree with another University of Louisville college including the School Law, Dentistry, or Medicine.

Program Webpage: business.louisville.edu/uoflmba/ (<http://business.louisville.edu/uoflmba/>)

Year 1		
Fall		Hours
MBA 601	Strategic Analysis	1.5
MBA 602	Decision Analysis	1.5
MBA 604	Economics I	1.5
MBA 607	Economics II	1.5
MBA 609	Financial Accounting	1.5
MBA 621	Global Business	1.5
MBA 641	Professional Development Module-Team Building	0.5
MBA 642	Communications	0.5
MBA 649	Professional Development Module-Inclusive Leadership	0.5
Hours		10.5
Spring		
MBA 611	Managerial Accounting I	1.5
MBA 612	Finance I	1.5
MBA 613	Managerial Accounting II	1.5
MBA 616	Finance II	1.5
MBA 603	Organizational Behavior	1.5
MBA 606	Leadership	1.5
Hours		9
Summer		
MBA 617	Marketing I	1.5

MBA 619	Marketing II	1.5
MBA 623	Global Learning	1.5
MBA 614	Operations Management	1.5
MBA 608	Technology Management	1.5
Hours		7.5
Year 2		
Fall		
MBA 622	Project Management	1.5
MBA 624	Strategic Management	1.5
MBA 651	Introduction to Business Analytics	1.5
MBA 696	PDM-Negotiation	0.5
MBA 695	PDM-Crisis Management	0.5
MBA 644	Professional Development Module-Business Etiquette	0.5
MBA 670	Capstone Project I	1.5
MBA 671	Capstone Project II	1.5
Hours		9
Spring		
MBA 680	Special Topics in Business (requires total of nine (9) credit hours.)	1-6
Hours		9
Minimum Total Hours		45

¹ Spread multiple semesters

Sequence of courses are subject to change.

Innovation Master of Business Administration

The Innovation (Entrepreneurship) MBA is a full-time program that is 13 months long. It is a cohort based, 45 credit hour program.

Program fee (<https://business.louisville.edu/academics-programs/graduate-programs/apply/tuition-and-costs/>). Application requirements include an undergraduate degree (with official university transcripts), a GMAT or GRE test result (waivers are available), two letters of reference, an interview, and a \$50 application fee. Please contact the College of Business if you are seeking a dual degree with another University of Louisville college including the School Law, Dentistry, or Medicine.

Year 1		Hours
Fall		
MBA 601	Strategic Analysis	1.5
MBA 604	Economics I	1.5
MBA 607	Economics II	1.5
MBA 609	Financial Accounting	1.5
IMBA 615	Opportunity Discovery	1.5
MBA 611	Managerial Accounting I	1.5
MBA 602	Decision Analysis	1.5
MBA 613	Managerial Accounting II	1.5
MBA 612	Finance I	1.5
MBA 641	Professional Development Module-Team Building	0.5
MBA 649	Professional Development Module-Inclusive Leadership	0.5
MBA 642	Communications	0.5
Hours		15
Spring		
MBA 617	Marketing I	1.5
MBA 619	Marketing II	1.5
MBA 616	Finance II	1.5
MBA 622	Project Management	1.5

MBA 603	Organizational Behavior	1.5
IMBA 621	Venture Launch I	1.5
IMBA 631	Venture Launch II	1.5
MBA 606	Leadership	1.5
MBA 651	Introduction to Business Analytics	1.5
MBA 695	PDM-Crisis Management	0.5
MBA 696	PDM-Negotiation	0.5
MBA 621	Global Business	1.5
Hours		16
Summer		
MBA 623	Global Learning	1.5
IMBA 652	Venture Accelerator I	1.5
IMBA 654	Venture Accelerator II	1.5
MBA 680	Special Topics in Business	6
MBA 699	MBA Internship (Spread across three semesters (optional); may be replaced with three (3) credit hours of elective courses)	3
Hours		13.5
Minimum Total Hours		44.5

Sequence of courses are subject to change.

Executive Master of Business Administration

The Executive MBA program is not currently accepting applications for admission.

Global Master of Business Administration

The Global MBA is a 14-month, cohort-based, 45 credit hour program. The first semester consists of a one-month residency at the University of Louisville during the summer. Students study during the fall and spring semesters with our partner Adolf Würth at the Akademie Würth Business School and at Heilbronn University of Applied Science in Germany. Students return to the University of Louisville the following summer for a final one-month residency.

While in Germany, non-Euro residency students are required to enroll in the Master of Science in Business Management degree at Heilbronn University of Applied Science and complete an additional nine (9) credit hours during the fall and spring semesters. Optional paid internships are available. For American and non-Euro residency students, see the University of Louisville program charge (<https://business.louisville.edu/academics-programs/graduate-programs/apply/tuition-and-costs/>). Students are also required to pay 3,949 EUR in tuition and fees to Heilbronn University of Applied Science. Students will be awarded both a University of Louisville MBA and a University of Heilbronn Master of Science in management degree. Admission requirements for the University of Louisville degree include an undergraduate degree, German language skills at the B1 level, transcripts, and two letters of reference.

For German and residents, the program charge is 22,000 EUR. Internships in Germany are not available for German residents and these students are not required to enroll at Heilbronn University of Applied Science. Application requirements for residents of Germany include a completed undergraduate degree, a TOEFL test score (a minimum is applied), two letters of reference, and health insurance covering instructional periods in the United States.

Code	Title	Hours
Summer I		
<i>University of Louisville (United States)</i>		
MBA 690	MBA Fundamentals (MBA Fundamentals)	3.0
MBA 604	Economics I	1.5
MBA 607	Economics II	1.5
MBA 609	Financial Accounting	1.5
MBA 611	Managerial Accounting I	1.5
MBA 613	Managerial Accounting II	1.5
MBA 680	Special Topics in Business (Digital Disruption in Modern Media)	1.5
MBA 680	Special Topics in Business (Design Thinking and Management of Innovation I)	1.5
MBA 680	Special Topics in Business (Big Data and Data Analytics for Managers I)	1.5
Fall/Spring		
<i>Akademie Würth Business School (Germany)</i>		
MBA 655	Strategic Management	3.0
MBA 677	Marketing and Distribution Management	3
MBA 680	Special Topics in Business (Design Thinking and Innovation of Management II)	1.5
MBA 680	Special Topics in Business (Design Thinking and Management of Innovation III)	1.5
MBA 675	Operations Management	3
MBA 678	International Market Development	3
MBA 676	Managerial Finance	3
Summer II		
<i>University of Louisville (United States)</i>		
MBA 603	Organizational Behavior	1.5
MBA 645	Leadership & Ethics	3.0
MBA 680	Special Topics in Business (Big Data and Data Analytics for Managers II)	1.5
IMBA 621	Venture Launch I	1.5
IMBA 622	Venture Strategic Analysis	1.5
IMBA 631	Venture Launch II	1.5
IMBA 632	Venture Finance	1.5
Minimum Total Hours		45

Sequence of courses are subject to change.

Online MBA

The online MBA is comprised of 45 credit hours. Of these, 36 are core (or required) credit hours and nine (9) are elective credit hours. The sequence of courses will vary depending on semester of intake. Please contact the College of Business if you are seeking a dual degree with another University of Louisville college including the School Law, Dentistry, or Medicine.

Sequence of courses is subject to change.

Year 1		
Fall		Hours
MBA 626	Applied Microeconomics for Business	3.0
MBA 631	Introduction to Statistics and Data Analytics	3.0

MBA 668	Information Technology Management in a Digital Economy	3.0
Hours		9
Spring		
MBA 628	Financial Accounting	3.0
MBA 635	Contemporary Financial Management	3.0
MBA 625	Managerial Accounting	3.0
Hours		9
Summer		
MBA 623	Global Learning	1.5
MBA 621	Global Business	1.5
MBA 630	Operations: Design and Analysis	3.0
MBA 640	Marketing Management	3.0
Hours		9
Year 2		
Fall		
MBA 655	Strategic Management	3.0
MBA 656	Leadership and Organizational Behavior	3.0
MBA 632	Strategic Managerial Communication	3.0
Hours		9
Spring		
Electives		
		9
Both MBA electives and College of Business graduate certificate courses count toward the nine (9) credit hours of required electives		
Hours		9
Minimum Total Hours		45

Sequence of courses are subject to change.

Business Analytics (MS)

Master of Science in Business Analytics

Unit: College of Business (<http://business.louisville.edu/>) (GB)

Program Website (<https://business.louisville.edu/msba/degree-details/>)

Academic Plan Code(s): BUANMS, BUANMS_0

Program Information

The Master of Science in Business Analytics (MSBA) is an accelerated, cohort-based 13-month, three-semester program. Students work both in teams and independently in completing the coursework.

The MSBA curriculum combines information systems technologies, data modeling, and analytics with business acumen and impactful communications to develop the skills necessary to become a successful data scientist with excellent potential for professional growth. The program is also designed and delivered in close collaboration with local businesses providing a strong business orientation, increasing your skill relevance in the marketplace upon graduation.

Admission Requirements

- Completion of a graduate application (<http://louisville.edu/graduate/apply/>) along with application fee
- Provision of two letters of reference, a resume, and a personal statement
- Completion of an undergraduate degree along with official transcripts
- GMAT or GRE score: May be waived for applicants with significant work experience in the field of analytics or for applicants with significant academic exposure (e.g., major or minor) in a STEM or technical field

Program Requirements

The Master of Science in Business Analytics (MSBA) program requires a minimum of 30 credit hours for program completion. Currently, 22.5 credit hours are core and 7.5 credit hours are in electives.

Students also may enroll in up to three (3) additional credit hours in Analytics Internship courses spread across the program's three semesters.

Core Courses and Special Topics

Year 1		
Fall		Hours
MSBA 630	Modern Data Management	3.0
MSBA 605	Python for Analytics	3.0
MSBA 610	Data Visualization with Power BI	1.5
MSBA 615	R for Analytics	1.5
MSBA 620	Statistical Foundations of Business Analytics	3.0
Hours		12
Spring		
MSBA 635	Predictive Analytics	3.0
MSBA 645	Applied Machine Learning	3.0
MSBA 650	Advanced Analytical Tools	3.0
MSBA 680	Special Topics in Business Analytics (Elective course)	1.5
Hours		10.5
Summer		
MSBA 685	Analytics Internship (optional, spread across three semesters) ¹	1.0
MSBA 625	Storytelling with Data	1.5
MSBA 680	Special Topics in Business Analytics (Elective course)	6.0
Hours		7.5
Minimum Total Hours		30

Sequence of courses is subject to change.

¹ Optional internship, 1 credit hour per semester completed.

Business of Healthcare (CERT)

This program was approved for students entering the university in the Summer 2023–Spring 2024 catalog year. For more information about catalog year, go to Catalog Year Information (<http://catalog.louisville.edu/archive/2023-2024/undergraduate/university-wide-unit-specific-policies/catalog-year/>).

Graduate Certificate in Business of Healthcare

Unit: College of Business (GB)
Academic Plan Code(s): BUHCCGRO

Program Information

This program is completed entirely online (<https://louisville.edu/online/programs/certificate-programs/online-graduate-certificate-in-business-of-healthcare/>).

The graduate certificate in the Business of Healthcare is a nine (9) credit hour certificate that will train professional care providers with the knowledge and skills necessary to take on management roles in health systems or practices and will prepare MBA students to enter the health care industry. This certificate will cover topics such as health economics, health strategy, accounting and finance, population health, conflict management, building service lines, and health operations. Certificate courses will be offered in an online, asynchronous, five-week format.

Initially, the courses will be offered during the spring semester of each year. This allows for those in the MBA program to earn a certificate in the business of healthcare as part of their MBA electives. This certificate can also be completed independent of an MBA.

Students will be admitted to the certificate program in one of two ways. Those who apply to earn the certificate independent of other degrees must apply to the graduate programs office in the College of Business, have a bachelor's degree from an accredited university, and submit an official transcript certifying a GPA of at least 2.0 in that undergraduate degree. MBA students may also earn the certificate using the elective courses of their MBA degree as long as they are in good standing in their program. To graduate, students must complete the courses of the certificate program with no less than a B in all classes.

Certificate Requirements*

Code	Title	Hours
BOHC 610	Healthcare Strategy	1.5
BOHC 620	Healthcare Systems & Population Health	1.5
BOHC 630	Healthcare Economics	1.5
BOHC 640	Healthcare Operations	1.5
BOHC 650	Business Planning for Healthcare Initiatives	1.5
BOHC 660	Conflict Management & Negotiations in Healthcare	1.5
Minimum Total Hours		9

*BOHC 621 (Healthcare Budgeting & Finance) is also required for students not in an MBA program or having no Finance background.

Certified School Counselor (RANK1)

Rank 1 Program for Certified School Counselor

Unit: College of Education and Human Development (<http://louisville.edu/education/>) (GE)
Department: Counseling and Human Development (<http://louisville.edu/education/departments/ecpy/>)

Program Website (<http://louisville.edu/education/degrees/rank/>)
Academic Plan Code(s): CPS_RK1CSC

Program Information

Rank 1 programs are not degree programs.

Rank 1 programs are planned graduate-level programs designed for Kentucky educators seeking rank change for salary purposes. They are recognized only in the state of Kentucky. By state regulation, Rank 1 status is 60 credit hours of approved graduate credit, including a master's degree.

Admission Requirements

Graduates of the University of Louisville MEd in Counseling and Personnel Services program, with a concentration School Guidance Counseling, are eligible to pursue this Rank 1 program.

Candidates who have completed a master's degree in School Guidance Counseling from other institutions must provide documentation, before applying for admission, that they have completed the requirements leading to the provisional and standard certificates in Kentucky.

Students may apply to the program by first going to the Graduate School (<http://louisville.edu/graduate/apply/>) website. Admission requirements include the following credentials:

- Official transcripts with a GPA of 2.75 in the bachelor's degree and a GPA of 3.0 in the master's degree
- Kentucky certification as a School Counselor
- For international students, TOEFL/IELTS/Duolingo (students holding a baccalaureate or advanced degree from an accredited institution in the U.S. are exempt from this requirement.)

Applicants who have attended a college or university outside of the United States are also required to submit an evaluation of their transcript through either WES (World Education Services) (<http://wes.org/>) or ECE (Educational Credential Evaluators) (<http://ece.org/>). Please note that transcript evaluations can sometimes take several weeks.

Please have transcripts sent to the **Graduate School** (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>).

If transcripts are sent electronically, please have them sent to the following email: gradadm@louisville.edu

Please contact the College of Education and Human Development Graduate Student Services for more information at (502) 852-2628.

Rank 1 Program in Certified School Counseling (P-12)

Code	Title	Hours
Inquiry		
Select one of the following:		
LEAD 600	Introduction to Research Methods and Statistics	3
or EDAP 639	Education Research in P-12 Setting	
Advocacy (Professional Leader)		
<i>Leadership</i>		
Select one of the following:		
ECPY 605	Human Development	3
ECPY 611	Learning Systems: Theory and Practice	
ECPY 640	Assessment Methods for Counselors	
EDAP 677	Developing Collaborative Groups: Facilitating, Coaching and Mentoring	
EDAP 730	Research in Infancy and Early Childhood	
ECPY 650	Group Process and Practice	
<i>Diversity</i>		
Select one of the following:		
EDAP 637	Using Assessment to Improve Student Achievement	3
EDAP 638	Instructional Strategies for Diverse Learners	
EDAP 642	Literacy Learning and Cultural Differences	
EDSP 581	Introduction to Gifted Education	
ECPY 663	Multicultural and Diversity Issues	
Area of Emphasis		
Select at least 12 credit hours; may be chosen from courses above that are NOT taken to meet the Advocacy requirement		12
Electives		
Select 9 credit hours from the following:		9

EDAP 585	Introduction to Educational Technology: Integrating Technology into Instruction	
ECPY 601	Introduction to Clinical Mental Health Counseling	
ECPY 621	Differential Diagnosis and Treatment in Counseling	
ECPY 694	Graduate Seminar in Educational and Counseling Psychology	
ECPY 721	Advanced Counseling Seminar	
EDSP 540	Introduction to Exceptional Children	
EDSP 644	Applied Behavior Analysis	
ECPY 697	Topical Seminar in College Student Personnel Services	
SW 633		
SW 636		
SW 659		
SW 660		
SW 661		
SW 662		
Prior Master's degree in School Counseling ²		30
Minimum Total Hours		60

Exit Requirement

A portfolio is required for successful completion of this program.

Notes

- The candidate for Rank 1 should hold a School Counseling certificate and a master's degree in School Counseling which includes the requirements leading to both provisional and standard licensure.
- The Rank 1 classification shall require the completion of 60 credit hours of approved graduate level credit including a master's degree².
- Candidates will plan the Rank 1 program in consultation with a faculty advisor in the ECPY Department prior to enrolling in Rank 1 courses.
- Of the total number of credit hours on the Rank 1 program, at least 15 credit hours beyond the master's degree must be taken at the University of Louisville. The remaining credit hours may be taken at the University of Louisville, or upon approval of the faculty advisor, at other institutions. There is no stipulation as to recency of completion of Rank 1 credit.
- All coursework for Rank 1 must carry graduate credit, and no less than half must be earned in courses open only to graduate students.
- An academic average of 3.0 is required on the course hours submitted for Rank 1, and no credit will be accepted for courses carrying a grade lower than C.
- The resulting School Counseling certification will include grades P-12.
- A portfolio is required for successful completion of this program.

¹ Independent Study or Directed Readings may be included as approved by faculty advisor; also courses in the Advocacy section may be used here as long as they have NOT been taken in the Advocacy or Area of Emphasis sections

² If the master's degree is more than 30 credit hours, the number of credit hours a student needs to complete Rank 1 may be fewer than 30 additional credit hours.

Chemical Engineering (MEng)

Master of Engineering in Chemical Engineering

Unit: Speed School of Engineering (<https://engineering.louisville.edu/>) (SP)

Department: Chemical Engineering (<https://engineering.louisville.edu/academics/departments/chemical/>)

Academic Plan Code(s): CHE_MEN

Program Information

General Information

The Bachelor of Science in Chemical Engineering degree will provide a student with the basis to be able to complete the Master of Engineering (MEng) in Chemical Engineering degree. The Master of Engineering in Chemical Engineering degree program is accredited by the Engineering Accreditation Commission (EAC) of ABET, www.abet.org (<http://www.abet.org>).

Since the Chemical Engineering MEng is accredited as part of a five-year program with one-year of co-op experience, it is only available for students who have matriculated through the Chemical Engineering bachelor degree program at Speed School. Therefore, students who earn an undergraduate degree at a school or university other than the University of Louisville pursue the MS degree instead of the MEng degree.

Master of Engineering Program Educational Objectives

The purpose of the five-year Master of Engineering Program is to bring together the faculty, staff, and capital resources to meet the following program educational objectives:

- Educate and train graduates with the academic background and practical experiences necessary to function as chemical engineering professionals at an advanced level in a modern, ever-changing world in accordance with the mission of the department
- Produce graduates who demonstrate competence by being selected for employment by high level industrial, academic and government entities
- Provide our graduates with the foundation for the development of a successful career and with the understanding that life-long learning is necessary to this development
- Ensure that our graduates understand the broad societal, ethical and professional issues of the engineering profession

Master of Engineering Student Outcomes

In order to achieve these objectives, the Master of Engineering has the following outcomes set for its graduates. Graduates will demonstrate:

- an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
- an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
- an ability to communicate effectively with a range of audiences
- an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts

- an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
- an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
- an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Residency

All graduate students are expected to make steady and satisfactory progress toward the completion of degrees. A candidate for the Master of Engineering degree who does not register for credit hours must maintain active registration by paying a fee each semester for MEng residency until the degree is awarded (i.e., the candidate must maintain continuous registration, including summer terms, in Graduate Studies). Failure to pay the MEng residency fee will be cause to cancel a student's residency. Students who are not enrolled for a period of more than 12 months will be considered to have withdrawn from the program. In order to be restored to residency, the student must submit a new application, have the recommendation of the department chair, receive the approval of the Associate Dean and pay the fee for each of the semesters during which the residency was void.

Academic Performance

The J.B. Speed School of Engineering has established the following performance policies:

- The minimum grade point average requirement for good standing is 3.00 for all academic work completed while in graduate studies.
- Any student with a cumulative graduate GPA below 3.00 will be placed on academic warning. Students on academic warning are limited to enrollment for thirteen (13) credit hours in a fall or spring semester and seven (7) credit hours for summer terms.

Students who do not bring their cumulative graduate GPA back at or above a 3.00 in the semester immediately following Academic Warning, will be placed on Academic Probation for the next semester of enrollment. Students on probation are limited to enrollment for thirteen (13) credit hours in a fall or spring semester and seven (7) credit hours for summer terms. Any student who remains in academic probation for two consecutive terms may be considered for dismissal from the program.

- Students receiving graduate assistantships (teaching, research or service) shall be provided adequate training and shall be required to understand and adhere to University policies related to these areas. The performance of teaching, research and service duties by such students shall be periodically evaluated. Students with teaching assistantships shall be evaluated annually.
- Students who fail to meet performance goals or who do not meet other requirements as outlined in the admission letter, program requirements or the university catalog may be subject to academic dismissal from their programs.
- A maximum of eight (8) credit hours of graduate level courses taken as an undergraduate may be used to satisfy MEng degree requirements; these courses cannot have been used to also satisfy BS degree requirements.

Degree Requirements

The following degree requirements are mandatory of all master of engineering candidates:

- The program of study must be completed with a 3.00 GPA or better for all graduate courses used to satisfy degree requirements. Additionally, the program of study must be completed with a 3.00 GPA or better for all academic work attempted in graduate studies.
- Master's degree students must take at least 24 credit hours of coursework at the University of Louisville to satisfy the residency requirement for the master's degree. A maximum of six (6) credit hours of graduate credit may be transferred from accredited institutions.
- Students following the thesis option must follow the Procedures and Standards for Master of Engineering Theses.
- The total requirements must be completed within six years after admission into graduate studies. The time limit imposed by the rule may be extended in individual cases upon recommendation of the department chair and approval of the associate dean for academic and student affairs.
- The MEng degree cannot be conferred prior to the BS degree.

Admission Standards

Since the Chemical Engineering MEng is accredited as part of a five-year program with one-year of co-op experience, it is only available for students who have matriculated through the Chemical Engineering bachelor degree program at Speed School.

The application form is available online (<https://engineering.louisville.edu/meng-graduate-application-form/>).

The requirements for admission or readmission to a master of engineering program are:

- Submission of a completed MEng application for the field of specialization in which the student is earning a bachelor degree from the J.B. Speed School of Engineering. Students can be admitted to the MEng program with fewer than thirteen (13) credit hours of BS degree requirements remaining and no later than two years post-conferral of their baccalaureate degree;
- Recommendation by the faculty and chair of the student's department for admission or readmission to graduate studies;
- Cumulative baccalaureate grade point average of 2.75. However, those students with cumulative baccalaureate grade-point averages from 2.50 to 2.75 may be admitted upon petition and approval of the chair and faculty of the department.

A student becomes a candidate for the master of engineering degree upon admission to graduate studies and initial registration as a graduate student.

Program Requirements

The Master of Engineering in Chemical Engineering degree requires the following over and above the Bachelor of Science in Chemical Engineering Degree.

Code	Title	Hours
CHE 595	Master of Engineering Seminar in Chemical Engineering	1

CHE 610	Advanced Thermodynamics	3
CHE 620	Transport Phenomena I	3
CHE 641	Advanced Reactor Design	3
CHE 686	Chemical Engineering Analysis	3
Technical Electives ^{1,2}		12
Select one of the following:		6
Thesis Alternative:		
CHE 697	Master of Engineering Thesis in Chemical Engineering ³	
Non-thesis Alternative:		
CHE 698	Engineering Project Fundamentals I	
CHE 699	Engineering Project Fundamentals II	

Minimum Total Hours 31

The Master of Engineering (MEng) degree must be completed with a 3.00 GPA or better for all graduate courses used to satisfy degree requirements. Additionally, the Master of Engineering degree must be completed with a 3.00 GPA or better for all academic work attempted in Graduate Studies.

A maximum of eight (8) credit hours of graduate level courses taken as an undergraduate may be used to satisfy MEng degree requirements; these courses cannot have been used to also satisfy BS degree requirements.

- Electives must be chosen so that at least one-half of the total credits counted toward the degree, exclusive of thesis, are 600 level.
- Technical Electives can be CHE or non-CHE courses. Non-CHE courses must be approved by the student's research or academic advisor.
- For the thesis alternative, a student is required to select both an approved MEng thesis topic and the director and members of the thesis committee during the first term of Graduate Studies. The thesis director must give approval for enrollment in CHE 697

Chemical Engineering (MS)

Master of Science in Chemical Engineering

Unit: Speed School of Engineering (<https://engineering.louisville.edu>) (GS)

Department: Chemical Engineering (<https://engineering.louisville.edu/academics/departments/chemical/>)

Program Website (<https://engineering.louisville.edu/academics/departments/chemical/>)

Academic Plan Code(s): CHE_MS

Program Information

General Information

The Master of Science (MS) in Chemical Engineering program is intended for persons having an accredited baccalaureate degree in chemical engineering, but also is available to those with other backgrounds. Applicants with other backgrounds should plan on taking additional undergraduate background coursework.

Students interested in the MS degree program should consult the Director of Graduate Studies in the Department of Chemical Engineering.

Degree Requirements

The program of study must be completed with a 3.00 GPA or better for all graduate courses used to satisfy degree requirements. Additionally, the program of study must be completed with a 3.00 GPA or better for all academic work attempted in graduate studies.

The requirements for the Master of Science degree are discussed in more detail in the Degree Requirements (<http://catalog.louisville.edu/archive/2023-2024/graduate/general-policies-procedures-requirements/degree-requirements/>) section of this catalog.

Admission Standards

The admission standards for the Master of Science program in Chemical Engineering are as follows:

- a. All admission applications for the program shall include:
 - i. A completed graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) for the Graduate School,
 - ii. An application fee,
 - iii. At least two letters of recommendation, and
 - iv. Official transcript(s) for all previous post-secondary coursework. All transcripts not in English must be certified as authentic and translated verbatim into English.
- b. The minimum requirement for admission is the baccalaureate degree or its equivalent from an accredited institution.
- c. The successful applicant will typically have an undergraduate grade point average of 3.0 or above (on a 4.00 scale).
- d. International students whose primary language is not English must show English language proficiency by either TOEFL/IELTS/Duolingo score or demonstration of a degree awarded from an acceptable English language institution. The successful applicant will typically have a TOEFL score of 80 or higher or overall IELTS score of 6.5 or higher or a Duolingo score of 105 or higher.

Program Requirements

The minimum curricular requirements for the Master of Science degree program are shown in the table below. For those applicants who, in the opinion of the faculty, do not have a sufficient background, remedial work may be specified.

Code	Title	Hours
CHE 610	Advanced Thermodynamics	3
CHE 620	Transport Phenomena I	3
CHE 641	Advanced Reactor Design	3
CHE 686	Chemical Engineering Analysis	3
CHE 695	Chemical Engineering Seminar	1
Technical Electives ^{1,2}		12
Select one of the following:		6
Thesis Option		
CHE 690	Master of Science Thesis in Chemical Engineering ³	
Non-Thesis Option		
	Technical Electives ^{1,2}	
Minimum Total Hours		31

¹ Electives must be chosen so that at least one-half of the credits counted toward the degree, exclusive of thesis, are 600 level. At

least fifteen (15) credit hours of coursework must be in Chemical Engineering/CHE.

- ² At least three (3) credit hours of Technical Electives must be from non-CHE courses, and the student's research advisor or academic advisor must approve non-CHE courses.
- ³ For the thesis option, a student is required to select both an approved M.S. thesis topic and the director and members of the thesis committee during the first term of Graduate Studies. The thesis director must give approval for enrollment in CHE 690.

The Master of Science degree must be completed with a 3.00 GPA or better for all graduate courses used to satisfy degree requirements. Additionally, the master of science degree must be completed with a 3.00 GPA or better for all academic work attempted in graduate studies.

Chemical Engineering (PhD)

Doctor of Philosophy in Chemical Engineering

Unit: Speed School of Engineering (<https://engineering.louisville.edu>) (GS)

Department: Chemical Engineering (<https://engineering.louisville.edu/academics/departments/chemical/>)

Academic Plan Code(s): CHE_PHD

Program Information

General Information

The PhD degree program is intended for persons having an accredited masters and/or baccalaureate degree in chemical engineering, but is also available to those with other backgrounds. Applicants with other backgrounds should plan on taking some undergraduate background coursework. Students interested in the PhD degree program should consult the Director of Graduate Studies in the Department of Chemical Engineering.

Degree Requirements

The award of a Doctor of Philosophy degree indicates that a student has attained mastery of a field and has demonstrated the capacity to perform independent scholarly research. Candidates for the Doctor of Philosophy degree must have a minimum final cumulative grade point average of 3.00 for all academic coursework attempted in Graduate Studies.

The requirements for the Doctor of Philosophy degree are explained in more detail in the Degree Requirements section (<http://catalog.louisville.edu/archive/2023-2024/graduate/general-policies-procedures-requirements/degree-requirements/>) of this catalog.

Admission Standards

The admission standards for the PhD program in Chemical Engineering are as follows:

- a. All admission applications for the program shall include:
 - i. Completed graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) for the Graduate School
 - ii. Application fee
 - iii. Results from the Graduate Record Examination (GRE)
 - iv. At least two letters of recommendation

- v. Official transcript(s) for all previous post-secondary coursework.

Note: All transcripts not in English must be certified as authentic and translated verbatim into English.

- b. The minimum requirement for admission is the baccalaureate degree or its equivalent from an accredited institution.
- c. The successful applicant will typically have an undergraduate grade point average of 3.00 or above (on a 4.00 scale).
- d. The successful applicant will typically have a GRE combined Verbal and Quantitative Reasoning score of 302 or above.
- e. International students whose primary language is not English must show English language proficiency by either TOEFL/IELTS/Duolingo score or demonstration of a degree awarded from an acceptable English language institution. The successful applicant will typically have a TOEFL score of 80 or higher or overall IELTS score of 6.5 or higher or a Duolingo score of 105 or higher.

Program Requirements

The PhD program in Chemical Engineering is comprised of 54 credit hours beyond the baccalaureate degree in Chemical Engineering. A student entering the PhD program who already has a master's degree in Chemical Engineering may have some of the credit hours for that degree counted towards the 54 credit hours. Remedial work may be specified for applicants who, in the opinion of the faculty, do not have sufficient background.

The normal minimum curricular requirements for the doctoral program are listed below. However, some exceptions are possible at the discretion of the faculty and the Graduate Advisor in unusual situations.

Code	Title	Hours
Courses - Post Baccalaureate		
CHE 610	Advanced Thermodynamics	3
CHE 620	Transport Phenomena I	3
CHE 641	Advanced Reactor Design	3
CHE 686	Chemical Engineering Analysis	3
CHE 695	Chemical Engineering Seminar (Enrollment for three semesters for one (1) credit hour.)	3
Technical Electives ¹		18
CHE 693	Advanced Research in Chemical Engineering (Requires 21 credit hours.) ²	1-15
Minimum Total Hours		54

Candidates for the Doctor of Philosophy degree must have a minimum final cumulative grade point average of 3.00 for all academic coursework attempted in Graduate Studies.

¹ At least three (3) credit hours of Technical Electives must be from non-CHE courses, and the student's research advisor or academic advisor must approve non-CHE courses

² CHE 693 requires a total of 21 credit hours.

Chemistry (MS)

Master of Science in Chemistry

Unit: College of Arts and Sciences (<http://louisville.edu/artsandsciences/intro/>) (GA)

Department: Chemistry (<http://louisville.edu/chemistry/>)

Program Website (<http://louisville.edu/chemistry/academics/graduate-studies/>)

Academic Plan Code(s): CHEMMS

Program Information

The Department of Chemistry, in the College of Arts and Sciences, offers graduate programs leading to the Master of Science (thesis and non-thesis options) and Doctor of Philosophy degrees in chemistry with options in analytical chemistry, biochemistry, biomolecular structure and engineering, inorganic chemistry, organic chemistry, physical chemistry, and chemical physics.

The general requirements for admission to the Graduate School, (<http://catalog.louisville.edu/archive/2023-2024/graduate/application-admission/>) for admission to candidacy, and for the master's degree can be found in specific sections of this catalog. The additional provisions listed below apply to the program leading to the Master of Science in Chemistry.

Program Requirements

The requirements for the Master of Science in Chemistry are as follows:

1. The general requirements as stated in the General Information section of this catalog.
2. Completion of course curriculum as described in the section on program requirements for the PhD degree.
3. Students with a native language other than English must show a proficiency in English. This requirement may be met with a grade of B in ENGL 101 (or equivalent) or an acceptable score on a standardized test (such as the TOEFL, IELTS, Duolingo or Michigan test).
4. Registration in seminar course CHEM 695 for the first three semesters of graduate study and an acceptable presentation of a one-hour literature seminar on a topic of current chemical interest or related to the student's area of research. This seminar must be presented no later than the third semester of graduate studies.
5. Completion of a written MS thesis and an oral defense for the thesis option or completion of an original research proposal (ORP) for the non-thesis option.

Admission Requirements

Students seeking a graduate degree in chemistry should meet the following requirements:

1. Completion of the graduate application (<https://louisville.edu/graduate/futurestudents/apply-materials/application/>) for admission from the Graduate School and application fee.
2. A BA or BS degree in chemistry or in a related field such as physics, engineering, or mathematics. It is expected that students will have obtained a background in chemistry equivalent to 36 credit hours of undergraduate coursework. Students planning to pursue graduate study in chemical physics may substitute some of the chemistry hours with advanced courses in physics or mathematics beyond those required for a BA or BS in chemistry. Students with inadequate preparation will be required to register for specific courses in the area of deficiency. Some of these courses, subject to approval by the department, may be accepted for graduate credit. Admission to graduate study in chemical physics is made on the recommendation of the entrance committee for that option.
3. A minimum quality point standing of 3.0 on a 4.0 scale.
4. Submission of Graduate Record Examination scores (students with successful admission generally obtain quantitative and verbal scores totaling 1000 or more with an analytical score of 2.5 or totaling 900 or

more with an analytical score of 3.0). Graduate Record Examination (GRE) is recommended but not required.

5. Students with a native language other than English must show a proficiency in English. This requirement may be met with a grade of B or better in ENGL 101 (or equivalent) or an acceptable score on a standardized test (such as the TOEFL, IELTS, Duolingo). A B-minus grade in ENGL 101 is unacceptable.

In individual cases, the conditional admission of a student who does not satisfactorily meet the above requirements may be recommended by the department to the Graduate School. If admission is granted, that student will be subject to those conditions specified by the department or Graduate School as being necessary to remedy the conditional admission.

Program Requirements

Master of Science (Thesis) in Chemistry

A minimum of 30 credit hours of graduate credit is required. At least 15 credit hours must be in chemistry courses. An overall GPA of 3.0 must be maintained.

Code	Title	Hours
Chemistry MS - Thesis Option		
CHEM 691	Research	1-15
CHEM 692	Research	1-15
CHEM 695	Seminar ¹	1-3
Research Areas (6 courses from at least 3 of 6 divisions) ²		18-20
Thesis Option		0
Minimum Total Hours		30

¹ Enrollment in the chemistry research course for the first three semesters of graduate study is required.

² Research areas are: Analytical Chemistry, Biochemistry, Inorganic Chemistry, Organic Chemistry, Physical Chemistry, and Physics.

Chemistry Requirements

- a. **Courses:** Students must pass a minimum of six graduate courses from at least three of six divisions (or research areas) with a minimum grade of C in any one course (a C-minus grade is considered unacceptable). The areas are: Analytical Chemistry, Biochemistry, Inorganic Chemistry, Organic Chemistry, Physical Chemistry, and Physics. An overall GPA of 3.0 or greater is required by the Graduate School. In addition, a GPA of 3.0 or greater is required in lecture courses by the department.
- b. **Mentor:** The research mentor must be selected during the first semester. Students are required to interview a minimum of three chemistry faculty (more are recommended) and have them sign the Mentor Selection Form. The student may choose a mentor after obtaining three signatures. If the mentor agrees to accept the student, the mentor will initial the Mentor Selection Form and the student should submit it for final approval by the department Director of Graduate Studies.
- c. **Research:** Research credit will be taken through courses CHEM 691 and CHEM 692 with the graduate mentor listed as the instructor.
- d. **Seminar:** Enrollment in the chemistry research course CHEM 695 for the first three semesters of graduate study is required. The student must present a literature seminar related to their research or on a

topic of current chemical interest in the second or third semester of his/her program (excluding summer).

- e. **Thesis Committee:** The student will select his/her Thesis Committee in consultation with the research mentor during the first three semesters of study. The committee consists of the research mentor, a chemistry faculty in the same division, a chemistry faculty in a different division and a faculty member from a different department. Students must have each committee member sign the Thesis Committee Form and submit it to the chemistry office.
- f. **Publication:** Scientific publication is an important element of graduate education and research. Therefore, it is normally expected that a manuscript based on the student's research would have been submitted to a peer-reviewed journal by the time of his/her thesis defense. The student's contribution must be significant to both the scientific content and the manuscript drafting.
- g. **Thesis:** A written thesis describing the research program is submitted a minimum of seven days before the defense. The defense consists of a seminar open to the public on the thesis project followed by an oral examination with the Thesis Committee.

Master of Science (Non-Thesis) in Chemistry

A minimum total 30 credit hours of graduate credit is required. At least 15 credit hours must be in chemistry courses. An overall GPA of 3.0 must be maintained.

Code	Title	Hours
Chemistry MS - Non-Thesis Option		
CHEM 691	Research	1-15
CHEM 692	Research	1-15
CHEM 695	Seminar	1-3
Research Areas (6 courses from at least 3 of 6 divisions)		18-20
Non-Thesis Option		0
Minimum Total Hours		30

¹ Enrollment in the chemistry research course for the first three semesters of graduate study is required.

² Research areas are: Analytical Chemistry, Biochemistry, Inorganic Chemistry, Organic Chemistry, Physical Chemistry, and Physics.

Note: Students in the PhD program will be awarded an MS degree (non-thesis) after successful completion of the Original Research Proposal and other previous requirements.

Chemistry Requirements

- a. **Courses:** Students must pass a minimum of six graduate courses from at least three of six divisions (or research areas) with a minimum grade of C in any one course (a C-minus grade is considered unacceptable). The areas are: Analytical Chemistry, Biochemistry, Inorganic Chemistry, Organic Chemistry, Physical Chemistry, and Physics. An overall GPA of 3.0 or greater is required by the Graduate School. In addition, a GPA of 3.0 or greater is required in lecture courses by the department.
- b. **Language:** Students with a native language other than English must show a proficiency in English. This requirement may be met with a grade of B in ENGL 101 (or equivalent) or an acceptable score on a standardized test (such as the TOEFL or "Michigan test"). A B-minus in ENGL 101 is considered unacceptable.

- c. **Mentor:** The research mentor must be selected during the first semester. Students are required to interview a minimum of three chemistry faculty (more are recommended) and have them sign the Mentor Selection Form. The student may choose a mentor after obtaining three signatures. If the mentor agrees to accept the student, the mentor will initial the Mentor Selection Form and the student should submit it for final approval by the department Director of Graduate Studies.
- d. **Research:** Research credit will be taken through courses CHEM 691 and CHEM 692 with the graduate mentor listed as the instructor.
- e. **Research Proposal:** The research proposal serves as the capstone project for the non-thesis MS degree. Students must develop, explain, and defend a research proposal. The proposal can be based on recent literature or the student's research project (if applicable). The student's mentor from the chemistry graduate faculty should oversee the proposal committee. The committee consists of the mentor plus two additional chemistry faculty selected by the student in consultation with the mentor.

Chemistry Courses

Code	Title	Hours
Analytical Division		
CHEM 620	Optical Spectrochemical Methods of Analysis	3
CHEM 621	Electroanalytical Chemistry	3
CHEM 622	Analytical Separations	3
CHEM 625	Advanced Analytical Chemistry	3
CHEM 626	Special Topics in Analytical Chemistry	1-3
CHEM 628	Special Topics in Synthesis and Analysis	1
CHEM 630	Advanced Topics in Chemical Analysis	1
Biochemistry Division		
CHEM 645	Advanced Biochemistry I	4
CHEM 647	Advanced Biochemistry II	4
CHEM 648	Systems Biochemistry: Principles and Practices	3
CHEM 681	Modern Biochemistry I	3
CHEM 682	Modern Biochemistry II	3
CHEM 684	Biophysical Chemistry	3
CHEM 685	Special Topics in Biochemistry	1-3
Inorganic Division		
CHEM 550	Group Theory and its Chemical Applications	3
CHEM 653	Main Group Chemistry	3
CHEM 654	Advanced Coordination Chemistry	3
CHEM 655	Special Topics in Inorganic Chemistry	1-3
CHEM 656	Special Topics in Inorganic Chemistry	1-3
CHEM 659	Materials Chemistry and Methods	3
Organic Division		
CHEM 557	Bio-Organic Phenomena	3
CHEM 670	Chemistry of Heterocyclic Compounds and Alkaloids	3
CHEM 671	Advanced Polymer Chemistry	3
CHEM 675	Special Topics in Organic Chemistry	1-3
CHEM 677	Mechanisms and Theory in Organic Chemistry	3
CHEM 678	Advanced Organic Chemistry: General Survey	3
CHEM 679	Advanced Organic Synthesis	3
Physical Chemistry Division		

CHEM 555	Theory and Application of Computational Chemistry	3
CHEM 660	Advanced Physical Chemistry	3
CHEM 661	Chemical Thermodynamics	3
CHEM 665	Special Topics in Physical Chemistry	1-3
CHEM 666	Special Topics in Physical Chemistry	1-3
CHEM 667	Reaction Kinetics	3
CHEM 672	Quantum Chemistry	3
CHEM 684	Biophysical Chemistry	3
CHEM 687	Molecular Spectroscopy	3
Physics		
PHYS 605	Theoretical Mechanics	3
PHYS 611	Electromagnetic Theory I	3

The following courses are not offered by a specific division or are common to all divisions. CHEM 651 and CHEM 652 can count towards the course requirements with approval of the Chemistry Department Director of Graduate Studies.

Code	Title	Hours
CHEM 503	Special Topics in Chemistry	1-3
CHEM 591	Chemistry for Teachers I	3
CHEM 632	Chemical Education	3
CHEM 651	Independent Study	1-3
CHEM 652	Independent Study	1-3
CHEM 688	X-Ray Crystallography and Its Application to Molecular Structure	3
CHEM 691	Research	1-15
CHEM 692	Research	1-15
CHEM 695	Seminar	1-3

Chemistry (PhD)

Doctor of Philosophy in Chemistry

Unit: College of Arts and Sciences (<http://louisville.edu/artsandsciences/intro/>) (GA)

Department: Chemistry (<http://louisville.edu/chemistry/>)

Program Website (<http://louisville.edu/chemistry/academics/graduate-studies/phd/>)

Academic Plan Code(s): CHEMPHD

Program Information

The Department of Chemistry offers graduate programs leading to the MS and PhD degrees in chemistry with options in analytical chemistry, biochemistry, biomolecular structure and engineering, inorganic chemistry, organic chemistry, physical chemistry, and chemical physics.

The general requirements for admission to the Graduate School, for admission to candidacy, and for the doctoral degree are stated in the appropriate sections of this catalog.

Admission Requirements

Students seeking a graduate degree in chemistry should meet the following requirements:

- a. [Completion of the graduate application for admission from the Graduate School and application fee.](#)

- b. A BA or BS degree in chemistry or in a related field such as physics, engineering, or mathematics. It is expected that students will have obtained a background in chemistry equivalent to 36 credit hours of undergraduate coursework. Students planning to pursue graduate study in chemical physics may substitute some of the chemistry hours with advanced courses in physics or mathematics beyond those required for a BA or BS in chemistry. Students with inadequate preparation will be required to register for specific courses in the area of deficiency. Some of these courses, subject to approval by the department, may be accepted for graduate credit. Admission to graduate study in chemical physics is made on the recommendation of the entrance committee for that option.
- c. A minimum quality point standing of 3.0/4.0.
- d. Submission of Graduate Record Examination scores (students with successful admission generally obtain quantitative and verbal scores totaling 1000 or more with an analytical score of 2.5 or totaling 900 or more with an analytical score of 3.0). Graduate Record Examination (GRE) is recommended but not required.
- e. Students with a native language other than English must show a proficiency in English. This requirement may be met with a grade of B or better in ENGL 101 (or equivalent) or an acceptable score on a standardized test (such as the TOEFL, IELTS, Duolingo). A B-minus grade in ENGL 101 is unacceptable.

In individual cases, the conditional admission of a student who does not satisfactorily meet the above requirements may be recommended by the department to the Graduate School. If admission is granted, that student will be subject to those conditions specified by the department or Graduate School as being necessary to remedy the conditional admission.

Program Requirements

A minimum of 30 credit hours of graduate credit is required. At least 15 credit hours must be in chemistry courses. An overall GPA of 3.0 must be maintained. Other master's degree details are included in the Degree Requirements section (<http://catalog.louisville.edu/archive/2023-2024/graduate/general-policies-procedures-requirements/degree-requirements/>) of this catalog.

Coursework

Code	Title	Hours
Chemistry PhD		
CHEM 691	Research	1-15
CHEM 692	Research	1-15
CHEM 695	Seminar ¹	1-3
Research Areas (6 courses from at least 3 of 6 divisions) ²		12-20
Minimum Total Hours		30

¹ Enrollment in the chemistry research course for the first three semesters of graduate study is required.

² Research areas are: Analytical Chemistry, Biochemistry, Inorganic Chemistry, Organic Chemistry, Physical Chemistry, and Physics.

Courses

Students must pass a minimum of six graduate courses from at least three of six divisions (or research areas) with a minimum grade of C in any one course. A C-minus grade is considered unacceptable. The areas are: Analytical Chemistry, Biochemistry, Inorganic Chemistry, Organic Chemistry, Physical Chemistry, and Physics. For every A-minus grade or

better that is received, students with an MS degree may waive one lecture course, up to a maximum of 2 courses.

An overall GPA of 3.0 or greater is required by the Graduate School. In addition, a GPA of 3.0 or greater is required in lecture courses by the department.

Mentor

The research mentor must be selected during the first semester. Students are required to interview a minimum of three chemistry faculty (more are recommended) and have them sign the Mentor Selection Form. The student may choose a mentor after obtaining three signatures. If the mentor agrees to accept the student, the mentor will initial the Mentor Selection Form and the student should submit it for final approval by the department Director of Graduate Studies.

Seminar

Enrollment in the chemistry research course (CHEM 695) for the first three semesters of graduate study is required. The student must present a literature seminar related to their research or on a topic of current chemical interest in the second or third semester of his/her program (excluding summer).

Cumulative Exams

Students must complete a series of written cumulative examinations within their division designed to show broad knowledge in their chosen area. Cumulative exams begin in the second semester and are given the third week of January, February, March, September, October, and November. Each division will write a unique exam each month covering topics from undergraduate course content within that division, graduate-level content from the current and prior semester, and content from the current literature and/or departmental seminars. Exams are scored on a scale of 0–3 points in half-point increments. Students must score 2.0 or higher on at least four exams and accumulate 11 points within their research division by the end of the ninth consecutive exam to qualify for the PhD program. An absence from an exam, unless excused by the Director of Graduate Studies, is scored as 0 and constitutes an attempt.

Research

Research credit will be taken through courses CHEM 691 and CHEM 692 with the graduate mentor listed as the instructor.

Dissertation Committee

The student will select his/her Dissertation Committee in consultation with the research mentor during the first four semesters of study. The committee consists of the research mentor, a chemistry faculty in the same division, a chemistry faculty in a different division, and a faculty member from a different department. Students may add an additional chemistry faculty to the committee if they choose to. Students must have each committee member sign the Dissertation Committee Form and submit it the chemistry office.

Research Proposal (RP)

The research proposal (RP) must be completed by the end of the fifth semester (excluding summers) without exception. If it is not completed within the fifth semester, the student will not be in good standing and may be dismissed from the program. Evaluation of the RP is made by the student's graduate advisory committee (dissertation committee), which is chaired by the research mentor. The RP is intended to demonstrate the student's ability to develop, explain, and defend a research idea that the student plans to conduct in the laboratory or on a completely

original idea if desired. The proposal should present preliminary results from the student's research and/or from the literature and develop one original hypothesis fully with an explanation of experimental details and expected results. The student should show how the hypothesis will be tested experimentally and provide plans for different outcomes. The student should also communicate the importance of the work and how it will provide new fundamental knowledge to the field, a solution to an important problem, or a potential application. Students are expected to demonstrate their originality, innovation and understanding of the scientific process. This requirement includes a written research proposal and an oral presentation/examination. The requirements of each are described below.

Written Research Proposal

The written RP is strictly limited to six pages (single-spaced, 1-inch margins) including figures, but not including references. Treat the written proposal as if you were actually submitting it as part of a job application or for funding. It should clearly and concisely present your proposed research and why it should be funded. This should include a brief summary and introduction to outline the problem, why it is important, and what progress others in the field have made. It should state a hypothesis that your planned work will test and specific aims of the research. The proposal may provide preliminary data from research or literature and should describe what will be done, why this system was selected, how it will be done, what are the expected results, how success will be determined, and what is the impact if successful. The new proposed work should take up the bulk of the written RP (three–four pages). The proposal should be well referenced in the style of a major journal in your field. Carefully proofread your proposal and have a trusted friend proofread it as well. Typos, poor grammar, low-quality graphics, and "simple mistakes" detract from your scientific argument and make the work appear sloppy, disorganized, and of low quality. The written RP is to be revised at least once by the research advisor before being submitted to the committee at least one week prior to the oral presentation/examination. The committee may return unsatisfactory written proposals to the student and delay the oral examination until at least one week after an acceptable rewrite is received.

Oral Presentation/Examination

Treat the oral presentation/examination as if the written RP was submitted with a job application and you were called for an interview to present it. Do not assume that everyone knows the proposal as well as you, they don't. It is your responsibility to present the proposed work in a clear and fluid manner to an audience that is not intimately familiar with your proposal. The presentation should be professional. Expect frequent interruptions during your presentation and be prepared to answer questions on your proposal, techniques related to it, and contributions of others in the field. The oral presentation can be given on PowerPoint, but with no more than 20 slides total (including any supplemental slides). A student failing the oral examination may repeat it only one time, at the discretion of the student's graduate advisory committee.

The MS degree (non-thesis) will be awarded upon successful completion of the research proposal.

Research

Progress in research will be evaluated by the research mentor in consultation with the Dissertation Committee.

Research Seminar

A one (1) credit-hour seminar on the student's dissertation research project is to be given before the end of the eighth semester (excluding

summers). This seminar does not require the student to enroll in CHEM 695, but the student should contact the CHEM 695 instructor to schedule a time and date and for evaluation criteria. The seminar will be judged as pass/fail.

Publications

It is normally expected that prior to the Research Seminar, at least one manuscript based on the student's research would have been submitted to a peer-reviewed journal. The student's contribution must be substantial to both the scientific content and the drafting of the manuscript. At least one research article based on the student's dissertation research must either be published or accepted for publication in a peer-reviewed journal before scheduling the PhD dissertation defense. It is highly recommended that the student distribute the published manuscript(s) and any submitted manuscripts to the members of her/his Dissertation Committee.

Dissertation

A written dissertation describing the research program is submitted a minimum of 14 days before the defense. The defense consists of a one-credit hour seminar followed by an oral examination with the Dissertation Committee.

Chemistry Courses

Code	Title	Hours
Analytical Division		
CHEM 620	Optical Spectrochemical Methods of Analysis	3
CHEM 621	Electroanalytical Chemistry	3
CHEM 622	Analytical Separations	3
CHEM 625	Advanced Analytical Chemistry	3
CHEM 626	Special Topics in Analytical Chemistry	1-3
CHEM 628	Special Topics in Synthesis and Analysis	1
CHEM 630	Advanced Topics in Chemical Analysis	1
Biochemistry Division		
CHEM 645	Advanced Biochemistry I	4
CHEM 647	Advanced Biochemistry II	4
CHEM 648	Systems Biochemistry: Principles and Practices	3
CHEM 681	Modern Biochemistry I	3
CHEM 682	Modern Biochemistry II	3
CHEM 684	Biophysical Chemistry	3
CHEM 685	Special Topics in Biochemistry	1-3
Inorganic Division		
CHEM 550	Group Theory and its Chemical Applications	3
CHEM 653	Main Group Chemistry	3
CHEM 654	Advanced Coordination Chemistry	3
CHEM 655	Special Topics in Inorganic Chemistry	1-3
CHEM 656	Special Topics in Inorganic Chemistry	1-3
CHEM 659	Materials Chemistry and Methods	3
Organic Division		
CHEM 557	Bio-Organic Phenomena	3
CHEM 670	Chemistry of Heterocyclic Compounds and Alkaloids	3
CHEM 671	Advanced Polymer Chemistry	3
CHEM 675	Special Topics in Organic Chemistry	1-3
CHEM 677	Mechanisms and Theory in Organic Chemistry	3
CHEM 678	Advanced Organic Chemistry: General Survey	3

CHEM 679 Advanced Organic Synthesis 3

Physical Chemistry Division

CHEM 555 Theory and Application of Computational Chemistry 3

CHEM 660 Advanced Physical Chemistry 3

CHEM 661 Chemical Thermodynamics 3

CHEM 665 Special Topics in Physical Chemistry 1-3

CHEM 666 Special Topics in Physical Chemistry 1-3

CHEM 667 Reaction Kinetics 3

CHEM 668 Electrochemistry 3

CHEM 672 Quantum Chemistry 3

CHEM 684 Biophysical Chemistry 3

CHEM 687 Molecular Spectroscopy 3

Physics

PHYS 605 Theoretical Mechanics 3

PHYS 611 Electromagnetic Theory I 3

The following courses are not offered by a specific division or are common to all divisions. CHEM 651 and CHEM 652 can count towards the course requirements with approval of the Chemistry Department Director of Graduate Studies.

Code	Title	Hours
CHEM 503	Special Topics in Chemistry	1-3
CHEM 591	Chemistry for Teachers I	3
CHEM 632	Chemical Education	3
CHEM 651	Independent Study	1-3
CHEM 652	Independent Study	1-3
CHEM 688	X-Ray Crystallography and Its Application to Molecular Structure	3
CHEM 691	Research	1-15
CHEM 692	Research	1-15
CHEM 695	Seminar	1-3

Civil Engineering (MEng)



Master of Engineering in Civil Engineering

Unit: Speed School of Engineering (<https://engineering.louisville.edu>) (SP)

Department: Civil and Environmental Engineering (<https://engineering.louisville.edu/academics/departments/civil/>)

Academic Plan Code(s): CE_MEN

Program Information

General Information

The Bachelor of Science in Civil Engineering degree will provide a student with the basis to be able to complete the Master of Engineering (MEng) in Civil Engineering degree. The Master of Engineering in Civil Engineering degree program is accredited by the Engineering Accreditation Commission (EAC) of ABET, www.abet.org (<http://www.abet.org>).

Since the Civil Engineering MEng is accredited as part of a five-year program with one-year of co-op experience, it is only available for students who have matriculated through the Civil Engineering bachelor degree program at Speed School. Therefore, students who earn an undergraduate degree at a school or university other than the University of Louisville pursue the MS degree instead of the MEng degree.

Master of Engineering Program Educational Objectives

The purpose of the five-year Master of Engineering Program is to bring together the faculty, staff, and capital resources to meet the following program educational objectives:

- In accordance with our mission statement, provide instruction and associated activities necessary for our graduates to grow from technical competency to professional proficiency
- Foster an appreciation in our graduates for professional development and life-long learning
- Provide an educational experience that inspires our graduates to exhibit leadership and team-building skills
- Promote service by our graduates to the profession, and to society

Master of Engineering Student Outcomes

In order to achieve these objectives, the Master of Engineering has the following outcomes set for its graduates:

- An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
- An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factor
- An ability to communicate effectively with a range of audiences
- An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
- An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
- An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
- An ability to acquire and apply new knowledge as needed, using appropriate learning strategies

In addition to the above listed outcomes that are integrated to BS CE and MEng CE programs, additional student outcomes for MEng CE program are:

- a. Demonstrate a mastery of one of the four areas (structural engineering, geotechnical engineering, transportation engineering, water resources) of professional practice in civil engineering.
- b. Innovative in the integrated design of civil engineering projects.
- c. Adept at using modern engineering tools and software to support engineering design.

Residency

All graduate students are expected to make steady and satisfactory progress toward the completion of degrees. A candidate for the Master of Engineering degree who does not register for credit hours must maintain active registration by paying a fee each semester for MEng residency until the degree is awarded (i.e., the candidate must maintain continuous registration, including summer terms, in Graduate Studies). Failure to pay the MEng residency fee will be cause to cancel a student's residency. Students who are not enrolled for a period of more than 12 months will be considered to have withdrawn from the program. In order to be restored to residency, the student must submit a new application, have the recommendation of the department chair, receive the approval of the Associate Dean and pay the fee for each of the semesters during which the residency was void.

Academic Performance

The J.B. Speed School of Engineering has established the following performance policies:

- a. The minimum grade point average requirement for good standing is 3.00 for all academic work completed while in graduate studies.
- b. Any student with a cumulative graduate GPA below 3.00 will be placed on academic warning. Students on academic warning are limited to enrollment for thirteen (13) credit hours in a fall or spring semester and seven (7) credit hours for summer terms.

Students who do not bring their cumulative graduate GPA back at or above a 3.00 in the semester immediately following Academic Warning, will be placed on Academic Probation for the next semester of enrollment. Students on probation are limited to enrollment for thirteen (13) credit hours in a fall or spring semester and seven (7) credit hours for summer terms. Any student who remains in academic probation for two consecutive terms may be considered for dismissal from the program.

- c. Students receiving graduate assistantships (teaching, research or service) shall be provided adequate training and shall be required to understand and adhere to University policies related to these areas. The performance of teaching, research and service duties by such students shall be periodically evaluated. Students with teaching assistantships shall be evaluated annually.
- d. Students who fail to meet performance goals or who do not meet other requirements as outlined in the admission letter, program requirements or the university catalog may be subject to academic dismissal from their programs.
- e. A maximum of eight (8) credit hours of graduate level courses taken as an undergraduate may be used to satisfy MEng degree requirements; these courses cannot have been used to also satisfy BS degree requirements.

Degree Requirements

The following degree requirements are mandatory of all master of engineering candidates:

- a. The program of study must be completed with a 3.00 GPA or better for all graduate courses used to satisfy degree requirements. Additionally, the program of study must be completed with a 3.00 GPA or better for all academic work attempted in graduate studies.
- b. Master's degree students must take at least 24 credit hours of coursework at the University of Louisville to satisfy the residency requirement for the master's degree. A maximum of six (6) credit hours of graduate credit may be transferred from accredited institutions.
- c. Students following the thesis option must follow the Procedures and Standards for Master of Engineering Theses.
- d. The total requirements must be completed within six years after admission into graduate studies. The time limit imposed by the rule may be extended in individual cases upon recommendation of the department chair and approval of the associate dean for academic and student affairs.
- e. The MEng degree cannot be conferred prior to the BS degree.

Admission Standards

Since the Civil Engineering MEng is accredited as part of a five-year program with one-year of co-op experience, it is only available for students who have matriculated through the Civil Engineering bachelor degree program at Speed School.

The application form is available online (<https://engineering.louisville.edu/meng-graduate-application-form/>).

The requirements for admission or readmission to a master of engineering program are:

1. Submission of a completed MEng application for the field of specialization in which the student is earning a bachelor degree from the J.B. Speed School of Engineering. Students can be admitted to the MEng program with fewer than thirteen (13) credit hours of BS degree requirements remaining and no later than two years post conferral of their baccalaureate degree;
2. Recommendation by the faculty and chair of the student's department for admission or readmission to graduate studies;
3. Cumulative baccalaureate grade point average of 2.75. However, those students with cumulative baccalaureate grade-point averages from 2.50 to 2.75 may be admitted upon petition and approval of the chair and faculty of the department.

A student becomes a candidate for the master of engineering degree upon admission to graduate studies and initial registration as a graduate student.

Program Requirements

The Master of Engineering in Civil Engineering degree requires the following over and above the Bachelor of Science in Civil Engineering Degree:

MEng Required Coursework

Code	Title	Hours
CEE 680	Civil Engineering Capstone Design	3
CEE Electives ^{1,2}		15
Technical Electives ^{1,3}		6
Select one of the following:		6

Thesis Option

CEE 697	Master of Engineering Thesis in Civil Engineering ⁴
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Non-Thesis Option

CEE Elective ^{1,2}

CEE Elective ^{1,2}

Minimum Total Hours	30
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The Master of Engineering (MEng) degree must be completed with a 3.00 GPA or better for all graduate courses used to satisfy degree requirements. Additionally, the Master of Engineering degree must be completed with a 3.00 GPA or better for all academic work attempted in Graduate Studies.

A maximum of eight (8) credit hours of graduate-level courses taken as an undergraduate may be used to satisfy MEng degree requirements; these courses cannot have been used to also satisfy BS degree requirements.

¹ Electives must be chosen so that at least one-half of the total credits counted toward the degree, exclusive of thesis, are 600-level. All courses must be at the 500 level or higher.

² CEE Electives must be approved by the department.

³ Technical Electives can be CEE or non-CEE courses. Technical Electives must be approved by the department.

⁴ For the thesis option, a student is required to select both an approved MEng thesis topic and the director and members of the thesis committee during the first term of Graduate Studies. The thesis director must give approval for enrollment in CEE 697.

Civil Engineering (MS)

Master of Science in Civil Engineering

Unit: Speed School of Engineering (GS) (<https://engineering.louisville.edu>)

Department: Civil and Environmental Engineering (<https://engineering.louisville.edu/academics/departments/civil/>)

Academic Plan Code(s): CE_ _MS, CE_ _MS_0

Program Information

This program can be completed in a traditional classroom format or entirely online (<http://louisville.edu/online/programs/masters/master-of-science-in-civil-engineering/>).

The Master of Science (MS) degree program is intended for persons having an accredited baccalaureate degree in civil engineering. Students interested in the MS degree program should consult the Director of Graduate Studies in the Department of Civil Engineering.

Degree Requirements

The program of study must be completed with a 3.00 GPA or better for all graduate courses used to satisfy degree requirements. Additionally, the program of study must be completed with a 3.00 GPA or better for all academic work attempted in graduate studies.

The requirements for the Master of Science degree are discussed in more detail in the Degree Requirements (<http://catalog.louisville.edu/archive/2023-2024/graduate/general-policies-procedures-requirements/degree-requirements/>) section of this catalog.

Admission Standards

The admission standards for the Master of Science program in Civil Engineering are as follows:

- a. All admission applications for the program shall include:
 - i. A completed graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) for the Graduate School,
 - ii. An application fee,
 - iii. At least two letters of recommendation, and
 - iv. Official transcript(s) for all previous post-secondary coursework. All transcripts not in English must be certified as authentic and translated verbatim into English.
- b. The minimum requirement for admission is the baccalaureate degree or its equivalent from an accredited institution.
- c. The successful applicant will typically have an undergraduate grade point average of 2.75 or above (on a 4.00 scale).
- d. International students whose primary language is not English must show English language proficiency by either TOEFL/IELTS/Duolingo score or demonstration of a degree awarded from an acceptable English language institution. The successful applicant will typically have a TOEFL score of 80 or higher or overall IELTS score of 6.5 or higher or a Duolingo score of 105 or higher.

Program Requirements

Graduate Work

Remedial work may be specified for those applicants who, in the opinion of the faculty, do not have a sufficient background. The minimum curricular requirements for the master's degree program are:

Code	Title	Hours
CEE Electives ¹		18
Non-CEE Electives ^{1,2}		6
Select one of the following:		6
<i>Thesis Option</i>		
CEE 690	Master of Science Thesis in Civil Engineering ³	
<i>Non-Thesis Option</i>		
Technical Electives ^{1,2}		
Minimum Total Hours		30

The Master of Science degree must be completed with a 3.00 GPA or better for all graduate courses used to satisfy degree requirements. Additionally, the MS degree must be completed with a 3.00 GPA or better for all academic work attempted in graduate studies.

¹ Electives must be chosen so that at least one-half of the credits counted toward the degree, exclusive of thesis, are 600-level; at least fifteen (15) credit hours of coursework must be in CEE

² Technical Electives can be CEE or non-CEE courses. Technical Electives must be approved by the department.

³ For the thesis option, a student is required to select both an approved MS thesis topic and the director and members of the thesis committee during the first term of graduate study. The thesis director must give approval for enrollment in CEE 690.

Civil Engineering (PhD)

Doctor of Philosophy in Civil Engineering (CE PHD)

Unit: Speed School of Engineering (<http://engineering.louisville.edu>) (GS)

Department: Civil and Environmental Engineering (<https://engineering.louisville.edu/academics/departments/civil/>)

Academic Plan Code(s): CE_ _PHD

Program Information

General Information

The PhD degree program is intended for persons having an accredited masters and/or baccalaureate degree in civil engineering, but is available to those with other backgrounds. Applicants with other backgrounds should plan on taking some undergraduate background coursework. Students interested in the PhD degree program should consult the Director of Graduate Studies in the Department of Civil Engineering.

Degree Requirements

The award of a Doctor of Philosophy degree indicates that a student has attained mastery of a field and has demonstrated the capacity to perform independent scholarly research. Candidates for the Doctor of Philosophy degree must have a minimum final cumulative grade point average of 3.00 for all academic coursework attempted in Graduate Studies.

The requirements for the Doctor of Philosophy degree are explained in more detail in the Degree Requirements section (<http://catalog.louisville.edu/archive/2023-2024/graduate/general-policies-procedures-requirements/degree-requirements/>) of this catalog.

Admission Standards

The admission standards for the PhD program in Civil Engineering are as follows:

- a. All admission applications for the program shall include:
 - i. A completed graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) for the Graduate School,
 - ii. An application fee,
 - iii. Results from the Graduate Record Examination (GRE),
 - iv. Statement of Purpose (include intended area of study and/or research interests)
 - v. Resume
 - vi. At least two letters of recommendation, and
 - vii. Official transcript(s) for all previous post-secondary coursework. All transcripts not in English must be certified as authentic and translated verbatim into English.
- b. The minimum requirement for admission is the baccalaureate degree or its equivalent from an accredited institution.
- c. The successful applicant will typically have an undergraduate grade point average of 3.00 or above (on a 4.00 scale).
- d. The successful applicant will typically have a GRE combined Verbal and Quantitative Reasoning score of 295 or above.
- e. International students whose primary language is not English must show English language proficiency by either TOEFL/IELTS/Duolingo score or demonstration of a degree awarded from an acceptable English language institution. The successful applicant will typically have a TOEFL score of 80 or higher or overall IELTS score of 6.5 or higher or a Duolingo score of 105 or higher.

Program Requirements

Normally, it is expected that the student will complete a master's degree before being admitted to the PhD Program. However, qualified applicants may be admitted directly to the doctoral program after receiving a baccalaureate degree. These students will be required to complete an additional 30 credit hours of coursework at the 500 and 600 level under an individual plan developed in conjunction with the department's Director of Graduate Studies. Also, remedial work may be specified for those applicants who, in the opinion of the faculty, do not have a sufficient background.

The minimum curricular requirements for the doctoral program are:

Code	Title	Hours
Courses - Post Bac		
Approved Master's Level Course Work		30
Technical Electives ¹		15
CEE 698	Civil Engineering PhD Seminar	3
CEE 699	Civil Engineering PhD Research	12
Minimum Total Hours		60

Candidates for the Doctor of Philosophy degree must have a minimum final cumulative grade point average of 3.00 for all academic work attempted in Graduate Studies.

¹ Technical electives can be CEE or non-CEE courses. Technical Electives must be approved by the department.

Clinical Investigation Sciences (CERT)

Graduate Certificate in Clinical Investigation Sciences (CISCCCI)

Unit: Public Health and Information Sciences (<http://louisville.edu/sphis/>) (GH)

Department: Clinical Investigation Sciences (<http://louisville.edu/sphis/academics/clinical-investigation-sciences/>)

Program Webpage (<http://louisville.edu/sphis/academics/clinical-investigation-sciences/>)

Academic Plan Code(s): CISCCCI

Program Information

The Certificate in Clinical Investigation Sciences provides individuals with skills required for a career in a clinical research setting. The curriculum integrates biostatistical and epidemiologic methods. Students pursuing the Certificate take didactic courses while they engage in mentored and independent research that culminates in the preparation of a research paper.

The Certificate in Clinical Investigation Sciences requires completion of 15 credit hours.

Competencies

The successful student is able to:

- Address and discuss methods and issues of clinical epidemiology.
- Identify important clinical research questions and state as testable hypotheses.

- Apply the principles of data collection, monitoring, management and analysis within the context of a multidisciplinary team.
- Analyze human subject issues and perform and disseminate clinical research.

It is expected that prior to graduation, students in the program have demonstrated these competencies by completing the curriculum and successfully writing the research paper.

Admission Requirements

Applicants must have completed a baccalaureate degree from an accredited institution with a minimum of 3.0 GPA on a 4.0 scale. Applicants that have had research experience (e.g., research coordinator) or have completed a professional degree (e.g., DMD, DO, MD) are preferred.

The application requirements for programs at the University of Louisville are submitted to the Graduate School and include:

- Formal graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>)
- Curriculum vitae
- Personal statement: a one-page essay that discusses the student's background and his or her long-term goals in clinical research
- Application fee
- A minimum of two letters of recommendation
- Official transcripts of all postsecondary coursework
 - International students' foreign transcripts must be submitted for foreign credential evaluation. This requirement may be waived for foreign students with ECFMG certification.
- Official scores on the Graduate Record Examination (GRE) General Test. This requirement may be waived for applicants who have any of the following:
 - A graduate degree from a U.S. institution
 - ECFMG certification
 - Passed steps 1 and 2 of the USMLE (United States Medical Licensing Examination)
 - Four or more years of clinical research related experience in the U.S. or Canada.
- International students for whom English is not their primary language must show English language proficiency by one of the following:
 - TOEFL examination with a minimum score of 90 (after conversion for test type)
 - IELTS test score of 6.5 or higher
 - Duolingo test score 105 or higher
 - ECFMG (Educational Commission for Foreign Medical Graduates) certification
 - Successfully passing the exit examination for the advanced level of an Intensive English as a Second Language Program
 - Demonstration of a degree awarded from an institution with instruction primarily in English, as formally documented by an appropriate institutional official

For specific information about the degree program or the application process, students should contact Dr. Paul McKinney (mckinney@louisville.edu), Program Director, (502) 852-3019, or Bryan Mathis (bryan.mathis@louisville.edu), Program Coordinator Senior, (502) 852-6263.

Application Deadline

Fall semester - Completed applications and all required application materials are due by August 1. International students are encouraged to apply no later than 120 days prior to the start of the fall semester.

Spring semester – Accepted with Program Director approval.

Summer semester – Applications are not accepted.

Curriculum

The typical progression through the Certificate curriculum is:

- Required Coursework (14 credit hours)
- Complete research paper (1 credit hour)

Program Requirements

Code	Title	Hours
PHST 500	Introduction to Biostatistics for Health Sciences I	3
PHST 501	Introduction to Biostatistics for Health Sciences II	3
PHEP 614	Introduction to Clinical Epidemiology	2
PHST 624	Clinical Trials I: Planning and Design	2
PHST 625	Clinical Trials II	2
PHPH 631	Clinical Research Management	2
PHPH 699	Mentored Research	1
Minimum Total Hours		15

If a student chooses to pursue the Master of Science in Clinical Investigation Sciences degree at any time after enrolling in or completing the certificate program, then all coursework completed within the preceding five years with a grade of B or better may be applied towards the MSc in Clinical Investigation Sciences degree.

PHPH 699 Mentored Research

Each student in the Certificate Program is required to prepare a research paper as part of the mentored research course. The research paper can be a literature review or a research project. Data collection is not required. The paper is to be submitted in completed form to the program coordinator at least two weeks before the end of the semester in which the candidate expects to graduate.

Clinical Investigation Sciences (MSc)

Master of Science in Clinical Investigation Sciences

Unit: Public Health and Information Sciences (<http://louisville.edu/sphis/>) (GH)

Department: Clinical Investigation Sciences (<http://louisville.edu/sphis/academics/clinical-investigation-sciences/>)

Program Webpage (<http://louisville.edu/sphis/academics/clinical-investigation-sciences/>)

Academic Plan Code(s): CISCMS C

Program Information

The MSc in Clinical Investigation Sciences degree program provides physicians, dentists, nurses and other health professionals an opportunity to acquire the clinical research skills necessary for a career in an academic health center.

The MSc in Clinical Investigation Sciences curriculum integrates biostatistical and epidemiologic methods in a problem-based learning format with additional instruction in several other biomedical and public health topics. Students pursuing the master's degree take didactic courses while they engage in mentored and independent research that culminates in the preparation of a professional paper.

Competencies

The successful student is able to:

- Access and critique scientific literature.
- Address and discuss methods and issues of clinical epidemiology.
- Identify important clinical research questions and state as testable hypotheses.
- Develop collaborative clinical research studies in accordance with appropriate epidemiologic and biostatistical methodologies.
- Disseminate study results to professional and lay audiences through oral and written communication.
- Analyze ethical and legal issues in performing and disseminating clinical research.

It is expected that prior to graduation, students in the program have demonstrated these competencies by completing the curriculum, participating in a collaborative research project, and successfully writing and defending the professional paper.

Admission Requirements

Applicants must have completed a baccalaureate degree from an accredited institution with a minimum GPA of 3.0 on a 4.0 scale. Applicants that have had research experience (e.g., research coordinator) or have completed a professional doctoral degree (e.g., DMD, DO, MD) are preferred.

Application requirements are submitted to the Graduate School and include:

- Formal graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>)
- Curriculum vitae
- Personal statement, a one-page essay that discusses the student's background and his or her long-term goals in clinical research
- Application fee
- A minimum of two letters of recommendation
- Official transcripts of all post-secondary coursework
 - International students' foreign transcripts must be submitted for foreign credential evaluation. This requirement may be waived for foreign students with ECFMG certification.
- Official scores on the Graduate Record Examination (GRE) General Test. This requirement may be waived for applicants who have any of the following:
 - A graduate degree from a U.S. institution
 - ECFMG certification
 - Passed steps 1 and 2 of the USMLE (United States Medical Licensing Examination)
 - Four or more years of clinical research related experience in the U.S. or Canada.
- International students for whom English is not their primary language must show English language proficiency by one of the following:

- TOEFL examination with a minimum score of 90 (after conversion for test type)
- IELTS test score of 6.5 or higher
- Duolingo test score of 105 or higher
- ECFMG (Educational Commission for Foreign Medical Graduates) certification
- Successfully passing the exit examination for the advanced level of an Intensive English as a Second Language Program
- Demonstration of a degree awarded from an institution with instruction primarily in English, as formally documented by an appropriate institutional official

For specific information about the degree program or the application process, students should contact Dr. Paul McKinney (mckinney@louisville.edu), Program Director, (502)852-3019, or Bryan Mathis (bryan.mathis@louisville.edu), Program Coordinator Senior, (502)852-6263.

Application Deadline

Fall semester - Completed applications and all required application materials are due by August 1.

International students are encouraged to apply no later than 120 days prior to the start of the fall semester.

Spring semester – Accepted with Program Director approval.

Summer semester – Applications are not accepted.

Curriculum

The typical progression through the MSc curriculum is:

- Develop program of study
- Take coursework
- Select research project and begin work
- Complete research project and prepare professional paper
- Present and defend research project

Faculty Advisor

The program director serves as faculty advisor for each student until the student begins his or her research for the professional paper, at which time the student selects a Principle Advisor for his or her research with the approval of the program director. The Principle Advisor may be any member of the School's faculty, or (with approval of the program director) a mentor in the student's laboratory or employment affiliation that is willing to assume the function of faculty advisor.

Program of Study

Upon matriculation in the program, each student meets with the program coordinator and develops a program of study based on the student's time availability (e.g., typical two-year program or extended three-year program). The program of study may be modified as the student's needs change or course availability is altered.

Awarding a degree from an accredited school of public health requires successful completion of coursework that provides instruction in foundational public health knowledge. This instruction is delivered through PPH 523 Public Health in the United States.

Students with a prior degree from a CEPH accredited school or program of public health may be relieved of this requirement, per approval of

the Associate Dean for Academic Affairs. In the absence of a variance, PHPH 523 satisfies the requirement.

Program Requirements

31 total credit hours of required coursework

- 22 credit hours of required coursework
- 6 credit hours of elective coursework
- 3 credit hours of mentored research

The following includes all required courses organized by the semester in which they are offered. Some courses are offered in alternating years (see below).

Course Offerings by Semester

Fall	Hours
Required Coursework	
PHPH 523 Public Health in the United States ¹	3
PHST 500 Introduction to Biostatistics for Health Sciences I	3
PHPH 610 New Drug & Device Development ²	2
PHST 624 Clinical Trials I: Planning and Design	2
PHPH 631 Clinical Research Management ³	2
Elective	3
Hours	15
Spring	
PHST 501 Introduction to Biostatistics for Health Sciences II	3
PHST 625 Clinical Trials II	2
PHPH 632 Ethical Conduct of Health Care Research ⁴	2
PHEP 614 Introduction to Clinical Epidemiology ⁵	2
PHPH 601 Evaluating Health Care Literature ⁵	1
PHPH 699 Mentored Research	3
Elective	3
Hours	16
Minimum Total Hours	31

¹ PHPH 523 is required of students who do not have a public health degree from a CEPH accredited School of Public Health.

² PHPH 610 is offered every other fall semester on even numbered years (2022, 2024, 2026, etc.)

³ PHPH 631 is offered every other fall semester on odd numbered years (2021, 2023, 2025, etc.)

⁴ PHPH 632 is offered every other spring semester on even numbered years (2022, 2024, 2026, etc.)

⁵ PHEP 614 and PHPH 601 are offered every other spring semester on odd numbered years (2021, 2023, 2025, etc.)

Elective Coursework

Code	Title	Hours
Approved Electives		
Six (6) credit hours of electives from the following (other courses on approval of program advisor)		
Advanced Coursework in Biostatistics (PHST-XXX) ⁴		2-3
Advanced Coursework in Epidemiology (PHEP-XXX) ⁴		2-3
PHPB 501 Introduction to Public Health Behavior ⁵		3
LEAD 676 Instructional Strategies in Health Professions Education		3
LEAD 685 Evidence-based Practice in HPE		3

PHMS 684	Project Management for Population Health ⁶	3
PHMS 645	Health Services Research Methods I ⁶	3
ENGL 677	Graduate Writing in the Disciplines ⁶	3
SOC 618	Qualitative Research Methods ⁶	3

⁴ Specific courses vary.

⁵ Offered fall semesters

⁶ Offered spring semesters

Professional Paper

A professional paper, based on original research conducted by the student, is required of a candidate for the degree of Master of Science in Clinical Investigation Sciences. It is to be an original work of professional quality and a scholarly achievement that demonstrates the student's thorough understanding of research techniques in clinical research and the ability to conduct independent research.

Professional Paper Committee

The professional paper is read by a reading committee, chaired by the student's faculty advisor, and appointed by the dean of the school upon the recommendation of the program director. This committee consists of three members and must include one representative of the School of Public Health and Information Sciences. The professional paper must be approved by the committee and the program director.

Professional Paper Proposal

The proposal for the professional paper is to be developed in written form and presented to the committee for approval.

Professional Paper Approval

The professional paper is to be submitted in completed form to the Principal Advisor of the committee at least fourteen days before the end of the term in which the candidate expects to be graduated, and the candidate is not eligible for the final oral examination until the professional paper has been accepted by the committee.

The committee schedules an oral examination of the candidate during which the student presents his or her professional paper and is asked to defend it and the supporting research. The professional paper is approved by a majority vote of the committee and by the program director.

Communication (MA)

Master of Arts in Communication

Unit: College of Arts and Sciences (<http://louisville.edu/artsandsciences/intro/>) (GA)

Department: Communication (<http://commcourses.com/www/>)

Program Website (<http://commcourses.com/www/index.php/master-arts/>)

Academic Plan Code(s): COMMMA

Program Information

The Master of Arts in Communication is a 37 credit hour program. It includes 22 credit hours of foundation and core courses, nine (9) credit hours of electives, and a six (6) credit hour thesis or non-thesis option. The non-thesis option includes a three (3) credit hour practicum and an additional three (3) credit hour elective course.

Degree Summary

Code	Title	Hours
	Core Coursework	13
	Electives	18
	Thesis/Non-thesis Option	6
Minimum Total Hours		37

At least 19 of the 37 credit hours must be in courses at the 600 level.

Upon admission to the program, the student will work with the Director of Graduate Studies to establish a plan of study. After the second semester, students choosing the thesis option will select a mentor who will provide guidance for the thesis and selecting two additional faculty to serve on the thesis committee, one of whom must be outside the Department of Communication. Students choosing the non-thesis option will select a mentor who will provide guidance concerning the practicum and course selection. Students choosing the non-thesis option will take a written comprehensive exam administered by the Communication Department faculty.

Application for Admission

Students seeking admission to the program (accelerated or otherwise) will be evaluated based on the following criteria:

- **Graduate School Application**
 - Applicants to graduate school at the University of Louisville must submit a **Graduate Application for Admission**. It can be accessed at this link. (<https://apply.louisville.edu/register/applygrad/>)
- **Previous Degrees**
 - Applicants need an undergraduate degree in Communication or a related discipline.
- **Demonstrated competency in quantitative and qualitative-based courses**
 - Applicants who have completed, or are in the process of completing, a BA or BS in Communication at the University of Louisville must have taken Communication Research Methods or Communication Statistics and earned a grade of B or better.
 - Applicants from outside of the department or the university must have earned a B or better in a course related to quantitative and/or qualitative research methods.
- **Transcripts** indicating a Cumulative GPA of 3.0 or Higher
 - Applicants must submit an official transcript from each college attended. All University of Louisville transcripts will automatically be submitted with the completion of an application. Transcripts must be sent directly from the school to Graduate Admissions, in order to be considered official.
 - Undergraduate students applying to the accelerated master's degree program must have a minimum cumulative GPA of 3.0 after earning 45 credit hours.
- **Writing Sample**
 - A writing sample that demonstrates academic writing skill. There is no page limit, but usually a sample with 3 to 10 pages will be acceptable. Writing samples should show English language proficiency, meaningful research questions (process), theoretical and methodological awareness, thoroughness in research (evidence, data collection), and craft.
- **Recommendations**

- Three letters of recommendation from faculty familiar with the applicant's academic work. Of special interest are the applicant's research potential and qualitative and quantitative reasoning skills.

- **Personal Statement**

- A personal introduction that includes the reasons for applying to this program, personal goals during and after completing the program, interest in obtaining an assistantship, and any other pertinent particulars.

- **Graduate Record Exam (GRE)**

- The GRE is **not required** unless a student applies for an **Assistantship**. GRE scores are used as a metric for determining eligibility for departmental funding and are not a requirement for admission into the program.

Summary

Application Materials include:

- Official university transcripts
- Writing samples
- Three letters of recommendation
- Personal statement
- Graduate admissions application

Program Requirements

Code	Title	Hours
Foundations		
COMM 506	Ethical Problems in Communication - CUE (http://catalog.louisville.edu/undergraduate/general-education-requirements/), WR (http://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
COMM 601	Professional Seminar in Communication	1
COMM 605	Communication Theory & Practice	3
COMM 616	Qualitative Communication Research	3
COMM 617	Quantitative Methods in Communication	3
Electives (6 Courses)		18
COMM 580	Interpersonal Communication	
COMM 590	Health Communication	
COMM 603	Communication Pedagogy	
COMM 620	Organizational Communication	
COMM 625	Personality and Communication	
COMM 650	Corporate Communication	
COMM 675	Risk Communication	
COMM 520	Computer-Mediated Communication - WR (http://catalog.louisville.edu/undergraduate/general-education-requirements/)	
COMM 653	Integrated Marketing Communication Campaigns	
COMM 654	Strategic Communication and Crisis Management	
COMM 660	Selected Topics in Mass Media	
COMM 540	Public Communication Campaigns	
COMM 555	Persuasive Movements	
COMM 610	Problems of Public Discourse	
COMM 630	Intercultural Communication	
COMM 640	Communication in Social Service	
COMM 651	Conflict Management	

Thesis or Non-Thesis Option

Select thesis or non-thesis option 6

Thesis

COMM 698 Thesis (includes oral defense)

Non-Thesis Option

COMM 600 Practicum

5XX or 6XX elective

Minimum Total Hours 37

Pending approval of the department program coordinator, and approval by the Graduate School, a student may transfer up to six (6) credit hours of graduate credit from another institution.

Non-thesis option: Students electing a non-thesis option will complete the 37 credit hours specified above, with two differences. Students who select the non-thesis option will substitute one 600-level practicum and one elective for the six (6) credit hours of thesis. The non-thesis option also will include a Comprehensive Examination administered by Department Faculty.

Experiential Component

The Master of Arts does not require an experiential component. However, students may choose to do a practicum in a private business, community organization, or government agency that deals with communication. Students may complete the practicum in two ways. A student may turn current work or volunteer experience into a research project, or a student not previously affiliated with the practicum site may develop a project useful to the organization. In both cases, the student will work with a Communication Department faculty member to shape the project and will write a formal paper dealing with the project. Students who choose the practicum will be applying knowledge acquired in Communication coursework directly to area needs, thus serving the community and helping to build stronger university/community ties.

Communicative Disorders (MS)

Master of Science in Communicative Disorders

Unit: School of Medicine (<http://louisville.edu/medicine/>) (GM)

Department: Communicative Disorders (<http://louisville.edu/medicine/degrees/speechpathology/>)

Program Website (<http://louisville.edu/medschool/surgery/com-disorders/slp/>)

Academic Plan Code(s): CMDSMS

Program Information

Communicative Disorders (Speech-Language Pathology) at the University of Louisville is a well-established program that provides challenging academic coursework and clinical experience to master's degree candidates. Communicative Disorders is a Division within the Department of Otolaryngology—Head and Neck Surgery and Communicative Disorders in the School of Medicine. The graduate program offers a unique opportunity to pursue a Master of Science degree to students *with* and *without* undergraduate degrees in speech-language pathology. The program includes two options or phases: the *Preparatory Phase* and the *Core Phase*.

Preparatory Phase

Applications from students without a background in speech-language pathology will be submitted automatically to the *Preparatory Phase* of the program. The *Preparatory Phase* is a full-

time, two-semester sequence, beginning each year in the fall semester.

Core Phase

Applications from students who currently hold a bachelor's degree in speech-language pathology will be submitted automatically to the *Core Phase* of the program. The *Core Phase* is a full-time, five-semester sequence beginning each year in the fall semester.

The Council on Academic Accreditation in Audiology and Speech Language Pathology (CAA) of the American Speech Language Hearing Association (ASHA) accredits the program. Graduating students will be eligible to apply for the Certificate of Clinical Competence by ASHA if all requirements are fulfilled.

The program has cooperative arrangements with numerous schools, agencies, hospitals, and practice groups in the Kentuckiana region.

Degree Requirements

Candidates for the Master of Science degree in Communicative Disorders (Speech-Language pathology) must complete at least 54 credit hours at the graduate level, exclusive of credits related to the completion of an (optional) master's thesis and courses required to complete ASHA certification requirements.

Please refer to the section on Academic Standing (<http://catalog.louisville.edu/archive/2023-2024/graduate/general-policies-procedures-requirements/>) in this catalog entitled "Academic Probation" concerning program dismissal/retention in the program.

Pass/Fail Option

In general, students in the program may not choose the pass/fail option. Certain courses may be offered with this option at the discretion of the faculty.

Comprehensive Exam

Students will complete an eight-hour written comprehensive examination (across two days) during their last semester of study. The completion and defense of a thesis/research project is encouraged but optional. The aforementioned written comprehensive exam is not required for thesis/research project students (outside the defense of their research).

The comprehensive examination/defense must be completed at least five weeks prior to the completion of the student's graduate program. The student is responsible for becoming familiar with the consequences of failure of the written examination. This information is available in the student academic policy manual.

Clinical Practicum

The American Speech-Language-Hearing Association requires a minimum of 400 clock hours of supervised clinical practicum in speech-language pathology to be eligible for certification; 325 hours at the Graduate level. All students must have completed a minimum of 25 hours of observation. If these hours were obtained at the undergraduate level, they are not repeated.

Certain prerequisites and standards apply to the clinical practicum component of the program, including minimum coursework requirements, mandatory readings, observations, case report formats, and grading criteria. This information is available in the program office and it is the student's responsibility to become acquainted with these requirements prior to enrolling in clinical practicum.

Falling below a 3.0 GPA in practicum for two consecutive semesters may result in recommended dismissal from the program. Practicum assignments are made at the discretion of the faculty; however, student input is welcomed.

Admission Requirements

The application deadline for the fall semester is always the preceding February 1st.

The Preparatory Phase and the Core Phase *share* the following admission criteria and application process, including the application form.

Admission Criteria

- Graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>)
- Minimum* undergraduate cumulative GPA of at least 3.0 (on a 4.0 scale)
- Completion of the GRE (Graduate Record Exam) is not currently required.
- All applicants for whom English is a second language must also submit official TOEFL scores of 79 or higher on the internet-based test, 213 or higher on the computer-based test. English proficiency can also be met by submitting official IELTS scores of at least 6.5 overall band score from the academic module exam or official Duolingo overall score of 105. Students holding a bachelor's or advanced degree from an accredited institution in the United States may be exempt from this requirement.
- Three supportive letters of recommendation from two academic sources and one personal source. Please use the online recommendation form when completing the application for graduate admission supplied by the Graduate School (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>).
- A formal interview may be required of some applicants.
- A resume is required for admission.

Student, faculty, and staff in the program are treated in a nondiscriminatory manner without regard race, sex, age, color, national origin, ethnicity, creed, religion, disability, sexual orientation, gender, gender identity or expression, marital status, pregnancy, veteran status, or political affiliation. The institution and program comply with all applicable laws, regulations, and executive orders pertaining thereto.

Tuition Information

For more information on tuition at the University of Louisville: louisville.edu/finance/bursar/tuition (<https://louisville.edu/finance/bursar/tuition/>)

How to Apply

The Preparatory Phase and the Core Phase use the same application form. Applications from students *with* undergraduate degrees in speech-language pathology will automatically be considered for admission to the Core Phase of the program. Applications from students *without* undergraduate degrees in speech-language pathology will be considered for admission to the Preparatory Phase of the program.

Students apply to the program using the University of Louisville, Graduate School: louisville.edu/graduate/apply (<http://louisville.edu/graduate/apply/>).

Communicative Disorders (Speech-Language Pathology) MS Degree - Core Program

Year 1		Hours
Fall		
CMDS 572	Anatomy and Physiology for Communication Sciences	4
CMDS 600	Research Methods in Speech-Language Pathology	2
CMDS 602	Speech Sound Disorders	3
CMDS 611	Practicum in Speech Pathology ((Clinical Methods))	1
CMDS 612	Early Childhood Language Assessment & Intervention	3
Hours		13
Spring		
CMDS 611	Practicum in Speech Pathology (Clinical Methods)	1
CMDS 620	Motor Speech Disorders	3
CMDS 652	School-Age Language Assessment and Intervention	3
CMDS 663	Voice Disorders	3
CMDS 690	Dysphagia	3
CMDS 699	Research Project	1
Hours		14
Summer		
CMDS 611	Practicum in Speech Pathology	2
CMDS 667	Aphasia	3
CMDS 669	Cognitive-Communication Disorders	3
Hours		8
Year 2		
Fall		
CMDS 611	Practicum in Speech Pathology	3
CMDS 665	Fluency Disorders	3
CMDS 694	Pediatric Feeding and Swallowing	3
CMDS 696	Augmentative/ Alternative Communication	3
CMDS 699	Research Project	2
Hours		14
Spring		
CMDS 611	Practicum in Speech Pathology	1-5
CMDS 658	Interprofessional Education and Practice	1
CMDS 668	Professional Issues in Audiology and Speech Pathology	3
CMDS 699	Research Project	1
Hours		6-10
Minimum Total Hours		55-59
Code	Title	Hours
Electives		
CMDS 606	CMDS Independent Study	1-5
CMDS 618	Counseling and Interviewing (online course)	3
CMDS 691	Advanced Dysphagia	2

Communicative Disorders (Speech-Language Pathology) MS Degree - Preparatory Program

Code	Title	Hours
Fall Semester		
CMDS 470/570	Clinical Observation in Speech Pathology and Audiology	1
AUDI 605/ CMDS 405	Introduction to Audiological Techniques and Rehabilitation	3
CMDS 464	Normal Speech and Language Development	4
CMDS 474/574	Multicultural Issues in Communicative Disorders	3
PSYC 571	Special Topics in Psychology ((undergraduate students only))	3

Spring Semester

CMDS 430/630	Aural Rehabilitation for the Speech-Language Pathologist	3
CMDS 463/563	Clinical Phonetics	3
CMDS 471/571	Functional Neuroanatomy	3

The Master of Science in Communicative Disorders (Speech-Language Pathology) (CMDSMS) program prepares students to meet the requirements for certification and/or licensure. If you plan to pursue professional licensure or certification you should first determine your state’s criteria for examination and licensure to see how/if our program meets those requirements prior to enrollment. We recommend that you also contact your state’s licensing board directly to verify that the requirements have not changed recently and to answer any questions especially those regarding additional requirements beyond the degree.

More information about certification or licensure is available at the following website: <https://louisville.edu/oapa/licensure-information> (<https://louisville.edu/oapa/licensure-information/>) (you may search by school or by the name of the program then click on 'View Details' to display the information).

Computer Science (MS)

Master of Science in Computer Science (MS)

Unit: Speed School of Engineering (<http://engineering.louisville.edu>) (GS)

Department: Computer Science and Engineering (<https://engineering.louisville.edu/academics/departments/computer/>)
Academic Plan Code(s): CS_ _MS, CS_ _MS_0

Program Information

This program can be completed in a traditional classroom format or entirely online (<http://louisville.edu/online/programs/masters/master-of-science-in-computer-science/>).

The MS degree program is intended for persons having an accredited baccalaureate degree in computer science or computer engineering, but is available to those with other backgrounds. Applicants with other backgrounds should plan on taking some undergraduate background coursework. Students interested in the MS degree program should consult the Director of Graduate Studies in the Department of Computer Science and Engineering.

Degree Requirements

The program of study must be completed with a 3.00 GPA or better for all graduate courses used to satisfy degree requirements. Additionally, the program of study must be completed with a 3.00 GPA or better for all academic work attempted in graduate studies.

The requirements for the Master of Science degree are discussed in more detail in the Degree Requirements (<http://catalog.louisville.edu/archive/2023-2024/graduate/general-policies-procedures-requirements/degree-requirements/>) section of this catalog.

Admission Standards

The admission standards for the Master of Science program in Computer Science are as follows:

- a. All admission applications for the program shall include:
 - i. A completed graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) for the Graduate School,
 - ii. An application fee,
 - iii. At least two letters of recommendation,
 - iv. Personal statement or resume,
 - v. Official transcript(s) for all previous post-secondary coursework. All transcripts not in English must be certified as authentic and translated verbatim into English.
- b. The minimum requirement for admission is the baccalaureate degree or its equivalent from an accredited institution.
- c. The successful applicant will typically have an undergraduate grade point average of 2.75 or above (on a 4.00 scale).
- d. International students whose primary language is not English must show English language proficiency by either TOEFL/IELTS/Duolingo score or demonstration of a degree awarded from an acceptable English language institution. The successful applicant will typically have a TOEFL score of 80 or higher or overall IELTS score of 6.5 or higher or a Duolingo score of 105 or higher.

Program Requirements

Remedial work may be specified for those applicants who, in the opinion of the faculty, do not have a sufficient background.

The minimum curricular requirements for the master’s program are:

Code	Title	Hours
MS in Computer Science Coursework		
	Foundations Course (see list below) ¹	3
	Software Courses (see list below) ²	6
	Analytic Courses (see list below) ³	6
	CSE Electives ⁴	9
	Select one of the following:	6
<i>Thesis Option</i>		
CSE 690	Master of Science Thesis in Computer Science ⁵	
<i>Non-Thesis Option</i>		
CSE 696	CSE Project	
	CSE Elective ⁴	
<i>Course Option</i>		
	CSE 6XX (Project Oriented Course)	
	CSE Elective ⁴	
Minimum Total Hours		30

The Master of Science degree must be completed with a 3.00 GPA or better for all graduate courses used to satisfy degree requirements. Additionally, the master of science degree must be completed with a 3.00 GPA or better for all academic work attempted in graduate studies.

¹ One Foundations Course from the list below is required
² Two Software Courses from the list below are required
³ Two Analytic Courses from the list below are required
⁴ Electives must be chosen so that at least one-half of the credits counted toward the degree, exclusive of thesis, are 600-level; at least fifteen (15) credit hours of coursework must be in CSE.
⁵ For the thesis option, a student is required to select both an approved MS thesis topic and the director and members of the thesis committee during the first term of Graduate Studies. The thesis director must

give approval for enrollment in CSE 690 Master of Science Thesis in Computer Science.

Approved Courses

Foundation Courses

Code	Title	Hours
CSE 504	Automata Theory	3
CSE 611	Computer Architecture	3
CSE 619	Design and Analysis of Computer Algorithms	3

Software Courses

Code	Title	Hours
CSE 516	Fundamentals of Computer Communications and Networks	3
CSE 535	Database Systems	3
CSE 545	Artificial Intelligence	3
CSE 550	Software Engineering	3
CSE 625	Parallel Programming	3
CSE 629	Distributed System Design	3
CSE 630	Advanced Databases	3
CSE 640	Internet Application Design and Development	3

Analytic Courses

Code	Title	Hours
CSE 522	Performance Evaluation of Computer Systems	3
CSE/IE 563	Experimental Design in Engineering	3
CSE 620	Combinatorial Optimization and Modern Heuristics	3
CSE 622	Simulation and Modeling of Discrete Systems	3
CSE 627	Digital Image Processing	3
CSE 632	Data Mining	3
CSE 635	Data Mining with Linear Models	3

Computer Science and Engineering (MEng)

Master of Engineering in Computer Science and Engineering

Unit: Speed School of Engineering (<http://engineering.louisville.edu>) (SP)

Department: Computer Science and Engineering (<https://engineering.louisville.edu/academics/departments/computer/>)

Academic Plan Code(s): CECSMEN

Program Information

General Information

The Bachelor of Science in Computer Science and Engineering degree will provide a student with the basis to be able to complete the Master of Engineering (MEng) in Computer Science and Engineering degree. The Master of Engineering in Computer Science and Engineering degree program is accredited by the Engineering Accreditation Commission (EAC) of ABET, www.abet.org (<https://www.abet.org/>).

Since the Computer Science and Engineering MEng is accredited as part of a five-year program with one-year of co-op experience, it is

only available for students who have matriculated through the Computer Science and Engineering bachelor degree program at Speed School. Therefore, students who earn an undergraduate degree at a school or university other than the University of Louisville pursue the MS degree instead of the MEng degree.

Master of Engineering Program Educational Objectives

The purpose of the five-year Master of Engineering Program is to bring together the faculty, staff, and capital resources to meet the following program educational objectives:

- Educate and train MEng graduates with the advanced level academic background and practical engineering experience necessary to function as Computer Science and Engineering professionals in a modern, ever-changing world
- Produce graduates who demonstrate competence by being selected for employment by industrial, academic, or government entities, or pursue further professional/graduate studies
- Provide our graduates with the foundation for the development of a successful career and with the understanding that life-long learning is necessary to this development
- Ensure that our graduates understand the broad social, ethical, and professional issues of contemporary engineering practice

Master of Engineering Student Outcomes

In order to achieve these objectives, the Master of Engineering has the following outcomes set for its graduates. Graduates will demonstrate:

- Identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics.
- Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
- Apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors.
- Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.
- Communicate effectively with a range of audiences in a variety of professional contexts.
- Recognize ethical, legal and professional responsibilities in engineering situations and computing practice and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.
- Function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives.
- Develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.
 - Apply computer science theory and software development fundamentals to produce computing-based solutions.
 - Acquire and apply new knowledge as needed, using appropriate learning strategies.
- Perform advanced level of analysis, knowledge of current topics and competence in performing independent research.

Residency

All graduate students are expected to make steady and satisfactory progress toward the completion of degrees. A candidate for the Master of Engineering degree who does not register for credit hours must maintain

active registration by paying a fee each semester for MEng residency until the degree is awarded (i.e., the candidate must maintain continuous registration, including summer terms, in Graduate Studies). Failure to pay the MEng residency fee will be cause to cancel a student's residency. Students who are not enrolled for a period of more than 12 months will be considered to have withdrawn from the program. In order to be restored to residency, the student must submit a new application, have the recommendation of the department chair, receive the approval of the Associate Dean and pay the fee for each of the semesters during which the residency was void.

Academic Performance

The J.B. Speed School of Engineering has established the following performance policies:

- The minimum grade point average requirement for good standing is 3.00 for all academic work completed while in graduate studies.
- Any student with a cumulative graduate GPA below 3.00 will be placed on academic warning. Students on academic warning are limited to enrollment for thirteen (13) credit hours in a fall or spring semester and seven (7) credit hours for summer terms.

Students who do not bring their cumulative graduate GPA back at or above a 3.00 in the semester immediately following Academic Warning, will be placed on Academic Probation for the next semester of enrollment. Students on probation are limited to enrollment for thirteen (13) credit hours in a fall or spring semester and seven (7) credit hours for summer terms. Any student who remains in academic probation for two consecutive terms may be considered for dismissal from the program.

- Students receiving graduate assistantships (teaching, research or service) shall be provided adequate training and shall be required to understand and adhere to University policies related to these areas. The performance of teaching, research and service duties by such students shall be periodically evaluated. Students with teaching assistantships shall be evaluated annually.
- Students who fail to meet performance goals or who do not meet other requirements as outlined in the admission letter, program requirements or the university catalog may be subject to academic dismissal from their programs.
- A maximum of eight (8) credit hours of graduate level courses taken as an undergraduate may be used to satisfy MEng degree requirements; these courses cannot have been used to also satisfy BS degree requirements.

Degree Requirements

The following degree requirements are mandatory of all Master of Engineering candidates:

- The program of study must be completed with a 3.00 GPA or better for all graduate courses used to satisfy degree requirements. Additionally, the program of study must be completed with a 3.00 GPA or better for all academic work attempted in graduate studies.
- Master's degree students must take at least 24 credit hours of coursework at the University of Louisville to satisfy the residency requirement for the master's degree. A maximum of six (6) credit hours of graduate credit may be transferred from accredited institutions.
- Students following the thesis option must follow the Procedures and Standards for Master of Engineering Theses.

- The total requirements must be completed within six years after admission into graduate studies. The time limit imposed by the rule may be extended in individual cases upon recommendation of the department chair and approval of the associate dean for academic and student affairs.
- The MEng degree cannot be conferred prior to the BS degree.

Admission Standards

Since the Computer Science and Engineering MEng is accredited as part of a five-year program with one-year of co-op experience, it is only available for students who have matriculated through the Computer Science and bachelor degree program at Speed School.

The application form is available online (<https://engineering.louisville.edu/meng-graduate-application-form/>).

The requirements for admission or readmission to a master of engineering program are:

- Submission of a completed MEng application for the field of specialization in which the student is earning a bachelor degree from the J.B. Speed School of Engineering. Students can be admitted to the MEng program with fewer than thirteen (13) credit hours of BS degree requirements remaining and no later than two years post conferral of their baccalaureate degree;
- Recommendation by the faculty and chair of the student's department for admission or readmission to graduate studies;
- Cumulative baccalaureate grade point average of 2.75. However, those students with cumulative baccalaureate grade-point averages from 2.50 to 2.75 may be admitted upon petition and approval of the chair and faculty of the department.

A student becomes a candidate for the Master of Engineering degree upon admission to graduate studies and initial registration as a graduate student.

Program Requirements

The Master of Engineering in Computer Science and Engineering degree requires the following over and above the Bachelor of Science in Computer Science and Engineering degree:

Code	Title	Hours
Master of Engineering Coursework		
<i>Choose one of the following:</i>		
CSE 611	Computer Architecture	
OR		
CSE/ECE 510	Computer Design	
ECE 511	Computer Design Laboratory	
<i>Choose one of the following:</i>		
CSE/IE 563	Experimental Design in Engineering	3
OR		
CSE 620	Combinatorial Optimization and Modern Heuristics	3
<i>Core Requirements:</i>		
CSE 622	Simulation and Modeling of Discrete Systems	3
CSE 625	Parallel Programming	3
CSE Electives ^{1,2}		9
Technical Elective ^{1,3}		3

Select one of the following:	6
<i>Thesis Option:</i>	
CSE 697	Master of Engineering Thesis in Computer Engineering and Computer Science ⁴
<i>Non-Thesis Option:</i>	
CSE 696	CSE Project
CSE Elective ^{1,2}	
Minimum Total Hours	30

The Master of Engineering degree must be completed with a 3.00 GPA or better for all graduate courses used to satisfy degree requirements. Additionally, the Master of Engineering degree must be completed with a 3.00 GPA or better for all academic work attempted in Graduate Studies.

A maximum of eight (8) credit hours of graduate level courses taken as an undergraduate may be used to satisfy MEng degree requirements; these courses cannot have been used to also satisfy BS degree requirements.

- ¹ Electives must be chosen so that at least one-half of the total credits counted toward the degree, exclusive of thesis, are 600-level.
- ² CSE Electives must be approved by the department.
- ³ Technical Electives can be CSE or non-CSE courses. Technical Electives must be approved by the department.
- ⁴ For the thesis option, a student is required to select both an approved MEng thesis topic and the director and members of the thesis committee during the first term of Graduate Studies. The thesis director must give approval for enrollment in CSE 697.

Computer Science and Engineering (PhD)

Doctor of Philosophy in Computer Science and Engineering
Unit: Speed School of Engineering (<http://engineering.louisville.edu>) (GS)

Department: Computer Science and Engineering (<https://engineering.louisville.edu/academics/departments/computer/>)
Academic Plan Code(s): CSE_PHD

Program Information

General Information

The PhD degree program is intended for persons having an accredited master's and/or baccalaureate degree in computer science, computer engineering, or electrical engineering, but is available to those with other backgrounds. Applicants with other backgrounds should plan on taking some undergraduate background coursework.

Students interested in the PhD degree program should consult the Director of Graduate Studies in the Department of Computer Science and Engineering.

Degree Requirements

The award of a Doctor of Philosophy degree indicates that a student has attained mastery of a field and has demonstrated the capacity to perform independent scholarly research. Candidates for the Doctor of Philosophy degree must have a minimum final cumulative grade point average of 3.00 for all academic coursework attempted in Graduate Studies.

The requirements for the Doctor of Philosophy degree are explained in more detail in the Degree Requirements section (<http://catalog.louisville.edu/archive/2023-2024/graduate/general-policies-procedures-requirements/degree-requirements/>) of this catalog.

Admission Standards

The admission standards for the PhD program in Computer Science and Engineering are as follows:

- a. All admission applications for the program shall include:
 - i. A completed graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) for the Graduate School,
 - ii. An application fee,
 - iii. Results from the Graduate Record Examination (GRE),
 - iv. At least two letters of recommendation,
 - v. A brief personal statement describing the decision to continue to a PhD program, and
 - vi. Official transcript(s) for all previous post-secondary coursework. All transcripts not in English must be certified as authentic and translated verbatim into English.
- b. The minimum requirement for admission is the baccalaureate degree or its equivalent from an accredited institution.
- c. The successful applicant will typically have an undergraduate grade point average of 3.00 or above (on a 4.00 scale).
- d. The successful applicant will typically have a GRE combined Verbal and Quantitative Reasoning score of 295 or above.
- e. International students whose primary language is not English must show English language proficiency by either TOEFL/IELTS/Duolingo score or demonstration of a degree awarded from an acceptable English language institution. The successful applicant will typically have a TOEFL score of 80 or higher or overall IELTS score of 6.5 or higher or a Duolingo score of 105 or higher.

Program Requirements

Normally, it is expected that the student will complete a master's degree before being admitted to the PhD Program. However, qualified applicants may be admitted directly to the doctoral program after receiving a baccalaureate degree. These students will be required to complete an additional 30 credit hours of coursework at the 500 and 600 level under an individual plan developed in conjunction with the department's Director of Graduate Studies.

Also, remedial work may be specified for any applicant who, in the opinion of the faculty, do not have a sufficient background.

The minimum curricular requirements for the doctoral program are:

Code	Title	Hours
Post-Baccalaureate Courses		
	Approved Master's Level Course Work	30
	CSE Electives ¹	18
CSE 799	Dissertation Research	9
CSE 795	CSE Seminar	2
Minimum Total Hours		59

Candidates for the Doctor of Philosophy degree must have a minimum final cumulative grade point average of 3.00 for all academic work attempted in Graduate Studies.

¹ Master's Level Course Work and/or CSE Electives must be chosen so that eighteen (18) credit hours of courses are taken in the core areas. Two courses are required in each of two core areas and one course in each of the remaining two core areas. The approved courses for the four core areas are listed below.

Computer Software Engineering Core Courses ¹

Code	Title	Hours
CSE 504	Automata Theory	3
CSE 516	Fundamentals of Computer Communications and Networks	3
CSE 530	Design of Compilers	3
CSE 545	Artificial Intelligence	3
CSE 550	Software Engineering	3
CSE 619	Design and Analysis of Computer Algorithms	3
CSE 629	Distributed System Design	3
CSE 630	Advanced Databases	3

Computer Hardware Engineering Core Courses ¹

Code	Title	Hours
CSE/ECE 510	Computer Design	3
CSE 525/ECE 516	Microcomputer Design	4
CSE 611	Computer Architecture	3
ECE 515	Introduction to VLSI Systems	3

Computationally Intensive Applications Core Courses ¹

Code	Title	Hours
CSE 522	Performance Evaluation of Computer Systems	3
CSE 564	Introduction to Cryptography	3
CSE 609	Multimedia Processing	3
CSE 621	Web Mining for E-Commerce and Information Retrieval	3
CSE 622	Simulation and Modeling of Discrete Systems	3
CSE 627	Digital Image Processing	3
CSE 628	Computer Graphics	3
CSE 660	Introduction to Bioinformatics	3
ECE 520	Digital Signal Processing	3
ECE 550	Communication and Modulation	3
ECE 560	Control Systems Principles	3
ECE 614	Deep Learning	3
ECE 619/CSE 633	Computer Vision	3
ECE 620	Pattern Recognition and Machine Intelligence	3

Advanced Mathematics Core Courses ¹

Code	Title	Hours
IE/CSE 563	Experimental Design in Engineering	3
CSE 620	Combinatorial Optimization and Modern Heuristics	3
CSE 632	Data Mining	3
MATH 501	Introduction to Analysis I - CUE (http://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
MATH 667	Statistical Inference	3
MATH 681	Combinatorics and Graph Theory I	3

¹ Master's Level Course Work and/or CSE Electives must be chosen so that eighteen (18) credit hours of courses are taken in the core areas. Two courses are required in each of two core areas and one course in each of the remaining two core areas. The approved courses for the four core areas are listed below.

Counseling and Personnel Services (MEd)



Master of Education in Counseling and Personnel Services

Unit: College of Education and Human Development (<http://louisville.edu/education/>)

Department: Counseling and Human Development (<http://louisville.edu/education/departments/ecpy/>)

Program Website (<http://louisville.edu/education/degrees/med-cps-csp/>)

Academic Plan Code(s): See Concentration Requirements tab.

Program Information

The MEd in Counseling and Personnel Services is designed to prepare prospective professionals in a variety of counseling areas:

- Art Therapy
- Clinical Mental Health Counseling
- College Student Personnel
- Counseling Psychology
- School Counseling

Theory and practice are critically important components of the program. Students are required to pursue a logical sequence of study that permits a well-balanced preparation in theory, research, and field experience.

Mission

The mission of the MEd in Counseling and Personnel Services is to prepare scholar practitioners for counseling roles in which they contribute to society in a variety of professional positions. Our graduates support principles of social justice, fairness, and equity in their work; proactively promote the welfare of those they serve; and engage in a lifelong process of educational and professional renewal.

Admission Requirements

Prospective students must submit an online application for admission (<https://louisville.edu/graduate/apply/>) to the Graduate School.

For unconditional admission, a minimum undergraduate Grade Point Average (GPA) of 2.75 is required. The GRE test is no longer required for admission to the MEd in Counseling and Personnel Service degree program.

Requirements for Admission in Good Standing:

- GPA of 2.75.
- Two letters of recommendation from faculty or supervisors familiar with their work.
- Professional Goal Statement: The Admissions Committee evaluates applications based on how an applicant's goals, professional experiences, and commitment to education are an appropriate fit with this program.
- Resume.

Applicants are encouraged to visit the website of the specialization area of interest below for further information about suggested GPA requirements, application deadlines, and other specific information related to that specialization area.

- Art Therapy (<http://louisville.edu/education/degrees/med-cps-at/>)
- Clinical Mental Health Counseling (<http://louisville.edu/education/degrees/med-cps-mhc/>) (closed to new admission until Spring 2024)
- College Student Personnel (<http://louisville.edu/education/degrees/med-cps-csp/>)
- Counseling Psychology (<http://louisville.edu/education/degrees/med-cps-cp/>)
- School Counseling (<http://louisville.edu/education/degrees/med-cps-sc/>)

Degree Requirements

Code	Title	Hours
Core Professional Area		
LEAD 600	Introduction to Research Methods and Statistics ¹	3
ECPY 540	Evaluation and Measurement in Education	3
ECPY 605	Human Development	3
ECPY 619	Empirical and Theoretical Foundations of Counseling and Psychotherapy	3
ECPY 629	Theories and Techniques of Counseling and Psychotherapy (OR) ²	3
or ECPY 630	Theories and Techniques of School Counseling	
or ECPY 661	Theories of College Student Development	
ECPY 650	Group Process and Practice	3
ECPY 663	Multicultural and Diversity Issues	3

ECPY 670	Career Counseling	3
ECPY 730	Social, Legal & Ethical Issues in Counseling	3

Mid-Point Assessment

ECPY 672	Practicum in Clinical Mental Health Counseling (OR) ^{2 and 3}	3
or ECPY 673	Practicum in Counseling Psychology	
or ECPY 674	Practicum in School Counseling	
or ECPY 676	INTERNSHIP I in Art Therapy	
or ECPY 681	Internship in College Student Personnel Services	

One of the following Concentrations: 12-30

Art Therapy (24 credit hours)
Clinical Mental Health Counseling (30 credit hours)
College Student Personnel (12 credit hours)
Counseling Psychology (30 credit hours)
School Counseling (30 credit hours)

Minimum Total Hours 42-60

- LEAD 600 must be taken within the first nine (9) credit hours.
- Prior to ECPY 672 Practicum in Clinical Mental Health Counseling, students must complete ECPY 629 with a minimum grade of B.
- At least 700 hours of field placement must be completed during the practicum and two internships including at least 280 direct service hours. CACREP requires that 600 hours be completed during the internships.

MEd in Counseling and Personnel Services Concentrations

Clinical Mental Health Counseling (closed to new admission until Spring 2024)

Academic Plan Code(s): CPS_MEDMHC

General Requirement: Undergraduate prerequisite: Course in abnormal psychology

Code	Title	Hours
ECPY 621	Differential Diagnosis and Treatment in Counseling	3
ECPY 626	Consultation	3
ECPY 640	Assessment Methods for Counselors	3
ECPY 682	Internship in Clinical Mental Health Counseling	3
ECPY 682	Internship in Clinical Mental Health Counseling	3
ECPY 601	Introduction to Clinical Mental Health Counseling	3
ECPY 639	Prevention & Treatment of Substance Abuse	3
LEAD 601	Applied Statistics	3
Professional Electives		6
Minimum Total Hours		30

CACREP and Kentucky Board of Licensed Professional Counselors Curriculum Guidelines:

CACREP requires that 600 hours be completed during the internships.

- The helping relationship, including counseling theory and practice
- Human growth and development

- c. Lifestyle and career development
- d. Group dynamics, process, counseling, and consulting
- e. Assessment, appraisal, and testing of individuals
- f. Social and cultural foundations, including multicultural issues
- g. Principles of etiology, diagnosis, treatment planning, and prevention of mental and emotional disorders and dysfunctional behavior
- h. Research and evaluation
- i. Professional orientation and ethics

Degree assessment: All program coursework must be completed with a 3.0 cumulative GPA.

School Counseling (P-12)

Academic Plan Code(s): CPS_MEDCSC

Code	Title	Hours
ECPY 601	Introduction to Clinical Mental Health Counseling	3
ECPY 621	Differential Diagnosis and Treatment in Counseling	3
ECPY 624	Foundations of School Counseling	3
ECPY 626	Consultation	3
ECPY 629	Theories and Techniques of Counseling and Psychotherapy	3
ECPY 639	Prevention & Treatment of Substance Abuse	3
ECPY 640	Assessment Methods for Counselors	3
ECPY 684	Internship in School Counseling	3
ECPY 684	Internship in School Counseling	3
EDSP 540	Introduction to Exceptional Children	3
Minimum Total Hours		30

Notes: ECPY 674 Practicum in School Counseling must be applied for by March 1 for Fall term and October 1 for Spring term.

- a. Students must earn at least a B in ECPY 630 to be eligible to enroll in ECPY 674 School Counseling Practicum.
- b. For school counseling certification, a grade of "B" or better is required in ECPY 674 and ECPY 684.
- c. Transfer of credit is dependent upon receipt of transcript and advisor's approval.
- d. Upon admission, students have six years to complete their program.
- e. All students must have liability insurance prior to taking practicum.
- f. At any point after admission, the faculty reserve the right to review a student's fitness on the basis of personal characteristics, for continuing in the counseling or student personnel program. Such a review shall be initiated upon written recommendation of two faculty members and shall consist of a review of the student's academic result in a recommendation to the Dean for (1) continuation of the student in the program, (2) continuation for a specified provisional period with specific conditions for continuation thereafter, or (3) dismissal from the program.
- g. The program requires the acceptable completion of a program portfolio.
- h. The CEHD will be able to recommend the Provisional license, and verify completion of course work for the Standard license, for program completers. In addition, program completers must document at least one year of experience to the KY Education Professional Standards Board to be eligible for the Standard license.

- i. Kentucky certified teachers who hold a Rank II or Rank III, as well as individuals who are not certified teachers, will be eligible for a Rank I upon completion of this program.
- j. **This program must be totally completed and degree awarded to apply for a rank change with the state of Kentucky.**

Exit Requirements: To complete the program, students must have a minimum 3.0 GPA. No credit shall be accepted for carrying a grade lower than C (no C-minus). This program requires the acceptable completion of a program portfolio.

College Student Personnel

Academic Plan Code(s): MPC_MEDSTP

Code	Title	Hours
College Student Personnel Concentration (9 hours)		
ECPY 681	Internship in College Student Personnel Services	3
LEAD 682	The Organization and Administration of Higher Educational Institutions	3
ECPY 695	Capstone Seminar in College Personnel Work	3
Professional Elective		3
Minimum Total Hours		12

Degree Assessment: All program coursework must be completed with a 3.0 cumulative GPA.

Counseling Psychology

Code	Title	Hours
Counseling Psychology Concentration (24 hours)		
ECPY 611	Learning Systems: Theory and Practice	3
ECPY 621	Differential Diagnosis and Treatment in Counseling	3
ECPY 648	Psychological Assessment I	3
ECPY 649	Psychological Assessment II	3
ECPY 680	Practicum in Psychological Assessment ¹	3
ECPY 683	Internship in Counseling Psychology ¹	3
ECPY 775	Biological Bases of Behavior	3
LEAD 601	Applied Statistics	3
Professional Electives		6
Minimum Total Hours		30

Degree Assessment: All program coursework with a 3.0 cumulative GPA.

¹ 600 hours of field placement are required during the combination of ECPY 673, ECPY 680, and ECPY 683; 4 full psychological assessments are required during the combination of ECPY 673, ECPY 680, and ECPY 683

Art Therapy

Academic Plan Code(s): CPS_MEDET

General Requirement: Undergraduate prerequisite includes eighteen (18) credit hours in studio art and fifteen (15) credit hours in psychology.

Students admitted to the Art Therapy Program who have not completed prerequisites of fifteen (15) hours in Psychology and eighteen (18) credit hours in Studio Art must do so within the first year of study.

Code	Title	Hours
Art Therapy Concentration (24 hours)		
ECPY 621	Differential Diagnosis and Treatment in Counseling	3
ECPY 632	Clinical Art Therapy I: Theories	3
ECPY 633	Clinical Art Therapy II: Assessment and Practice	3
ECPY 638	Group Art Therapy Techniques	3
ECPY 677	Research in Art Therapy and Counseling	3
ECPY 641	Applied Methods in Art Therapy	3
ECPY 643	Practicum in Art Therapy-Counseling	3
ECPY 678	Internship II in Art Therapy-Counseling	3
Professional Electives		6
From the educational areas designated in Curriculum Guidelines for LPAT and ATR, including but not limited to:		
ECPY 628	Theories and Techniques of Counseling Children	
ECPY 639	Prevention & Treatment of Substance Abuse	
ECPY 644	Introduction to Sandtray	
ECPY 653	Grief Counseling	
ECPY 694	Graduate Seminar in Educational and Counseling Psychology	
Minimum Total Hours		30

Degree Assessment: All program coursework with a 3.0 cumulative GPA.

***ACATE – CAAHEP Educational Standards**

- a. History and Theory of art therapy
- b. Professional Orientation, Ethical, and Legal Issues
- c. Materials and Techniques of Art Therapy Practice
- d. Creativity, Symbolism, and Metaphor
- e. Group Work
- f. Art Therapy Assessments
- g. Thesis or Culminating Project
- h. Human Growth and Development
- i. Helping Relationships and Applications
- j. Psychopathology and Diagnosis
- k. Psychological and Counseling Theories
- l. Appraisal and Evaluation
- m. Research
- n. Cultural and Social Issues
- o. Studio Art
- p. Specializations
- q. Career Development (recommended but not required)

*The Commission on Accreditation of Allied Health Education Programs (CAAHEP) and the Accreditation Council for Art Therapy Education (ACATE) cooperate with the **American Art Therapy Association (AATA)** to establish, maintain and promote appropriate standards of quality for educational programs that meet or exceed the minimum standards.

¹ At least 700 hours of field placement must be completed during field studies and two practicums. 10 hours per week are required during field

studies. No less than 20 hours per week are required during the two practicums.

The Master of Education in Counseling and Personnel Services program prepares students to meet the requirements for certification and/or licensure. If you plan to pursue professional licensure or certification you should first determine your state's criteria for examination and licensure to see how/if our program meets those requirements prior to enrollment. We recommend that you also contact your state's licensing board directly to verify that the requirements have not changed recently and to answer any questions especially those regarding additional requirements beyond the degree.

More information about certification or licensure is available at the following website: <https://louisville.edu/oapa/licensure-information> (<https://louisville.edu/oapa/licensure-information/>) (you may search by school or by the name of the program then click on 'View Details' to display the information).

For programs with an online option, more information about certification or licensure is available here: <https://louisville.edu/online/About-Us?tab=disclosures> (<https://louisville.edu/online/About-Us/?tab=disclosures>)

Counseling and Personnel Services (PhD)

Doctor of Philosophy in Counseling and Personnel Services (CPSPHD)
Unit: College of Education and Human Development (<http://louisville.edu/education/>) (GE)
Department: Counseling and Human Development (<http://louisville.edu/education/departments/ecpy/>)
Program Website (<http://louisville.edu/education/degrees/phd-cps/>)
Academic Plan Code(s): See Specialization Requirements tab.

Program Information

The Doctor of Philosophy in Counseling and Personnel Services encompasses four specialization areas:

- College Student Personnel
- Counseling Psychology
- Counselor Education and Supervision
- Educational Psychology, Measurement, and Evaluation

The doctoral degree is granted in recognition of scholarly proficiency and distinctive achievement in a specific field/discipline. All candidates for a doctoral degree in the College of Education and Human Development must successfully complete qualifying exams and a dissertation/professional portfolio that clearly indicates the candidate has mastered and can exhibit/articulate the content knowledge, skills, and dispositions specific to their discipline, and can utilize appropriate research methodologies to contribute to the body of knowledge in their field.

Distinctive Characteristics of Doctoral Programs in the College of Education and Human Development

- **Social Justice and Equity**
Doctoral students in our program build experience and expertise in the issues of social justice and equity which aligns with our metropolitan mission and focus on student achievement.
- **Leadership**

Our doctoral students gain expertise in supervising and leading others to achieve organizational goals and missions, managing complex systems, addressing administrative issues and procedures, conducting research to enhance leadership and teaching others about the art of organizational leadership.

- **Practical Experience**
The doctoral program contains practicums, internships, or embedded field experience that aligns with program and career goals. These mentored experiences may include teaching, research, administration or other appropriate areas.
- **Scholarship/Research**
An emphasis on scholarship includes experience and mentorship in ethics, publications, presentation, grantsmanship, and other forms of creative activity. The research component is characterized by the development of vertical research teams: senior faculty, junior faculty, doctoral students, master's students, and in some programs, undergraduate students, working together on research projects and research areas. These may be bolstered by partnerships with local school districts, businesses, or community agencies.

Admission Requirements

Prospective students must submit an online application for admission (<http://louisville.edu/graduate/apply/>) to the Graduate School. Additional requirements are listed below:

- A master's degree, or its equivalent in a related field, is typically required. However, highly motivated applicants with a strong undergraduate record and a Bachelors degree may also be considered for admission. Applicants are required to submit official transcripts from all higher education institutions attended.
- Three letters of recommendation from individuals who can speak to the applicant's academic and/or professional capabilities and potential.
- Test scores from the Graduate Record Exam General Test – Verbal, Quantitative, and Analytical Writing – are required.
Please note: When submitting GRE scores through ETS, have scores sent to the general University of Louisville code, 1838.
- The Test of English as a Foreign Language (TOEFL/IELTS/Duolingo) is required of all students who completed a degree outside the United States from countries in which English is not the native language.
Students holding a baccalaureate or advanced degree from an accredited institution in the United States are exempt from this requirement.
- A statement of professional goals appropriate to pursuing a PhD in the specific area of specialization is required. Applicants should submit a personal statement of approximately 1,500 words outlining their professional goals and how their research and professional interests might align with those of faculty in the department.
- An updated curriculum vitae (CV) or resume

Each application will be evaluated to determine the strength of all components (GRE, undergraduate and graduate GPAs, letters of recommendation, professional goal statement, and work experience) as predictors of successful completion of the program. Applicants are encouraged to visit the website of the specialization area (<http://louisville.edu/education/degrees/phd-cps/>) of interest for further information about suggested GPA and GRE score requirements, application deadlines, and other specific information related to that specialization area

Program Requirements

The Doctor of Philosophy in Counseling and Personnel Services encompasses four specialization areas. For specific coursework, see **Specialization Requirements section**.

- College Student Personnel
- Counseling Psychology
- Counselor Education and Supervision
- Educational Psychology, Measurement, and Evaluation

All ECPY doctoral programs require courses in the following areas:

Specialty – Specialty courses are designed to prepare the student for work within their selected professional field.

Research Methodology – The research component prepares students to examine research within the professional area as well as contribute to the existing research.

Electives – Elective courses are selected in concert with advisor and program committee with consideration to the student's background, interests, and professional goals.

Each doctoral program will have additional requirements related to their program of study.

All candidates for a doctoral degree must successfully complete qualifying exams and a dissertation/professional portfolio that clearly indicates the candidate has mastered and can exhibit/articulate the content knowledge, skills and dispositions specific to their discipline, and can utilize appropriate research methodologies to contribute to the body of knowledge in their field.

Specialization Requirements

Specialization in Counselor Education and Supervision

Academic Plan Code(s): CPS_PHDCES

Master's Degree prerequisite + 60 credit hours minimum: The Student and Committee must develop courses, programs and experiences that clearly identify and address the specific themes of Leadership, Scholarship, Social Justice and Equity. These areas of emphasis must have descriptive competencies that the student should attain and the Committee can assess.

Code	Title	Hours
Specialty Components ¹		
<i>Generally includes:</i>		
ECPY 722	Advanced Theories of Counseling and Psychotherapy	
ECPY 731	Counselor Education Seminar: Teaching and Ethics in Counselor Education	
ECPY 755	Counselor Supervision	
ECPY 780	Advanced Practicum in Counseling	
ECPY 782	Doctoral Internship	
ECPY 793	Doctoral Seminar in Educational and Counseling Psychology (Advanced Counseling and Consultation)	

Specialty Electives

Research Methodology ²	27
LEAD 601 Applied Statistics (or equivalent required)	
LEAD 701 Intermediate Applied Statistics	
LEAD 703 Multivariate Educational Statistics	
Research Electives (e.g., Field Survey Research, additional qualitative methodologies and /or quantitative methodologies) ³	
Dissertation/Portfolio Research (12 credit hours)	
Minimum Total Hours	60

- ¹ 33 credit hours minimum, Required Courses and Specialty Electives selected with Program Committee approval.
- ² 27 credit hours minimum, selected with Program Committee approval
- ³ Selected with Program Committee approval within program guidelines/framework. LEAD 600 may not be used for this requirement.

Specialization in Counseling Psychology

Academic Plan Code(s): CPS_PHDCPS

NOTE: Professional Licensure/Certification is available for this specialization.

The Student and Committee must develop courses, programs and experiences that clearly identify and address the specific themes of Leadership, Scholarship, Social Justice and Equity. These areas of emphasis must have descriptive competencies that the student should attain and the Committee can assess.

Code	Title	Hours
Specialty Components [*]		60
Counseling Core (12 credit hours)		
Foundations (18 Credit hours)		
Clinical Field Experience (30 credit hours)		
Research Methodology		27
LEAD 701	Intermediate Applied Statistics (or equivalent)	
LEAD 702	Applied Multiple Regression (or equivalent)	
LEAD 703	Multivariate Educational Statistics (or equivalent)	
ECPY 540	Evaluation and Measurement in Education (or equivalent)	
ECPY 700	Supervised Research in Educational and Counseling Psychology	
ECPY 789	Advanced Research Design (or equivalent)	
ECPY 793	Doctoral Seminar in Educational and Counseling Psychology (Advanced Psychotherapy Research and Practice, or equivalent)	
Dissertation Research		
Elective Component [*]		21
Counseling Psychology Specialty		
Minimum Total Hours		108

* Specific coursework selected with Program Committee approval within program guidelines and framework.

** Or the following offerings of ECPY 793: Structural Equation Modeling; Multilevel Modeling; or Meta-analysis and Systemic Review (or equivalents).

Specialization in College Student Personnel

Academic Plan Code(s): CPS_PHDSTP

The Student and Committee must develop courses, programs, and experiences that clearly identify and address the specific themes of Leadership, Scholarship, Social Justice and Equity. These areas of emphasis must have descriptive competencies that the student should attain and the Committee can assess.

Code	Title	Hours
Specialty Components		39
Selected with Program Committee approval		
ECPY 660	Introduction to Student Personnel Work	
ECPY 662	Student Affairs Programs, Policies, and Practices	
ECPY 664	College Student Sub-Cultures	
ECPY 761	Program Development & Evaluation in Student Affairs	
ECPY 793	Doctoral Seminar in Educational and Counseling Psychology	
<i>Counseling Core (6 hours)</i>		
ECPY 623	Helping Skills for Student Affairs Professionals	
ECPY 670	Career Counseling	
<i>Foundations (9 hours)</i>		
ECPY 661	Theories of College Student Development	
ECPY 663	Multicultural and Diversity Issues	
LEAD 682	The Organization and Administration of Higher Educational Institutions	
<i>Internship/Practicum/Field Experience (9 hours)</i>		
ECPY 681	Internship in College Student Personnel Services	
ECPY 782	Doctoral Internship	
Research Methodology		30
Selected with Program Committee Approval		
LEAD 601	Applied Statistics	
One additional advisor-approved statistical analysis course		
One additional advisor-approved research methods course		
Two additional advisor-approved research courses		
ECPY 789	Advanced Research Design	
ECPY 795	Doctoral Research	
Elective Component		24
Chosen in concert with advisor and Program Committee with consideration to the student's background, interests, and professional goals		
Minimum Total Hours		93

Specialization in Educational Psychology, Measurement, and Evaluation

Academic Plan Code(s): CPS_PHDPME

The Educational Psychology, Measurement, and Evaluation specialization requires a minimum of 90 graduate credit hours distributed in the following areas of study: specialty components, research methodology, and electives. Equivalent courses taken in a master's program may be

substituted for required courses with advisor and program committee approval.

At least 45 of the 90 credit hours must be earned at UofL. These 45 credit hours include 18 credit hours fulfilling residency and twelve (12) credit hours required for dissertation research.

The Student and Committee must develop courses, programs and experiences that clearly identify and address the specific themes of Leadership, Scholarship, Social Justice and Equity. These areas of emphasis must have descriptive competencies that the student should attain and the Committee can assess.

Code	Title	Hours
Specialty Components		15
EPME Core (all required)		
ECPY 605	Human Development	
ECPY 701	Doctoral Professional Seminar in Educational Psychology, Measurement, and Evaluation	
ECPY 710	Social Ecology & Social Behavior	
ECPY 712	Advanced Issues in Human Development	
ECPY 775	Biological Bases of Behavior	
Research Methodology		36-42
Selected with Program Committee Approval (36 credit hours minimum, 42 credit hours maximum)		
LEAD 701	Intermediate Applied Statistics	
LEAD 702	Applied Multiple Regression	
LEAD 703	Multivariate Educational Statistics	
LEAD 704	Qualitative Field Research Methods	
ECPY 740	Psychometrics and Affective Instrument Development	
ECPY 745	Systematic Reviewing and Meta-Analysis	
ECPY 746	Secondary Data Analysis	
LEAD 764	Structural Equation Modeling	
LEAD 765	Hierarchical Linear Modeling	
LEAD 789	Advanced Research Design	
LEAD 795	Doctoral Research	
Electives		39
Selected with Program Committee Approval		
CSE 630	Advanced Databases	
CSE 632	Data Mining	
ECPY 540	Evaluation and Measurement in Education	
ECPY 611	Learning Systems: Theory and Practice	
ECPY 631	Adolescence	
EDSP 669	Single Case Research Methods and Designs	
ECPY 793	Doctoral Seminar in Educational and Counseling Psychology ¹	
ECPY 797	Internship in Educational Psychology, Measurement, and Evaluation ²	
EDSP 527	Inquiry into Early Childhood Education and Child Development	
LEAD 602	Survey Research and Attitude Measurement	
LEAD 606	Program Evaluation	
LEAD 705	Qualitative Data Analysis and Representation	
LEAD 750	Doctoral Seminar in Educational Evaluation	
LEAD 790	Problems in Urban Education and Society	

PHST 620	Introduction to Statistical Computing	
PHST 683	Survival Analysis	
PHST 710	Advanced Statistical Computing I	
Minimum Total Hours		90

- ¹ May be taken up to three times for a maximum of three (3) credit hours.
- ² May be taken for a maximum of three (3) credit hours.

The Doctorate in Counseling and Personnel Services - Specialization in Counseling Psychology program prepares students to meet the requirements for certification and/or licensure. If you plan to pursue professional licensure or certification, you should first determine your state's criteria for examination and licensure to see how/if our program meets those requirements prior to enrollment. We recommend that you also contact your state's licensing board directly to verify that the requirements have not changed recently and to answer any questions especially those regarding additional requirements beyond the degree.

More information about certification or licensure is available at the following website: <https://louisville.edu/oapa/licensure-information> (<https://louisville.edu/oapa/licensure-information/>) (you may search by school or by the name of the program then click on 'View Details' to display the information).

For programs with an online option, more information about certification or licensure is available here: <https://louisville.edu/online/About-Us?tab=disclosures> (<https://louisville.edu/online/About-Us/?tab=disclosures>)

Couple and Family Therapy (MS)

Master of Science in Couple and Family Therapy

Unit: Kent School of Social Work and Family Science (<http://louisville.edu/kent/>) (GK)

Department: Social Work (<http://louisville.edu/kent/>)

Program Website (<https://louisville.edu/kent/academics/couple-and-family-therapy/>)

Academic Plan Code(s): CFT_MS; CFT_MS_ADC

Program Information

The purpose of the Master of Science in Couple and Family Therapy (MSCFT) program within the Kent School of Social Work and Family Science (Kent School) is to develop professionals in couple/marriage and family therapy to work with couples, families, and other systems within their community contexts and through the lens of social justice.

Marriage/couple and family therapy is a distinct discipline from social work with its own state licensure board, national professional organization, and national accrediting body. The MSCFT degree program is the first COAMFTE#accredited master's degree program in the nation housed in a school of social work.

The MSCFT program offers a rigorous educational program that takes a social justice approach to working with individuals, couples, families, and other systems. Students take 60 credit hours and meet coursework requirements for Kentucky state licensure as a Licensed Marriage and Family Therapist and clinical membership in the American Association for Marriage and Family Therapy (AAMFT). MSCFT coursework focuses on family systems theoretical foundations, systemic assessment, social

justice and diversity, family systems interventions, research-informed practice, and ethics.

Students also have the option of completing a concentration in Alcohol & Drug Counseling.

The CFT Program has established the following six Program Goals, in accordance with our purpose of training a social-justice minded workforce of couple and family therapy professionals and our accreditation standards:

- Educate students with regard to the major models of marriage and family therapy
- Train students to effectively assess and conceptualize individual and family problems
- Train students to effectively implement marital and family therapy techniques and interventions
- Prepare students to practice professionally as ethical marriage/couple and family therapists
- Prepare students to become social-justice oriented marriage/couple and family therapists
- Train students to become research-informed clinicians

Degree Requirements

Code	Title	Hours
MS CFT Core Coursework		60
Alcohol and Drug Counseling concentration (optional)		9
Minimum Total Hours		60-69

MSCFT-MSSW Dual Degree

Students may also choose to complete a dual master's degree program in CFT (MS) and Social Work (MSSW), allowing completion of a master's degree in two distinct professions in 2-3 years. The dual-degree program exposes students to philosophical and legal distinctions of both degrees, creating a unique opportunity for MSSW students to deepen their clinical training with couples and families and introduce CFT students to a broader range of social work and social welfare course offerings and clinical diagnoses. Students in the dual-degree program take 84 credit hours.

For additional information, please contact kentcft@louisville.edu or go to the CFT webpage here (<http://uofl.edu/CFT/>).

Admission Requirements

Applications to the Master of Science in CFT program must include the following:

- Completed Graduate School application (<https://louisville.edu/graduate/apply/>) and application fee
- Earned bachelor's degree from an accredited institution
- Two recommendations from former instructors or supervisors
- Official transcripts from all colleges and universities attended
- Family of Origin paper (a description of formative experiences in one's family)
- Professional Statement (a description of career goals and reasons for seeking this degree)

- Overall GPA of 3.0 recommended; applicants with incoming GPAs under 3.0 must submit an addendum discussing gaps or deficiencies in applicant's academic record. Include planned strategies for maintaining the required 3.0 in Graduate School.

For additional information, please contact kentcft@louisville.edu or go to the CFT webpage here (<http://uofl.edu/CFT/>).

Program Requirements

Standards set by the Commission on Accreditation for Marriage and Family Therapy Education (COAMFTE).

To graduate with the MS in CFT, students must complete all required coursework and meet the following standards:

- Complete the program within 4 years of beginning coursework
- Minimum GPA of 3.0 at program completion
- Minimum of 500 client contact hours
- Minimum of 200 relational hours
- Minimum 50 raw (audio, video, or live) supervision hours
- No more than two (six credit hours) C grades in the MSCFT program

Typically, credit from a maximum of four courses may be transferred in from other master's degree programs upon approval by Director.

Program Coursework

Code	Title	Hours
MSSW 601	Human Behavior in the Social Environment I	3
MSSW 603	Diversity, Oppression, and Social Justice Practice	3
MSSW 619	Human Behavior in the Social Environment II	3
MSSW 626	Research Methodology and Design	3
MSSW 633	Social Work and Human Sexuality	3
MSSW 642	Psychopathology	3
MCFT 700	Foundations of Couple and Family Therapy: Theory and Practice	3
MCFT 701	Family Therapy Assessment and Treatment in Diverse Populations	3
MCFT 702	Couple Therapy: Theory and Practice	3
MCFT 703	Contemporary Issues, Community Intersections & Collaborations in CFT	3
MCFT 704	Integrating Family Therapy: Theory and Practice	3
MCFT 705	Professional Issues & Ethics in Couple & Family Therapy	3
MCFT 706	Foundations of Couple and Family Therapy: Theory and Practice II	3
MCFT 710	Couple and Family Therapy Practicum I	1
MCFT 711	Couple and Family Therapy Practicum II	1
MCFT 712	Couple and Family Therapy Practicum III	2
MCFT 713	Couple and Family Therapy Practicum IV	1
MCFT 714	Couple and Family Therapy Practicum V	1
MCFT 721	Family Therapy Supervision I	3
MCFT 722	Family Therapy Supervision II	3
MCFT 723	Family Therapy Supervision III	3
MCFT 724	Family Therapy Supervision IV	3
MCFT 725	Family Therapy Supervision V	3
Minimum Total Hours		60

For additional information, please contact kentcft@louisville.edu or go to the CFT webpage here (<http://uofl.edu/CFT/>).

Concentration Coursework

Students interested in pursuing an optional concentration in Alcohol and Drug Counseling complete nine (9) credit hours of coursework in addition to the 60 credit hours of core program coursework.

Alcohol and Drug Counseling Concentration Coursework

Code	Title	Hours
MSSW 660	Motivation and Change: The Process of Change and Strategies to Elicit Intrinsic Motivation.	3
MSSW 661	Special Issues in Alcohol and Drug Counseling	3
MSSW 662	Substance Use and Substance Use Disorders	3
Minimum Total Hours		9

MSCFT students completing a concentration in Alcohol and Drug Counseling will complete their advanced-year CFT practicum in a specialized setting working with populations affected by substance abuse.

For additional information, please contact kentcft@louisville.edu or go to the CFT webpage here (<http://uofl.edu/CFT/>).

The Master of Science in Couple and Family Therapy program and the concentration in Alcohol and Drug Counseling prepares students to meet the requirements for certification and/or licensure. If you plan to pursue professional licensure or certification you should first determine your state's criteria for examination and licensure to see how/if our program meets those requirements prior to enrollment. We recommend that you also contact your state's licensing board directly to verify that the requirements have not changed recently and to answer any questions especially those regarding additional requirements beyond the degree.

More information about certification or licensure is available at the following website: <https://louisville.edu/oapa/licensure-information> (<https://louisville.edu/oapa/licensure-information/>) (you may search by school or by the name of the program then click on 'View Details' to display the information).

For programs with an online option, more information about certification or licensure is available here: <https://louisville.edu/online/About-Us?tab=disclosures> (<https://louisville.edu/online/About-Us/?tab=disclosures>)

Criminal Justice (MS)



Master of Science in Criminal Justice

Unit: College of Arts and Sciences (<http://louisville.edu/artsandsciences/>) (GA)

Department: Criminal Justice (<https://louisville.edu/justice/>)

Program Webpage (<https://louisville.edu/justice/graduate-degree-programs/master-of-science-in-criminal-justice/>)

Academic Plan Code(s): JA_ _MS, JA_ _MS_0, JA_ _MS_ACC

Program Information

The goals of the Department of Criminal Justice are for students to achieve a specialized understanding of the criminal justice system, criminal behavior, legal processes and the relationship of these phenomena to society. Graduate studies in the Department of Criminal Justice provide students with advanced social and behavioral science skills as well as a detailed and thorough understanding of crime, criminal justice and related processes. Graduates of this program are prepared to continue advanced studies in criminal justice or other social sciences and to assume mid and upper-level leadership positions within criminal justice programs and agencies.

The interdisciplinary nature of the program maintains the dynamic posture that allowed this crime-related discipline to emerge and to mature quickly and successfully. Graduate students are given latitude in choosing elective courses in the Master of Science in Criminal Justice. Elective courses related to the student's program of study are selected from the resources of the entire University. Courses in social work, public administration, law, business, and the various departments of the College of Arts and Sciences are possible electives that the student may consider. Electives outside the department must have the approval of the Director of Graduate Studies. With proper selection, the electives can complement the core criminal justice courses and produce a balanced, interdisciplinary program which is tailored to meet specific professional and career goals.

The combination of the degree programs and the Southern Police Institute makes the program in Criminal Justice a unique blend of theory and practice. The Southern Police Institute is one of the oldest, most respected police management and administration educational programs in the United States.

Our programs are offered in two formats:

- Evening courses on campus, and
- Online.

General Requirements

The general requirements for the Master of Science degree in Criminal Justice are the completion of at least 36 graduate credit hours. The completion of these credit hours may include either thesis or non-thesis option. The thesis option requires the completion of 30 credit hours of graduate level courses and a thesis for a total of 36 credit hours. The non-thesis, professional paper option, requires the completion of 33 credit hours of graduate courses plus a professional paper for a total of 36 credit hours. A cumulative 3.0 grade point average must be maintained for all graduate coursework, grades of D must be repeated.

Students are advised to complete the Criminal Justice core courses prior to electives. Core or specific courses required for graduation total 15 credit hours with the remaining courses being electives. The composition of the list of elective courses will vary from student to student depending on the student's undergraduate major, aspirations and background. Electives outside of our department must have approval from the Director of Graduate Studies.

The degree is offered in two formats, our traditional on-campus classes and also online. Students interested in either format should see the department website (<http://louisville.edu/justice/>) for more information. Students may choose either format or a combination of both methods of delivery.

Accelerated BS/MS in Criminal Justice

The Accelerated BS/MS degree program in Criminal Justice is designed to allow an undergraduate student to earn graduate hours in Criminal Justice during their Senior year. Students will be allowed to earn up to nine (9) credit hours that can be applied to both their undergraduate degree (BS) and their graduate degree (MS) in Criminal Justice.

Students admitted to the Accelerated Master of Science in Criminal Justice degree may enroll in a combination of the following core courses:

- CJ 621 The Criminal Justice System
- CJ 625 Legal Aspects in Criminal Justice Management
- CJ 643 Theories of Crime and Delinquency
- CJ 649 Applied Statistics in Criminal Justice
- CJ 650 Research Methods

Students in the Accelerated BS/MS program in Criminal Justice may only apply their graduate credits earned as an undergraduate at the University of Louisville toward our Master of Science in Criminal Justice degree program.

Students must apply for admission to the program no later than the end of their junior year to be eligible enroll in graduate coursework in their final year of the program. Applicants must have at least a 3.0 GPA at the time of application.

Admission Requirements

Anyone seeking admission to the Master of Science in Criminal Justice degree program must submit an application to the Graduate School that includes the following:

- Transcripts of all undergraduate and graduate work completed. The minimum requirement for admission is the Baccalaureate degree or its equivalent.
- Two letters of recommendation from individuals who can speak to the applicant's academic or professional capabilities.
- An original essay identifying the applicant's background, professional interests and goals. The essay should be 300-500 words and should allow the faculty to better understand the applicant's motivation and the potential for graduate work.
- Completed graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) to the Graduate School.
- Those applicants whose native language is not English and who do not hold a degree from a university where the language of instruction is English must also submit scores from the Test of English as a Foreign Language (TOEFL), with a minimum score of 80 on the Internet-based test (iBT) or 213 paper based test (PBT) or 550 (old test), IELTS score of 6.5 overall band score from the academic module exam or official Duolingo score of 105.

The Department of Criminal Justice is committed to providing an opportunity to a diverse range of students. The Department of Criminal Justice has adopted the Council of Graduate Schools recommendation

for a holistic approach to our admission criteria. Successful applicants will typically have a strong undergraduate record, and excellent letters of recommendation that speak to the nominee's scholarly ability and potential to succeed in a doctoral program. However, candidates may have other documented strengths that speak to the potential for success as evidenced by: prior research experience; exceptional community engagement or service; leadership experience; evidence of creativity or resilience; standardized test scores (GRE); or unique experiences or background that will contribute to our program.

The holistic review of applications allows our faculty to select the best students who fit the research areas offered within the department. Application information that highly influences the decision to offer admission includes the previous institution attended, research interests, grade point average, letters of recommendation, personal statements and resumes, and the experience, background or qualities that make the applicant eligible for admission.

Degree Requirements

A cumulative 3.0 grade point average must be maintained for all graduate coursework. Students may have no more than six (6) credit hours of grades of C and any grade of D must be repeated.

Students are advised to complete the Criminal Justice core courses prior to electives. Core or specific courses required for graduation total 15 credit hours with the remaining courses being electives or research.

Thesis Option

Code	Title	Hours
CJ 621	The Criminal Justice System	3
CJ 625	Legal Aspects of Criminal Justice Management	3
CJ 643	Theories of Crime and Delinquency	3
CJ 649	Applied Statistics in Criminal Justice	3
CJ 650	Research Methods	3
Criminal Justice Electives - see list below		15
CJ 699	Thesis	6
Minimum Total Hours		36

Professional Paper Option

Code	Title	Hours
CJ 621	The Criminal Justice System	3
CJ 625	Legal Aspects of Criminal Justice Management	3
CJ 643	Theories of Crime and Delinquency	3
CJ 649	Applied Statistics in Criminal Justice	3
CJ 650	Research Methods	3
Criminal Justice Electives - see list below		18
CJ 698	Professional Paper - WR (http://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
Minimum Total Hours		36

List of Approved Criminal Justice Electives - A minimum of three (3) credit hours must be 600+ level

Code	Title	Hours
CJ 500	Crime and Criminal Justice in the Cinema	3
CJ 505	International Terrorism	3
CJ 507	Crime Prevention Through Environmental Design	3
CJ 509	Crime Analysis	3
CJ 510	Managing Conflict, Change and Justice	3
CJ 516	Juvenile Justice Issues	3
CJ 517	Gangs in America	3
CJ 519	Domestic and Family Violence	3
CJ 520	Capital Punishment - WR (http://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
CJ 521	White Collar Crime - WR (http://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
CJ 522	Serial & Mass Murder	3
CJ 523	Race and Gender Issues in Criminal Justice - WR (http://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
CJ 530	Intro to Homeland Security	3
CJ 531	Covert Operations in Policing	3
CJ 576	Managing Organizational Performance	3
CJ 577	Trauma Informed Policing	3
CJ 578	Criminal Justice Leadership - WR (http://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
CJ 580	International Service Learning: Criminal Justice Seminar	3
CJ 596	Seminar in Criminal Justice	3
CJ 597	Ethics in Criminal Justice - WR (http://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
CJ 602	Criminal Justice History	3
CJ 605	Police and Society	3
CJ 606	Personnel Management in the Criminal Justice System	3
CJ 607	Seminar in Law and Justice	3
CJ 609	Economic Analysis of Crime	3
CJ 610	Theoretical Foundation of Corrections	3
CJ 611	Critical Issues in Corrections	3
CJ 612	Criminal Justice Administration: Police	3
CJ 613	Advanced Comparative Criminal Justice	3
CJ 614	Seminar in Policing	3
CJ 626	Emergency Management	3
CJ 627	Computer and Cyber Crime	3
CJ 630	Critical Infrastructure Protection and Resilience	3
CJ 644	Seminar in Juvenile Justice	3
CJ 652	Constitutional Issues in Criminal Justice	3
CJ 653	Communities and Crime	3
CJ 655	International Perspectives on Violence	3
CJ 656	Crime Mapping	3
CJ 665	Special Topics in Justice and Criminology	3

CJ 670	Directed Studies/Readings	3
CJ 690	Practicum	1-6

Electives from outside the Criminal Justice department must have the approval of the Director of Graduate Studies.

Criminal Justice (PhD)

Doctor of Philosophy in Criminal Justice

Unit: College of Arts and Sciences (<http://louisville.edu/artsandsciences/>) (GA)
 Department: Criminal Justice (<http://louisville.edu/justice/>)
 Program Webpage (<http://louisville.edu/justice/graduate-degree-programs/doctor-of-philosophy-in-criminal-justice-program/>)
 Academic Plan Code(s): JA_PPHD

Program Information

The Department of Criminal Justice offers a Doctor of Philosophy in Criminal Justice. The PhD in Criminal Justice prepares graduates for academic careers (e.g., teaching and research) as well as public sector (e.g., research, policy analysis and development, planning, program development and evaluation) organizations.

The program consists of a core curriculum and electives that students may use to develop their particular areas of specialization. The core provides a broad orientation and the electives enable students to develop expertise in a particular field. The curriculum requires 54 credit hours: 18 credit hours of core courses, 18 credit hours of specialization courses, six (6) credit hours of qualifying project, and twelve (12) credit hours of dissertation research. Students qualify for official candidacy to the PhD by satisfactorily completing all course work and the qualifying project.

Admission Requirements

- Completed graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>)
- Transcripts of previous undergraduate and graduate study
- Three letters of recommendation
- Personal statement
- Writing sample
- Curriculum vitae (CV) or resume

Additionally, applicants must show evidence, on their transcript, of the completion of both graduate-level statistics and research methods courses. The Department of Criminal Justice has adopted the Council of Graduate Schools recommendation for a holistic approach to our admission criteria. Successful applicants will typically have strong scores on the standardized test, a strong undergraduate and master's degree record, and excellent letters of recommendation that speak to the nominee's scholarly ability and potential to succeed in a doctoral program. However, candidates may have other documented strengths that speak to the potential for success as evidenced by: prior research experience; exceptional community engagement or service; leadership experience; evidence of creativity or resilience; unique experiences or background that will contribute to our program. The holistic review of applications allows our faculty to select the students who best fit the research areas offered within the department.

Those applicants whose native language is not English and who do not hold a degree from a university where the language of instruction is English must also submit scores from the Test of English as a Foreign Language (TOEFL), with a minimum score of 80 on the Internet-based test

(iBT); IELTS scores of at least 6.5 overall band score from the academic module exam; or Duolingo overall score of 105.

Both full and part-time study is permitted. Part-time students are required to meet residency requirements consisting of four continuous semesters of enrollment and participation in departmental activities offered to meet the need for scholarly integration and academic immersion in the program.

Degree Requirements

Code	Title	Hours
Criminal Justice Core Coursework		
CJ 745	Advanced Criminal Behavior	3
CJ 748	Seminar in Criminal Justice Program Planning & Evaluation	3
CJ 749	Advanced Statistical Analysis in Criminal Justice	3
CJ 750	Field Research in Criminal Justice	3
CJ 751	Advanced Statistical Computer Applications for Criminal Justice	3
CJ 752	Advanced Research Methods in Criminal Justice	3
CJ 795	Criminal Justice Qualifying Project	6
CJ 799	Dissertation Research in Criminal Justice	12
Elective Coursework ¹		18
See list of CJ electives below		
Minimum Total Hours		54

¹ Electives outside the department must be approved by the Director of Graduate Studies

Criminal Justice Electives

Code	Title	Hours
CJ 602	Criminal Justice History	3
CJ 605	Police and Society	3
CJ 606	Personnel Management in the Criminal Justice System	3
CJ 607	Seminar in Law and Justice	3
CJ 609	Economic Analysis of Crime	3
CJ 610	Theoretical Foundation of Corrections	3
CJ 611	Critical Issues in Corrections	3
CJ 612	Criminal Justice Administration: Police	3
CJ 613	Advanced Comparative Criminal Justice	3
CJ 614	Seminar in Policing	3
CJ 626	Emergency Management	3
CJ 627	Computer and Cyber Crime	3
CJ 630	Critical Infrastructure Protection and Resilience	3
CJ 644	Seminar in Juvenile Justice	3
CJ 652	Constitutional Issues in Criminal Justice	3
CJ 653	Communities and Crime	3
CJ 655	International Perspectives on Violence	3
CJ 656	Crime Mapping	3
CJ 665	Special Topics in Justice and Criminology	3
CJ 670	Directed Studies/Readings	3
CJ 690	Practicum	3

CJ 740	Seminar in Crime Prevention and Social Control	3
CJ 798	Mentored Research in Criminal Justice	3

Curriculum and Instruction (EdS)

Specialist in Education in Curriculum and Instruction

Unit: College of Education and Human Development (<https://louisville.edu/education/>) (GE)

Department: Elementary, Middle & Secondary Teacher Education (<https://louisville.edu/education/departments/mise/>)

Program website (<https://louisville.edu/education/degrees/es-ci/>)
Academic Plan Code(s): C&I_EDS

Program Information

The EdS (Education Specialist) degree in Curriculum and Instruction is a 30 credit hour, post-master's degree program. The program prepares classroom teachers to become curriculum and instruction specialists so that they are well-prepared to lead within their schools, districts, or region, specific to a particular area of teaching.

Potential candidates for this degree are teachers who have completed a master's degree in education or a Master of Arts in Teaching, or related field, and are interested in continuing their educational pursuits but are not interested in pursuing a PhD in Curriculum and Instruction.

The program will provide graduates with expertise needed for strong instructional leadership in schools, including extensive knowledge of:

- Curriculum
- Leadership and coaching
- Data analysis and research methods to support data-driven decision making
- One area of expertise within teaching (e.g., science teaching, elementary mathematics specialist, reading specialist, special education)

Admission Requirements

- Master's degree in Education (or related area) with a minimum 3.3 GPA
- Official undergraduate and graduate transcripts
- A written rationale for pursuing the degree, including philosophy of education (limit of one page)
- A current resume or vita
- Three years of full-time K-12 teaching experience
- Two written letters of recommendation attesting to the candidate's skills and understanding of (a) ability to improve student achievement, (b) leadership, (c) advanced knowledge of curriculum, instruction, and assessment. One must be from the current site supervisor.
- Completion of 6 hours of advanced teaching coursework (beyond initial teacher preparation program)

Degree Requirements

The student will meet with their advisor to develop an area of focus/emphasis*.

Code	Title	Hours
Required Courses:		
EDAP 770	Education Specialist Research	3
Quantitative and Qualitative Coursework (6-9 hours from the courses 6-9 below):		
LEAD 601	Applied Statistics	
LEAD 701	Intermediate Applied Statistics	
LEAD 702	Applied Multiple Regression	
LEAD 704	Qualitative Field Research Methods	
LEAD 705	Qualitative Data Analysis and Representation	
Leadership (6 hours from the courses below): ¹		
EDAP 624	Curriculum Theory	6
EDAP 677	Developing Collaborative Groups: Facilitating, Coaching and Mentoring	
LEAD 633	Systems and Structures for School Improvement	
LEAD 634	FUNDAMENTALS OF SCHOOL LEADERSHIP	
LEAD 636	Creating Equitable & Reliable Learning Environments	
Specialization or Concentration		12-15
Midpoint Assessment ²		
Exit Requirements ³		

¹ Or equivalent course approved by faculty advisor.

² Successful completion of 15 credit hours; scored exemplary or target on advanced program rubrics (by instructor); acceptable dispositions rubric (scored by advisor). Minimum 3.0 GPA.

³ Successful completion of all required coursework and research project. Minimum 3.3 GPA with no grade lower than "C".

Areas of focus/emphasis* include but are not limited to the list below:

Elementary Math Specialist

English as a Second Language Endorsement

Classroom Reading Endorsement

Instructional Technology

Diversity Literacy

Special Education

Content Area Teaching Endorsement

*Please meet with advisor to develop a plan that meets your goals.

Courses required vary based upon the content area.

Curriculum and Instruction (PhD)

Doctor of Philosophy in Curriculum and Instruction

Unit: College of Education and Human Development (<http://louisville.edu/education/>) (GE)

Department: Elementary, Middle and Secondary Education (<http://louisville.edu/education/departments/mise/>)

Program Webpage (<http://louisville.edu/education/degrees/phd-ci/>)

Academic Plan Code: C&I_PHD

Program Information

The doctoral degree is granted in recognition of scholarly proficiency and distinctive achievement in a specific field/discipline. All candidates for a doctoral degree in the College of Education and Human Development must successfully complete qualifying exams and a dissertation/professional portfolio that clearly indicates the candidate has mastered and can exhibit/articulate the content knowledge, skills, and dispositions specific to their discipline and can utilize appropriate research methodologies to contribute to the body of knowledge in their field.

Areas of Emphasis Within the Doctoral Program in Curriculum and Instruction

A master's degree in a related field is a required prerequisite to the Doctoral Program in Curriculum and Instruction. All students must meet competencies in research, teaching and teacher education, and stewardship of the profession. Students also choose one of the following areas of emphasis and develop knowledge specific to their discipline.

- **The Languages, Literacies, Cultures, and Communities (L2C2) emphasis** operates on the belief that languages, literacies, cultures, and communities are powerful, transformative, political, and multimodal. Faculty are committed to creating opportunities to think and investigate teaching and learning across the lifespan (both in and out of school settings) from a critical sociocultural perspective.

The L2C2 emphasis provides a wide variety of courses and experiences focused on theory, research, equity, and practice related to identities, diversity, oral and written language, and culture. This includes the study of reading and writing processes, culturally sustaining pedagogies, digital literacies, early childhood education, and discourse analysis, among many.

- **The Science, Technology, Engineering, and Mathematics (STEM) program emphasis** offers a wide variety of courses and experiences focused on theory, research, equity, and practice in STEM education.

By studying and engaging in research and teaching with nationally-recognized leaders in mathematics or science education, students develop expertise in 1) how P-20 students think and learn, 2) how educators facilitate that learning, and 3) how to conduct scholarly investigations to answer important STEM education questions.

- **The Special Education emphasis** adheres to the principle of evidence-based practice. Faculty believe that all students can learn, regardless of ability or disability, and practice must be grounded in the best available scientific evidence.

Students in the Special Education emphasis will develop skills in generating new knowledge through conducting research so that they

can add to the evidence base. They will also enhance their ability to synthesize existing evidence and translate research into practice by teaching preservice teachers, providing professional development in schools, and authoring practitioner-focused publications.

Distinctive Characteristics of Doctoral Programs in the College of Education and Human Development

Social Justice and Equity

Doctoral students in our program build experience and expertise in the issues of social justice and equity which aligns with our metropolitan mission and focus on student achievement.

Leadership

Our doctoral students gain expertise in supervising and leading others to achieve organizational goals and missions, managing complex systems, addressing administrative issues and procedures, conducting research to enhance leadership and teaching others about the art of organizational leadership.

Practical Experience

The doctoral program contains practicums, internships, or embedded field experience that aligns with program and career goals. These mentored experiences may include teaching, research, administration or other appropriate areas.

Scholarship/Research

An emphasis on scholarship includes experience and mentorship in ethics, publications, presentation, grantsmanship, and other forms of creative activity. The research component is characterized by the development of vertical research teams: senior faculty, junior faculty, doctoral students, master's degree students, and in some programs, undergraduate students, working together on research projects and research areas. These may be bolstered by partnerships with local school districts, businesses, or community agencies.

Admission Requirements

Application Deadlines

There are four annual admission deadlines. Depending on specific individual goals and situations, different deadlines may be more relevant for you.

Fall semester start, full-time status with Graduate Assistantship funding possibilities:

- **November 1**

Graduate Assistantships (<http://louisville.edu/education/financialaid/assistantships/>) (GA) and University Fellowships (<http://louisville.edu/graduate/current-students/funding-opportunities/university-fellowships/>) are competitive and awarded to full-time students for the fall semester well in advance—as early as mid-January for Fellowships—and typically by late March or April for Graduate Assistantships. Applications for both should be submitted by the November 1 deadline.

Specify the subsequent fall semester as your intended start date on the application. Indicate interest in assistantships on your *Statement of Purpose*.

Part-time doctoral student work or otherwise not interested in Graduate Assistantship funding:

- **November 1 - Spring** semester start (or later semester as indicated on application)
- **February 15 - Summer** semester start (or later semester as indicated on application)
- **May 1 - Fall and Late Summer** semester start (or later semester as indicated on application)

Members of the Curriculum and Instruction PhD admissions committee evaluate all applications after the appropriate admission deadline. Admission decisions are made by the professional judgment of the admissions committee according to established criteria. Admission to the program is competitive and preference is given to applicants who have strong academic records, experiences, and abilities that show demonstrated excellence in professional performance and research potential. All applicants will be notified in writing regarding their admission; typically this notification occurs approximately three weeks after the admissions deadline.

To be considered for admission, all materials must be submitted prior to the admission committee's review. If materials are incomplete, applicants will be notified and may submit again during the next review.

Please note: Application for admission consists of two parts:

- a. Documents submitted to the University of Louisville for Graduate Admission, and
- b. Materials submitted directly to the PhD Curriculum and Instruction program by the established deadline date.

See the Application Process Overview [PDF] (<http://louisville.edu/education/degrees/phd-ci/files/phd-ci-application-process-overview.pdf>) document for details.

Admission Materials

- Graduate Application (online University of Louisville Graduate Application) (<http://louisville.edu/graduate/apply/>)
- Three Letters of Recommendation [PDF] (<https://louisville.app.box.com/s/w9jkkbu3cg10q7jtbwxo5rdkn2d1mjaa/>) (see Directions for Applying (<https://louisville.edu/graduate/futurestudents/application-directions/>) for more information). If you have recommendation letters on file from a previous University of Louisville program application, you will need three new letters of recommendation for this application that speak to your potential in a doctoral program. In addition to the standard University form linked above, please have these individuals submit letters with supporting details for the recommendation. At least one of the three recommendation letters you choose should come from someone familiar with the rigor and requirements of a doctoral program.
- TOEFL/IELTS/Duoling scores for non-native speakers of English (if needed - see Directions for Applying for more information)
- Transcripts from each college you have attended other than the University of Louisville. Have all official non-University of Louisville transcripts sent to the Graduate School.
- Statement of Purpose [PDF] (<http://louisville.edu/education/degrees/phd-ci/files/phd-ci-statement-of-purpose.pdf>) To assist applicants with the process of crafting a strong Statement of Purpose, in addition to the directions on the Statement of Purpose document, an Annotated Exemplar of Statement of Purpose [PDF] (<http://louisville.edu/education/degrees/files/phd-ci-annotated-exemplar-of-statement-of-purpose.pdf>) is provided here for guidance. This

document provides detailed annotated notes about the strengths of a particular example Statement of Purpose.

- Interview Guidelines and Advisor Signature [PDF] (<http://louisville.edu/education/degrees/files/phd-ci-interview-guidelines-advisor-signature.pdf>). The process of mutually identifying a faculty member who agrees to serve as your doctoral advisor includes an applicant-initiated two-way interview process. As noted on the linked form, faculty with whom you interview in the process of identifying an appropriate advisor are requested to submit input to the admissions committee – such input becomes a portion of the evidence with which the admissions committee will make an admission decision.
- Resume or Curriculum Vitae [PDF] (<http://louisville.edu/education/degrees/files/phd-ci-resume-or-curriculum-vita.pdf>)

Degree Requirements

Master's Degree Prerequisite + 60 Credit Hours PhD Coursework Minimum

The student and program committee must develop courses, programs, and experiences that clearly identify and address the following areas: research, teaching and teacher education, stewardship of the profession and knowledge of discipline. These areas of emphasis must have descriptive competencies that the student should attain and the committee can assess.

Code	Title	Hours
Specialty Components		
EDAP 711	Doctoral Professional Seminar: First Year	3
Area of Emphasis		
30 credit hours selected with Program Committee approval		30
Research Methodology		
LEAD 601	Applied Statistics (see note) ¹	3
LEAD 704	Qualitative Field Research Methods	3
Research Electives		
Field survey research, additional qualitative and/or quantitative methodologies, etc. ^{2,3}		6
Doctoral/Dissertation Research		
EDAP 795	Doctoral Research	15
Minimum Total Hours		60

¹ Students with relevant statistical background should take LEAD 701.

² Selected with Program Committee approval and within program guidelines/framework

³ LEAD 600 may not be used for these courses

Cybersecurity (CERT)

This program was approved for students entering the university in the Summer 2023–Spring 2024 catalog year. For more information about catalog year, go to Catalog Year Information (<http://catalog.louisville.edu/archive/2023-2024/undergraduate/university-wide-unit-specific-policies/catalog-year/>).

Graduate Certificate in Cybersecurity

Unit: Speed School of Engineering (<http://engineering.louisville.edu>) (GS)

Department: Computer Science and Engineering (<https://engineering.louisville.edu/academics/departments/computer/>)

Academic Plan Code(s): NIS_CNSGS, NIS_CNSGSO

Program Information

This program can be completed in a traditional classroom format or entirely online (<http://louisville.edu/online/programs/certificate-programs/graduate-certificate-in-cybersecurity/>).

The graduate certificate in Cybersecurity is designed for advanced computer professionals who wish to strengthen their knowledge and skills in the fast-changing field of cybersecurity, as well as students majoring in disciplines other than Computer Science and Engineering who want to gain knowledge and skills in cybersecurity.

The Cybersecurity graduate certificate program consists of twelve (12) credit hours with two required courses from the Computer Science and Engineering department and two elective courses selected from a list of relevant elective courses in the Computer Science and Engineering department.

As networking technology continues to rapidly advance, so do new and sophisticated threats and attacks to the nation's information infrastructure. The Graduate Certificate in Cybersecurity from the University of Louisville will prepare you to respond to these challenges, training you to monitor and identify cybercriminals.

Admission Requirements

The admission standards for the Graduate Certificate program in Cyber Security are as follows:

- All admission applications for the Graduate Certificate program shall include the following:
 - Completed graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) for the Graduate School,
 - Application fee,
 - Official transcript certifying at least a bachelor's degree. All transcripts not in English must be certified as authentic and translated verbatim into English.
- The minimum requirement for admission is the baccalaureate degree or its equivalent from an accredited institution or current enrollment in a graduate Speed School program.
- The successful applicant will typically have an undergraduate grade point average of 2.75 or above (on a 4.00 scale).
- International students whose primary language is not English must show English language proficiency. Applicants must either submit an official TOEFL, IELTS or Duolingo score or demonstrate a degree award from an acceptable English language institution. The successful applicant will typically have a total TOEFL score of 80, higher or an overall IELTS score of 6.5 or higher or Duolingo score of 105.

Students enrolling in this graduate certificate program will need to have sufficient background to be successful. Therefore, students must have completed the required course prerequisites, or have equivalent knowledge from courses taken at other universities, or from work experience. Prerequisites include courses (or equivalent) such as CSE 130, CSE 310, and CSE 503.

Students can enroll in a Graduate Certificate program either as a non-degree seeking student or as a student simultaneously enrolled in a graduate degree program and this graduate certificate program.

Students who wish to earn a graduate degree must meet all admission criteria for the degree program.

All students enrolled in a graduate certificate program are expected to make steady and satisfactory progress toward the completion of the certificate. Students who are not enrolled for a period of more than 12 months will be considered to have withdrawn from the certificate program. Students who seek to return after such a period of time must contact the graduate program director.

Program Requirements

A total of twelve (12) credit hours are required with two required courses and two elective courses.

Code	Title	Hours
Required Courses		
CSE 564 or CSE 568	Introduction to Cryptography Computer Forensics	3
CSE 566	Information Security	3
Select two of the following:		6
CSE 546	Introduction to Machine Learning	
CSE 565	Software Security	
CSE 590	Special Topics in Computer Science and Engineering (Computer and Cyber Security)	
CSE 613	Network Security	
CSE 617	Mobile Computing	
CSE 631	Database Security	
CSE 632	Data Mining	
CSE 694	Special Topics in Computer Science and Engineering	
CSE 694	Special Topics in Computer Science and Engineering (Advanced Cryptography)	
Minimum Total Hours		12

The Certificate Program of Study must be completed with a 3.00 GPA or better for all graduate courses used to satisfy certificate requirements.

Graduate certificate students must take all certificate course work at the University of Louisville. No transfer credits will be accepted toward a graduate certificate.

Data Science (CERT)

Graduate Certificate in Data Science

Unit: Speed School of Engineering (<http://engineering.louisville.edu>) (GS)

Department: Computer Science and Engineering (<https://engineering.louisville.edu/academics/departments/computer/>)
Academic Plan Code(s): DTMGCDM, DTMGCDMO

Program Information

This program can be completed in a traditional classroom format or entirely online (<http://louisville.edu/online/programs/certificate-programs/graduate-certificate-in-data-science/>).

To address the need for trained professionals in the interdisciplinary field of data mining, the Department of Computer Science and Engineering and the Department of Mathematics faculty have developed a joint certificate program in data mining. The certificate will consist of eighteen (18)

credit hours, with three required courses from Computer Science and Engineering and three elective courses selected from a list of relevant elective courses in Computer Science and Engineering and Mathematics.

Certificate Summary

Code	Title	Hours
Core Coursework		9
CSE/Approved Mathematics Electives		9
Minimum Total Hours		18

Admission Requirements

The admission standards for the Graduate Certificate program in Data Science are as follows:

- All admission applications for the Graduate Certificate program shall include:
 - A completed graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) for the Graduate School
 - Application fee
 - Official transcript certifying at least a bachelor's degree. All transcripts not in English must be certified as authentic and translated verbatim into English.
- The minimum requirement for admission is the baccalaureate degree or its equivalent from an accredited institution or current enrollment in a graduate Speed School program.
- The successful applicant will typically have an undergraduate grade point average of 2.75 or above (on a 4.00 scale).
- International students whose primary language is not English must show English language proficiency. Applicants must either submit an official TOEFL, IELTS or Duolingo score, or demonstrate a degree award from an acceptable English language institution. The successful applicant will typically have a total TOEFL score of 80 or higher, an overall IELTS score of 6.5 or Duolingo score of 105.

Students can enroll in a Graduate Certificate program either as a non-degree seeking student or as a student simultaneously enrolled in a graduate degree program and this graduate certificate program. Students who wish to earn a graduate degree must meet all admission criteria for the degree program.

All students enrolled in a graduate certificate program are expected to make steady and satisfactory progress toward the completion of the certificate. Students who are not enrolled for a period of more than 12 months will be considered to have withdrawn from the certificate program. Students who seek to return after such a period of time must contact the graduate program director.

Certificate Requirements

The following certificate requirements are mandatory of all Graduate Certificate candidates:

- The Certificate Program of Study must be completed with a 3.00 GPA or better for all graduate courses used to satisfy certificate requirements.
- Graduate certificate students must take all certificate course work at the University of Louisville. No transfer credits will be accepted toward a graduate certificate.

Program Requirements

Code	Title	Hours
CSE 535	Database Systems	3
or CSE 536	Data Management and Analysis	
CSE 632	Data Mining	3
CSE 635	Data Mining with Linear Models	3
Select three of the following:		9
CSE 522	Performance Evaluation of Computer Systems	
CSE 532	Python and Data Analytics	
CSE 538	Graph Database and Graph Analytics	
CSE 545	Artificial Intelligence	
CSE 546	Introduction to Machine Learning	
CSE 547	Deep Learning Algorithms and Methods	
CSE 551	Data Visualization for Data Science	
CSE/IE 563	Experimental Design in Engineering	
CSE 619	Design and Analysis of Computer Algorithms	
CSE 621	Web Mining for E-Commerce and Information Retrieval	
CSE 622	Simulation and Modeling of Discrete Systems	
CSE 627	Digital Image Processing	
CSE 630	Advanced Databases	
CSE 660	Introduction to Bioinformatics	
CSE 694	Special Topics in Computer Science and Engineering (Legal Issues in Data Mining)	
CSE 694	Special Topics in Computer Science and Engineering (BIG DATA: Document-oriented DB)	
CSE 694	Special Topics in Computer Science and Engineering (Related Data Mining)	
MATH 561	Probability	
MATH 562	Mathematical Statistics	
MATH 667	Statistical Inference	
Minimum Total Hours		18

The Certificate Program of Study must be completed with a 3.00 GPA or better for all graduate courses used to satisfy certificate requirements.

Graduate certificate students must take all certificate course work at the University of Louisville. No transfer credits will be accepted toward a graduate certificate.

Dentistry (MSD)

Master of Science in Dentistry (MSD)

Unit: School of Dentistry (<https://louisville.edu/dentistry/>)

Program Website (<https://louisville.edu/dentistry/residency/>)

Academic Plan Code(s): ENDOMSDCEN, ORTHMSDCOR, PEDDMSDCPD, PERIMSDCPE, PROSMSDCPO

Program Information

The School of Dentistry offers a program of study leading to the Master of Science Degree in Dentistry for postgraduate students/residents enrolled in Advanced Specialty Certificate Programs in Endodontics, Orthodontics, Pediatric Dentistry, Periodontics, and Prosthodontics.

The courses for the Master of Science in Dentistry will total 31 credit hours. The curriculum is at least 19 credit hours (11 core and 8 selective

courses), plus credit for research and thesis/publication (minimum twelve (12) credit hours). In addition, depending on the specific accreditation requirements of the specialty, either two or three years of clinical training are required.

The credit hours needed to complete the MSD and the certificate are listed below.

M.S.D./Specialty Programs	Credit Hours	Time to Completion
Endodontics	69	2 years
Orthodontics	72	2 years
Pediatric Dentistry	70	2 years
Periodontics	103.5	3 years
Prosthodontics	94	3 years

The School of Dentistry post-professional Master of Science in Dentistry with Specialty Certificate programs offer didactic and clinical training leading to certification in the specific dental specialty area. Completion of an accredited certificate program allows the student to be recognized by state boards of dentistry and by the respective specialty boards as eligible for specialty board examination and specialty dental licensure.

These programs help to develop skillful clinicians and researchers for careers in academic dentistry or private practice in the specialty areas of Endodontics, Orthodontics, Pediatric Dentistry, Periodontics and Prosthodontics. Excellent training in clinical dentistry, teaching skills, and the process and interpretation of biomedical research is essential to equip tomorrow's specialists with the proper scientific background to deal with the changes and challenges inherent in a profession undergoing rapid scientific advancement. These postgraduate students are exposed to a wide variety of clinical techniques by a group of highly qualified faculty with diverse training and varied backgrounds. The philosophy of the programs is that clinical excellence is based on technical proficiency, expert diagnostic skills and broad-based knowledge of the specific specialty literature.

The didactic portion of the curriculum explores the concepts, designs, regulation, interpretation, and presentation of modern biomedical research upon which the practice of modern Endodontics, Orthodontics, Pediatric Dentistry, Periodontics, or Prosthodontics is based.

The Master of Science in Dentistry trains students in research concepts allowing them to design and complete a clinical or basic science research project. As a part of this program, the student is guided to design a research project and write a research proposal including any informed consent and data collection forms. The student will then conduct the research project to completion. Federal regulations and University of Louisville policy require that all research involving human subjects or analysis of data gathered from human subjects, regardless of funding status, be reviewed and approved by the IRB prior to the implementation of any research activity. After completion of the research project, the student will present the research project in both oral and written form. The oral presentation (defense) includes a review of the literature relevant to the research project, analysis of all data using appropriate statistical tests, and comparison of the results of the project to similar research in the dental literature. The student will also write a thesis or a paper that is suitable for submission and publication in an appropriate peer-reviewed journal.

Students who are enrolled in Endodontics, Orthodontics, Pediatric Dentistry, Periodontics, or Prosthodontics will complete the requirements

for the Master of Science in Dentistry in conjunction with the awarding of the specialty certificate.

Program Descriptions

MSD/Endodontics

Endodontics is the branch of dentistry which is concerned with the morphology, physiology, and pathology of the human dental pulp and tissues around the tooth root. Its study and practice encompass the basic and clinical sciences, including biology of the normal pulp, the etiology, diagnosis, prevention and treatment of diseases and injuries of the pulp and associated conditions occurring around the tooth root.

MSD/Orthodontics

Orthodontics is the dental specialty that includes the diagnosis, prevention, interception, and correction of malocclusion of the teeth, as well as neuromuscular and skeletal abnormalities of the developing or mature orofacial structures.

MSD/Pediatric Dentistry

Pediatric Dentistry is an age-defined specialty that provides both primary and comprehensive preventive and therapeutic oral health care for infants and children through adolescence, including those with special health care needs.

MSD/Periodontics

Periodontics is that specialty of dentistry which encompasses the prevention, diagnosis, and treatment of diseases of the supporting and surrounding tissues of the teeth or their substitutes and the maintenance of the health, function and aesthetics of these structures and tissues.

MSD/Prosthodontics

Prosthodontics is the dental specialty pertaining to the diagnosis, treatment planning, rehabilitation and maintenance of the oral function, comfort, appearance and health of patients with clinical conditions associated with missing or deficient teeth and/or oral and maxillofacial tissues using biocompatible substitutes.

Admission Requirements

After acceptance into an Advanced Specialty Certificate Program in Endodontics, Orthodontics, Pediatric Dentistry, Periodontics or Prosthodontics.

Applications are not processed until the application fee is received and all required application materials have been received by the Graduate School, Graduate Admissions.

Admission Credentials

- Graduate Application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) submitted to the Graduate School
- Application fee
- Official transcripts of all college coursework, including evidence of a baccalaureate degree. The minimum grade point average that will be considered for unconditional acceptance and admission is GPA 3.0 (on a 4-point scale). Applicants with DMD degrees from dental schools that do not provide grades are still eligible to apply.
- Two letters of recommendation
- TOEFL, Duolingo or IELTS scores are required if English is not the applicant's native language. The minimum acceptable proficiency scores are as follows: TOEFL (80), Duolingo (105) and IELTS (6.5).

- For international applicants, Official Course-by-Course Evaluation Report from ECE (Educational Credential Evaluators, Inc.), www.ece.org (<http://www.ece.org>).
- Any provisional or special conditions acceptances shall be made on an individual basis and shall require a statement of the rationale for the exception, plans for monitoring progress and performance and stated success criteria. Such justification must be made in writing and must be accepted by the Vice Provost for Graduate Affairs. This will allow consideration of special circumstances in which the potential for high quality graduate performance has been clearly demonstrated by other means.

Program Requirements

All of the specialty programs will require eleven (11) credit hours in the following courses:

MSD Core Coursework

Code	Title	Hours
OIID 501	Biomedical Data Analysis: Experimental Design and Statistics	3
OIID 601	Introduction to Oral Biology Research	2
OIID 606	Oral Biology Communication	2
OBIO 617	Advanced Oral Pathology	1
OBIO 622	Multiple-Disciplinary Seminars	1
ASNB 675	Advanced Head and Neck Anatomy	2

MSD Electives

All of the specialty programs are also required to take at least eight (8) credits hours from the following list of electives:

Code	Title	Hours
Oral Immunology and Infectious Diseases Electives		
OIID 600	Concepts in Oral Immunology	2
OIID 604	Oral Microbiology	3
OIID 605	Oral Health Seminars	0.5
OIID 610	Advanced Topics in Oral Biology ¹	1-4
Oral Biology Electives		
OBIO 611	Craniofacial Osteology	1-3
OBIO 612	Craniomaxillofacial Diagnostic Imaging	2-4
OBIO 613	The Diagnosis & Treatment of Temporomandibular Disorders	1
OBIO 614	Advanced Oral Diagnosis and Oral Medicine	1
OBIO 615	Advanced Clinical Pharmacology	1
OBIO 616	Overview of Medical Genetics in Oro-Facial Disease	1.5
OBIO 623	Advanced Implantology	1

Research/Thesis

In addition to these 19 credit hours, each postgraduate student/resident will complete a research project that will be supervised by the specialty program director or a designated faculty member.

Code	Title	Hours
OIID 619	Graduate Research	1-8
OIID 620	Thesis	1-8

Code	Title	Hours
Total Minimum Hours		31

In addition to the completion of the core curriculum and the postgraduate research project, there are didactic and clinical courses required for the completion of the necessary hours needed for each certificate (see Overview tab).

¹ Prerequisite: OIID 600 or consent of instructor. Selected areas will be investigated in depth, using one or more of a variety of formats, including lectures, seminars, tutorials, and research projects.

Distilled Spirits Business (CERT)

Graduate Certificate in Distilled Spirits Business

Unit: College of Business (<https://business.louisville.edu/>) (GB)
Program Website (<http://louisville.edu/online/programs/certificate-programs/distilled-spirits-business-certificate/>)
Academic Plan Code(s): SPIRCDSO

Program Information

This program is completed entirely online (<http://louisville.edu/online/programs/certificate-programs/distilled-spirits-business-certificate/>).

The Distilled Spirits Business Certificate is a nine (9) credit hour certificate that provides broad-based coverage of the unique knowledge, skills, and awareness needed to manage business operations in the distilled spirits industry. The program's integrated curriculum—with a focus on marketing, finance, operations, and more—will help individuals understand how different business functions operate interdependently.

The curriculum was designed in close partnership with industry experts. The six accelerated, highly focused, 1.5-credit hour courses are targeted to prospective and relatively new employees of the distilled spirits industry, who intend to work in business operations of the industry.

The Distilled Spirits Business certificate can be taken in conjunction with the MBA program (<https://catalog.louisville.edu/graduate/programs-study/master-business-administration/>). For students who are accepted into the MBA program, it will count towards fulfilling elective requirements in the MBA curriculum.

Admission

Students must have a bachelor's degree from a regionally-accredited university with an undergraduate GPA of 2.0 or higher to be admitted to the program.

GMAT/GRE scores are not required for admission to the certificate program.

A graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) is required.

Note: Students who desire to complete an MBA in conjunction with the Distilled Spirits Business certificate must be separately admitted to the MBA program (<http://catalog.louisville.edu/archive/2023-2024/graduate/programs-study/master-business-administration/>).

Program Requirements

Code	Title	Hours
SPIR 610	Distilled Spirits Industry Overview & Regulatory Issues	1.5
SPIR 620	Distilled Spirits Finance Fundamentals	1.5
SPIR 630	Distilled Spirits Operations & Supply Chain	1.5
SPIR 640	Sustainability in the Distilled Spirits Industry	1.5
SPIR 650	Spirit Brand Marketing	1.5
SPIR 660	Three-Tier System of Alcohol Distribution	1.5
Minimum Total Hours		9

To complete the program, students must have a minimum of a 3.0 cumulative grade point average.

Diversity Literacy (CERT)

Graduate Certificate in Diversity Literacy

Unit: College of Arts and Sciences (<https://louisville.edu/artsandsciences/>) (GA)
Department: Philosophy (<https://louisville.edu/philosophy/>)
Program Webpage (https://louisville.edu/philosophy/graduate-programs/copy_of_diversity-literacy-certificate/)
Academic Plan Code(s): DILICDL

Program Information

The Certificate in Diversity Literacy will provide a unique opportunity for students who have already earned bachelor's degrees to enhance their knowledge and skills of the theory and practice of inclusion and equity, including what diversity means, what its personal and social effects are, and how it shapes lives, workplaces, and pedagogy. This knowledge base and skill set will allow, for example, educators to become more inclusive in their pedagogy, employees to work more effectively in multicultural teams, and managers to become better supervisors by better understanding their cultural assumptions and those of their employees.

Admission Requirements

Anyone who has earned a baccalaureate degree from an accredited college or university may apply.

The application for graduate programs (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) at the University of Louisville.

The following materials will be necessary to complete an application:

- Official transcripts of prior undergraduate and graduate work;
- Two letters of recommendation;
- A two-to-three page essay describing the applicant's interest in the program and how it will benefit her or his course of study and/or career path.

Program Requirements

The curriculum for this certificate consists of 15 total credit hours, structured as follows:

Code	Title	Hours
Core Courses		
PHIL 690	Philosophical Foundations of Diversity, Equity, and Inclusion	3
PHIL 691	Capstone in Diversity Literacy	3
Standard Electives ¹		9
<i>Cultural Competency</i>		
UPA 664	Cultural Competency and Action	
<i>Institutions and Equity</i>		
PHIL 682	Health and Social Justice or EDAP 530 Language, Society & Power	
<i>Social Inequality</i>		
SOC course at the 600 level or above		
Minimum Total Hours		15

¹ Electives may be substituted with the program director's consent. At least six (6) of the elective credit hours must be earned in A&S courses.

Interdisciplinary Early Childhood Education (MAT)

Master of Arts in Teaching in Interdisciplinary Early Childhood Education
Unit: College of Education and Human Development (<http://louisville.edu/education/>) (GE)

Department: Special Education, Early Childhood and Prevention Science (<https://louisville.edu/education/departments/sped/>)
Program Website (<https://louisville.edu/education/degrees/mat-iece/>)
Academic Plan Code(s): IECEMAT, IECEMATO

Program Information

This program can be completed in a traditional classroom format or entirely online (<https://louisville.edu/online/programs/masters/online-mat-in-interdisciplinary-early-childhood-education/>).

Interdisciplinary Early Childhood Education Birth to Primary Teacher Certification Program

The program emphasizes in-depth academic preparation and field experiences that allow teachers to be knowledgeable about the field of early childhood/special education and to develop critical thinking and lifelong learning skills. The program emphasizes:

- Nurturing students as active agents in their own learning
- Authentic, performance-based assessment of teaching and learning
- Meeting the needs of all students
- Responding constructively to sociocultural differences among students

The program prepares students interested in working with children from birth to age 5 in a wide variety of settings—day care centers, public and private preschools, community programs, and clinics. This program gives students authentic experiences with infants, toddlers, and preschool children in the areas of curriculum development, typical and atypical child development, programs and services for children and their families, family involvement and intervention, screening and assessment, program administration, current topics, and practicum/action research.

The goals of this program include:

- IECE Teacher Certification
- Preparation of teachers for the education of typical and atypical children in different settings
- Provide background information on Kentucky Child Learning and Assessment Standards

Admission Requirements

Candidates who meet the following criteria may be eligible to apply to the Master of Arts in Teaching program:

- Application to Graduate School (<http://louisville.edu/graduate/apply/>). This should be completed three to four weeks prior to the application deadline.
- Bachelor's degree (<http://louisville.edu/education/degrees/info/bachelors/>) with minimum undergraduate degree GPA of 2.75 (official transcripts (<http://louisville.edu/education/degrees/info/transcripts/>) required)
- C or higher in ENGL 102 (or equivalent) and oral communication courses
- TOEFL (<http://louisville.edu/education/degrees/info/toefl/>)/IELTS (<https://www.ielts.org/>)/Duolingo (<https://www.duolingo.com/>)
- Professional Writing Requirements (<https://louisville.edu/education/degrees/info/mat-mse-professional-statement/>)
- Signed Professional Code of Ethics/Technology User Agreement/Statement of Understanding of Admissions Guidelines
- Three Letters of Recommendation (<http://louisville.edu/education/degrees/info/lor/>)
- Interview

Candidates considering applying to the MAT program should contact the Education Advising and Student Services office (teacher@louisville.edu) (<http://louisville.edu/cgi-bin/uofl.mail?teacher>) prior to applying for admission.

Admission is competitive. Candidates who meet minimum academic requirements are not guaranteed admission to the program.

Program Requirements

Code	Title	Hours
EDSP 515	Communication and Socialization in Early Childhood	3
EDSP 533	Inclusive Early Childhood Curriculum	3
EDSP 534	Inclusive Early Childhood Curriculum Field Experience	1
EDSP 536	Theories of Play	3
EDSP 537	Infant/Toddler Instruction and Care	3
EDSP 583	Early Childhood Special Education Assessment	3
EDSP 584	Families and Collaboration in Interdisciplinary Early Childhood Education	3
EDSP 585	Families and Collaboration in IECE: Field Experience	1
EDSP 600	Creativity and the Young Child	3
EDSP 656	Guidance for Young Children Field Experience	1
EDSP 657	Guidance for Young Children	3

600 Level Electives approved by advisor ¹	3
Mid-Point Assessment: Prior to Student Teaching	
EDTP 614	
EDTP 615 Student Teaching: Elementary School	3
Minimum Total Hours	33

Midpoint Assessment: Completion of all courses listed above with 3.0 cumulative GPA or higher; satisfactory dispositions assessment; electronic documentation of 200 hours of diverse and approved field experiences; satisfactory performance on all Hallmark Assessment Tasks; Target performance or better on all rubrics.

Certification Assessment: Satisfactory dispositions assessment; passing scores on required PRAXIS exams; completion of degree requirements.

Degree Assessment: Cumulative GPA of 3.0 or higher (with at least a "C" in Student Teaching); No more than a total of 2 "C's" in course work; satisfactory performance on all Hallmark Assessment Tasks; Target performance or better on all rubrics.

Degree Candidacy: If not enrolled during the semester in which you are graduating, you will need to register for degree candidacy as outlined in the Graduate Catalog (<http://catalog.louisville.edu/archive/2023-2024/graduate/general-policies-procedures-requirements/>).

Praxis Disclaimer:

"Teacher certification requirements are subject to change. Before registering for certification test(s), please refer to the Education Professional Standards Board (EPSB) website at epsb.ky.gov (<http://www.epsb.ky.gov/>) or [ets.org/praxis/ky](http://www.ets.org/praxis/ky/) (<http://www.ets.org/praxis/ky/>) for current requirements."

¹ Advisor approval needed.

The Master of Arts in Teaching in Interdisciplinary Early Childhood Education program prepares students to meet the requirements for certification and/or licensure. If you plan to pursue professional licensure or certification you should first determine your state's criteria for examination and licensure to see how/if our program meets those requirements prior to enrollment. We recommend that you also contact your state's licensing board directly to verify that the requirements have not changed recently and to answer any questions especially those regarding additional requirements beyond the degree.

More information about certification or licensure is available at the following website: <https://louisville.edu/oapa/licensure-information> (<https://louisville.edu/oapa/licensure-information/>) (you may search by school or by the name of the program then click on 'View Details' to display the information).

For programs with an online option, more information about certification or licensure is available here: <https://louisville.edu/online/About-Us?tab=disclosures> (<https://louisville.edu/online/About-Us/?tab=disclosures>)

Interdisciplinary Early Childhood Education, Alternative Certification (MAT)

Master of Arts in Teaching in Interdisciplinary Early Childhood Education

Unit: College of Education and Human Development (<http://louisville.edu/education/>) (GE)

Department: Special Education, Early Childhood and Prevention Science (<https://louisville.edu/education/departments/sped/>)
Program Website (<https://louisville.edu/education/degrees/mat-iece/>)
Academic Plan Code(s): IECEMAT, IECEMATO

Program Information

Interdisciplinary Early Childhood Education Birth to Primary Teacher Certification Program

This program can be completed in a traditional classroom format or entirely online (<http://louisville.edu/online/programs/masters/online-mat-in-interdisciplinary-early-childhood-education/>).

The field of early childhood education includes a vast number of professionals who begin working in early childhood settings when they turn 18 years of age. Since this group of professionals is working in child care settings full-time, a traditional program is not possible for them to continue on a pathway to a degree or certification. This program is designed to meet the needs of the working early childhood professional who will benefit from a completely online program and the opportunity to learn in their own classrooms while they teach and continue to improve their practice through ongoing professional learning opportunities.

This program is designed for candidates who are not certified teachers. The purpose of this program is to provide candidates currently holding a Bachelor's (or graduate degree), a pathway to teacher certification while they are employed as a teacher of record in an approved early childhood classroom. Candidates must be concurrently enrolled and employed in order to maintain the temporary provisional certificate. If a candidate is not enrolled or employed as the teacher of record, the Division of Educator Preparation and Certification must be immediately notified.

The program emphasizes in-depth academic preparation and field experiences that allow teachers to be knowledgeable about the field of early childhood/special education and to develop critical thinking and lifelong learning skills. The program emphasizes:

- Nurturing students as active agents in their own learning
- Authentic, performance-based assessment of teaching and learning
- Meeting the needs of all students
- Responding constructively to sociocultural differences among students

The goals of this program include:

- IECE Teacher Certification
- Preparation of teachers for the education of typical and atypical children in different settings
- Provide background information on Kentucky Child Learning and Assessment Standards

Admission Requirements

Candidates who meet the following criteria may be eligible to apply to the Master of Arts in Teaching program:

- a. Application to Graduate School (<http://louisville.edu/graduate/apply/>). This should be completed three to four weeks prior to the application deadline.

- b. Bachelor's degree (<http://louisville.edu/education/degrees/info/bachelors/>) with minimum undergraduate degree GPA of 2.75 (official transcripts (<http://louisville.edu/education/degrees/info/transcripts/>) required)
- c. C or higher in ENGL 102 (<http://catalog.louisville.edu/archive/2023-2024/search/?P=ENGL%20102>) (or equivalent) and oral communication courses
- d. TOEFL (<http://louisville.edu/education/degrees/info/toefl/>)/IELTS (<https://www.ielts.org/>)/Duolingo (<https://www.duolingo.com/>)
- e. Professional Writing Requirements (<https://louisville.edu/education/degrees/info/mat-mse-professional-statement/>)
- f. Signed Professional Code of Ethics/Technology User Agreement/Statement of Understanding of Admissions Guidelines
- g. Three Letters of Recommendation (<http://louisville.edu/education/degrees/info/lor/>)
- h. Interview

Candidates considering applying to the MAT program should contact the Education Advising and Student Services office (teacher@louisville.edu (<http://louisville.edu/cgi-bin/uofl.mail?teacher>)) prior to applying for admission.

Admission is competitive. Candidates who meet minimum academic requirements are not guaranteed admission to the program.

Program Requirements

Code	Title	Hours
EDSP 533	Inclusive Early Childhood Curriculum	3
EDSP 537	Infant/Toddler Instruction and Care	3
EDSP 600	Creativity and the Young Child	3
EDTP 627	Practicum for Alternative Certification Program ¹	1.5
EDSP 632	Universal Design for Learning Using Technology	3
EDSP 657	Guidance for Young Children	3
Mid-Point Assessment		
EDSP 515	Communication and Socialization in Early Childhood	3
EDSP 583	Early Childhood Special Education Assessment	3
EDSP 584	Families and Collaboration in Interdisciplinary Early Childhood Education	3
EDTP 678	Supporting the Second Year Alternative Certification Teacher I	1.5
EDTP 679	Supporting the Second Year Alternative Certification Teacher II	1.5
Minimum Total Hours		30

¹ Requires two semesters.

Midpoint Assessment: Completion of all courses listed above with 3.0 cumulative GPA and no lower than a "C" in each course; satisfactory dispositions assessment; satisfactory performance on all Hallmark Assessment Tasks; Target performance or better on all rubrics.

Degree Assessment: All program course work with 3.0 cumulative GPA (and no more than a total of two "C's" (six (6) credit hours) in degree courses); satisfactory performance on all Hallmark Assessment Tasks; Target performance or better on all rubrics.

Degree Candidacy: Students not enrolled during the semester in which they intend to graduate must register for degree candidacy as outlined in Academic Policies, Procedures, and Requirements (<https://catalog.louisville.edu/graduate/general-policies-procedures-requirements/>).

Certification Assessment: Satisfactory dispositions assessment; passing scores on required PRAXIS exams; completion of degree requirements.

Praxis Disclaimer: Teacher certification requirements are subject to change. Before registering for certification test(s), please refer to the Education Professional Standards Board (EPSB) website at epsb.ky.gov/ (<http://www.epsb.ky.gov/>) or ets.org/praxis/ky (<http://www.ets.org/praxis/ky/>) for current requirements.

The Master of Arts in Teaching in Interdisciplinary Early Childhood Education (Alternative Certification) prepares students to meet the requirements for certification and/or licensure. If you plan to pursue professional licensure or certification, you should first determine your state's criteria for examination and licensure to see how/if our program meets those requirements prior to enrollment. We recommend that you also contact your state's licensing board directly to verify that the requirements have not changed recently and to answer any questions especially those regarding additional requirements beyond the degree.

More information about certification or licensure is available at the following website: <https://louisville.edu/oapa/licensure-information> (<https://louisville.edu/oapa/licensure-information/>) (you may search by school or by the name of the program then click on 'View Details' to display the information).

For programs with an online option, more information about certification or licensure is available here: <http://louisville.edu/online/About-Us> (<http://louisville.edu/online/About-Us/>) (please scroll down near the bottom of the page and click on the licensing disclosures tab).

Educational Administration (EdS)

Specialist in Education in Educational Administration

Unit: College of Education and Human Development (<http://louisville.edu/education/>) (GE)

Department: Educational Leadership, Evaluation, and Organizational Development (<http://louisville.edu/education/departments/eleod/>) Program Webpage (<https://louisville.edu/education/degrees/eds-ea/>) Academic Plan Code(s): EDADESPRN, EDADESSPV

Program Information

The EdS (Education Specialist) degree in Educational Administration is a 30 credit hour, post-master's degree program. It can lead to certification in principalship, or supervisor of instruction.

The EdS program is designed to prepare school leaders to engage staff, improve the instructional capacity of schools, and deal effectively with the educational challenges of the 21st century. The goal of the EdS program is to provide field experience, clinical practice, and conceptual and theoretical knowledge necessary for roles in instructional leadership. The Department of Educational Leadership, Evaluation, and Organizational Development maintains a strong collaboration with school districts in preparing exemplary P-12 school administrators.

The candidate's admission packet must demonstrate his/her skills and understanding of the following: ability to improve student achievement, leadership, and advanced knowledge of curriculum, instruction, and

assessment. Candidates applying for admission are jointly screened by both the University of Louisville faculty and local school district personnel.

Admission Requirements

- Evidence of bachelor's and master's degrees
- Transcripts of all undergraduate and graduate work

Admission to this Program

- A 3.3 grade point average from the master's degree program
- Signed copies of the following forms: Acceptable Use of Technology Agreement and Professional Code of Ethics for Kentucky School Personnel

Includes both Principal Certification and Supervisor of Instruction Certification

Degree Program Admission Requirements

- Joint screening by ELEOD Department and local school district personnel
- A written rationale for pursuing the degree (limit of one page)
- A current resume
- Your philosophy of education (not to exceed two pages)
- Two written letters of recommendation attesting to the candidate's skills and understanding of (a) ability to improve student achievement, (b) leadership, (c) advanced knowledge of curriculum, instruction, and assessment. One must be from the current site supervisor.
- Three years of successful K-12 teaching experience in Kentucky or three years (one year = 140 contract days) of successful K-12 teaching outside the state of Kentucky.

Program Requirements

Code	Title	Hours
LEAD 633	Systems and Structures for School Improvement	3
LEAD 634	FUNDAMENTALS OF SCHOOL LEADERSHIP	3
LEAD 635	Building and Sustaining Professional Learning Communities	3
LEAD 636	Creating Equitable & Reliable Learning Environments	3
MIDPOINT ASSESSMENT		
Satisfactory dispositions assessment ¹		
LEAD 637	Ensuring High Performance School and Community Engagement	3
LEAD 620	Education Law and Policy Review in P-12 Education	3
LEAD 622	Fiscal and Human Resources in P-12 Education	3
LEAD 782	Reflective Practice for School Leaders	3
Total Hours for Level 1 ²		24
LEAD 609	Internship in Educational Leadership	3
LEAD Electives ³		3
EXIT ASSESSMENT ⁴		
Minimum Total Credit Hours for EdS		30
Minimum Total Credit Hours for Rank I ⁵		60

Degree Program Completion Requirements

A grade point average of 3.3 in all courses counting on this program

Successful completion of a capstone in LEAD 782 at the completion of Level 1

Successful completion of a program portfolio at the end of Level 2. Information about the portfolio is found in "Guidelines for Portfolio Completion Requirement," available from your advisor

Certification requirements

The Education Professional Standards Board is responsible for issuing and renewing certificates for all Kentucky teachers and administrators. Candidates for principal certification must pass both the SLLA and the KYTP. These tests may be taken during the last semester of coursework for Level 1 Principal Certification. Current information about the Kentucky assessment program may be retrieved from epsb.ky.gov (<http://www.epsb.ky.gov/mod/book/view.php?id=93>).

Completion of three years of full-time teaching experience

- ¹ Satisfactory completion of hallmark/dispositions assessments in LEAD 633, LEAD 634, LEAD 635, and LEAD 636. Must maintain a GPA of 3.3.
- ² Refer to program completion requirements for Level 1 prior to Level 2
- ³ TBD by student and advisor - may be a course leading to additional certification
- ⁴ Students in the EdS program will be required to complete an exit portfolio in their last semester of the program.
- ⁵ Completion of a Rank 1 program requires a minimum of 60 credit hours in approved program. For Rank 1 purposes, approved graduate hours at the master's level may be counted to reach 60 credit hours, though some of those hours may not count toward certification. Students seeking Rank 1 simultaneously with this certification program must complete the appropriate form with the advisor. The advisor must approve electives/unnamed courses.

The Specialist in Education In Educational Administration (EdS) program prepares students to meet the requirements for certification and/or licensure. If you plan to pursue professional licensure or certification you should first determine your state's criteria for examination and licensure to see how/if our program meets those requirements prior to enrollment. We recommend that you also contact your state's licensing board directly to verify that the requirements have not changed recently and to answer any questions especially those regarding additional requirements beyond the degree.

More information about certification or licensure is available at the following website: louisville.edu/oapa/licensure-information (<https://louisville.edu/oapa/licensure-information/>) (you may search by school or by the name of the program then click on 'View Details' to display the information).

For programs with an online option, more information about certification or licensure is available here: <https://louisville.edu/online/About-Us?tab=disclosures> (<https://louisville.edu/online/About-Us/?tab=disclosures>)

Educational Administration (Rank 1)

Rank 1 Program for Educational Administration

Unit: College of Education and Human Development (<http://louisville.edu/education/>) (GE)

Department: Educational Leadership, Evaluation, and Organizational Development (<http://louisville.edu/education/departments/eleod/>)
Academic Plan Code(s): EDADRK1

Program Information

Rank 1 programs are not degree programs.

Rank I programs are planned, graduate-level programs designed for Kentucky teachers seeking rank change for salary purposes. They are recognized only in the state of Kentucky. By state regulation, Rank I status is 60 credit hours of approved graduate credit including a master's degree.

Teachers who complete a Rank I program may obtain a rank change for salary purposes in Kentucky. Through a Rank I program, teachers may increase their depth of knowledge in their teaching areas or in additional areas of certification, as appropriate.

Admission Requirements

Graduates of the University of Louisville EdS in Educational Administration, are eligible to pursue this Rank 1 program.

Candidates who have completed a specialist's degree in Educational Administration from other institutions must provide documentation, before applying for admission, that they have completed the requirements leading to the provisional and standard certificates in Kentucky.

Students may apply to the program by first going to the Graduate School (<https://louisville.edu/graduate/futurestudents/apply-materials/application/>) website. Admission requirements include the following credentials:

- Official transcripts with a GPA of 2.75 in the bachelor's degree and a GPA of 3.0 in the master's degree
- For international students, TOEFL/IELTS/Duolingo (students holding a baccalaureate or advanced degree from an accredited institution in the U.S. are exempt from this requirement.)

Applicants who have attended a college or university outside of the United States are also required to submit an evaluation of their transcript through either WES (World Education Services) (<http://wes.org/>) or ECE (Educational Credential Evaluators) (<http://ece.org/>). Please note that transcript evaluations can sometimes take several weeks.

Please have transcripts sent to the **Graduate School** (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>).

If transcripts are sent electronically, please have them sent to the following email: gradadm@louisville.edu

Please contact the College of Education and Human Development Graduate Student Services for more information at (502) 852-2628.

Program Requirements

Rank I Program in Educational Administration

Code	Title	Hours
Inquiry (Select one of the following)		3
LEAD 601	Applied Statistics	

LEAD 700	Research Concepts and Design	
LEAD 704	Qualitative Field Research Methods	
Advocacy (Professional Leader)		
Leadership: (Select one of the following)		3
LEAD 634	FUNDAMENTALS OF SCHOOL LEADERSHIP	
LEAD 613	Administration and Supervision in Special Education	
LEAD 649	District Leadership: The Contemporary Superintendent	
LEAD 715	Advanced Organizational Theory	
Diversity: (Select on of the following)		3
LEAD 610	Collaboration and Communication for Effective Leadership	
LEAD 636	Creating Equitable & Reliable Learning Environments	
LEAD 667	Instructional Planning for Student Learning and Achievement	
LEAD 720	Social and Emotional Development in a Diverse Environment	
Area of Emphasis (in consultation with advisor)		12-18
Electives (in consultation with advisor)		0-6
Action (select one of the following)		3
LEAD 679	Systems for Change: Continuous School Improvement-A Clinical Practicum	
LEAD 782	Reflective Practice for School Leaders	
Minimum Total Hours		24-36

Mid-Point Requirement: Candidates are required to submit a mid-point performance assessment to their faculty advisor at the completion of 15 credit hours of coursework and designed collaboratively with the faculty advisor. The faculty advisor will assess the candidate's performance.

Educational Leadership and Organizational Development (EdD)

Doctor of Education in Educational Leadership and Organizational Development

Unit: College of Education and Human Development (<https://louisville.edu/education/>) (GE)

Department: Educational Leadership, Evaluation, and Organizational Development (<https://louisville.edu/education/departments/eleod/>)

Program Website (<https://louisville.edu/education/degrees/edd-elod/>)
Academic Plan Code(s): ELODEDD

Program Information

The doctoral degree is granted in recognition of scholarly proficiency and distinctive achievement in a specific field/discipline. All candidates for a doctoral degree in the College of Education and Human Development must successfully complete qualifying exams and a dissertation/professional portfolio that clearly indicates the candidate has mastered and can exhibit/articulate the content knowledge, skills and dispositions specific to their discipline, and can utilize appropriate research methodologies to contribute to the body of knowledge in their field.

Distinctive Characteristics of Doctoral Programs in the College of Education and Human Development

- a. **Social Justice and Equity**
Doctoral students in our program build experience and expertise in the issues of social justice and equity which aligns with our metropolitan mission and focus on student achievement.
- b. **Leadership**
Our doctoral students gain expertise in supervising and leading others to achieve organizational goals and missions, managing complex systems, addressing administrative issues and procedures, conducting research to enhance leadership and teaching others about the art of organizational leadership.
- c. **Practical Experience**
The doctoral program contains practicums, internships, or embedded field experience that aligns with program and career goals. These mentored experiences may include teaching, research, administration or other appropriate areas.
- d. **Scholarship/Research**
An emphasis on scholarship includes experience and mentorship in ethics, publications, presentation, grantsmanship, and other forms of creative activity. The research component is characterized by the development of vertical research teams: senior faculty, junior faculty, doctoral students, master's students, and in some programs, undergraduate students, working together on research projects and research areas. These may be bolstered by partnerships with local school districts, businesses, or community agencies.

Admission Requirements

Potential students must meet the minimum requirements for admission to the University of Louisville Graduate School

Additionally, the following is required by the program:

- a. **Master's degree in education or related field**
- b. **Letter of Introduction** - No more than two pages highlighting your career accomplishments to date, your reason for considering doctoral level work, and your anticipated areas of interest for action research project(s).
- c. **Current Resume or Curriculum Vita** - Submit a current resume or curriculum vita. The program faculty expects applicants to have prior professional experience in P-12 education. The EdD program is practitioner-based and intended for experienced professionals in the field.
- d. **Three Letters of Recommendation** - Select three individuals who are familiar with your background as a professional or graduate student and have them complete the Recommendation Form [PDF] (<https://louisville.app.box.com/s/w9jkkbu3cg10q7jtbwxo5rdkn2d1mjaa/>) (the two letters required by the graduate school for admission may count in this total). At least one of the recommendations must come from someone familiar with your work ethic and work products, **A letter from an immediate supervisor is encouraged.**
- e. **Official copies of all collegiate transcripts** (undergraduate and graduate). Graduates of the University of Louisville need not provide a transcript.
- f. **GPA of at least 3.5 for prior graduate coursework.**
- g. **Applicants submitting foreign transcripts** must submit transcript to either the World Education Evaluation Service (WES) or Education Credentials Evaluators (ECE) for evaluation. If you have a master's degree from the U.S., this requirement is waived.

- h. **Students for whom English is not their primary language** must show English language proficiency by successfully completing one of the following:
 - International English Language Testing System (IELTS) examination (<https://www.ielts.org/>) – minimum score: 6.5
 - Test of English as a Foreign Language (TOEFL) examination (<https://www.ets.org/toefl/>) – minimum scores: 550 on the paper-based TOEFL, 213 on the computer-based TOEFL or 80 or higher on the internet-based TOEFL
 - Duolingo English Test with Subscores (https://englishtest.duolingo.com/applicants/?utm_source=google&utm_medium=search&utm_campaign=EnglishTier1CanBroad&gclid=CjwKCAiAyPyQBhB6EiwAFUuakrtGPRRW-6-LWFstq8XBfUXEzPQde1_PQmLRqJH7n01zpxwQcxv7MxoCRc0QAvD_BwE) – minimum score of 105 and exam must have been taken after January 1, 2020
 - Note: International students who have earned a degree from an accredited college or university in the U.S. are not required to complete the TOEFL, IELTS, or Duolingo.
- i. **Submission of a writing prompt** provided when the application materials are received and to be submitted prior to the interview. The writing prompt will focus on a contemporary issue in the P-12 education landscape and will require appropriate research tasks aimed to assess the capacity of the candidate for admission to process, analyze, and communicate (in written form) their response to the prompt.
- j. **Interview with Program Faculty**- Program faculty reserve the right to request additional information to resolve admission status including, but not limited to, GRE scores, additional letters of recommendation, professional references for consultation, etc.

All application materials are reviewed by the program faculty and are considered holistically when determining admission status. Students will be notified in writing of their admission status.

Program Requirements

Master's degree prerequisite + 60 credit hours minimum

The Student and Program Committee must develop courses, programs and experiences that clearly identify and address the specific themes of Leadership, Scholarship, Social Justice and Equity. These areas of emphasis must have descriptive competencies that the student should attain and the Committee can assess.

The doctoral degree is granted in recognition of scholarly proficiency and distinctive achievement in a specific field/discipline. All candidates for a doctoral degree in the CEHD must successfully complete qualifying exams and a dissertation/professional portfolio that clearly indicates the candidate has mastered and can exhibit/articulate the content knowledge, skills and dispositions specific to their discipline and can utilize appropriate research methodologies to contribute to the body of knowledge in their field.

Required Coursework

Code	Title	Hours
Specialty Components ¹		33
LEAD 715	Advanced Organizational Theory	3
Additional Specialty Component courses selected with Program Committee approval		
LEAD 601	Applied Statistics (or equivalent required)	3

Research Methodology ¹		27
Research Course to aid in the completion of the EdD Degree		
Research Course to aid in the completion of the EdD Degree		
Research Electives (e.g., Field Survey Research, additional qualitative methodologies and/or quantitative methodologies) ²		
LEAD 777	Capstone for Doctor of Education Degree in Educational Leadership and Organizational Development (12 credit hours)	1-15
Minimum Total Hours		67-81

¹ EdD students complete 33 credit hours of Specialty Component coursework and 27 credit hours of Research Methodology for a minimum total of 60 credit hours of eligible graduate work. Courses are selected with Program Committee Approval within program guidelines/framework.

² Selected with Program Committee Approval within program guidelines/framework. Students have the opportunity to take courses in other disciplines. LEAD 600 may not be used to satisfy this requirement.

Educational Leadership and Organizational Development (PhD)

Doctor of Philosophy in Educational Leadership and Organizational Development

Unit: College of Education and Human Development (<http://louisville.edu/education/>) (GE)

Department: Educational Leadership, Evaluation, and Organizational Development (<http://louisville.edu/education/departments/eleod/>)

Program Website (<https://louisville.edu/education/degrees/phd-elod/>)
Academic Plan Code(s): ELODPHD

Program Information

The Doctor of Philosophy in Educational Leadership and Organizational Development encompasses five specialties:

- P-12 Administration
- Post-secondary Administration
- Sport administration
- Human Resource Development
- Evaluation

The doctoral degree is granted in recognition of scholarly proficiency and distinctive achievement in a specific field/discipline. All candidates for a doctoral degree in the College of Education and Human Development must successfully complete qualifying exams and a dissertation/professional portfolio that clearly indicates the candidate has mastered and can exhibit/articulate the content knowledge, skills and dispositions specific to their discipline and can utilize appropriate research methodologies to contribute to the body of knowledge in their field.

Distinctive Characteristics of Doctoral Programs in the College of Education and Human Development

a. Social Justice and Equity

Doctoral students in our program build experience and expertise in the issues of social justice and equity which aligns with our metropolitan mission and focus on student achievement.

b. Leadership

Our doctoral students gain expertise in supervising and leading others to achieve organizational goals and missions, managing complex systems, addressing administrative issues and procedures, conducting research to enhance leadership and teaching others about the art of organizational leadership.

c. Practical Experience

The doctoral program contains practicums, internships, or embedded field experience that aligns with program and career goals. These mentored experiences may include teaching, research, administration or other appropriate areas.

d. Scholarship/Research

An emphasis on scholarship includes experience and mentorship in ethics, publications, presentation, grantsmanship, and other forms of creative activity. The research component is characterized by the development of vertical research teams: senior faculty, junior faculty, doctoral students, master's students, and in some programs, undergraduate students, working together on research projects and research areas. These may be bolstered by partnerships with local school districts, businesses, or community agencies.

Admission Requirements

Application Materials Overview

The LEAD Department PhD Admissions Committee evaluates an applicant's potential to succeed in the doctoral program, including academic writing and analysis, theory and conceptual processing, and overall program readiness. This evaluation of an applicant is conducted through a holistic review of an applicant's fully submitted application materials. These materials include the following:

- Graduate Application
- Résumé or Curriculum Vitae
- Letters of Recommendation: 2 Required (academic references preferred, but required for all applicants whose undergraduate work was completed within the last five years)
- English Language Exam: TOEFL, IELTS, or Duolingo English Test required* for applicants for whom English is not their primary language
- Transcripts: all official transcripts from any courses or degree programs taken at previous postsecondary institutions (other than dual credit)
- Personal Statement
- Analysis Essay

In addition, an applicant may submit or participate in additional opportunities such as the following that are optional but not required for admission:

- Interview
- GRE Scores
- Any academic or published works/ creative artifacts you have been a part of or produced

Additional information on each required and optional application materials can be found in the following sections:

Required Application Materials

- Graduate Application (<http://louisville.edu/graduate/apply/>) (even if currently enrolled in a University of Louisville program). All other

- application materials, except GRE Scores and online recommendation letters should be sent to the address at the bottom of this page.
- b. **Resume or Curriculum Vitae.** It is expected that applicants have prior academic and professional experience in their field of interest. The PhD program is intended for experienced professionals, holding relevant academic degrees and who are qualified to undertake advanced study at the doctoral level. It is important that the academic and professional experience of applicants match the educational focus of the program curriculum and the educational and professional orientation of the program faculty.
- c. **Letters of Recommendation.** Using the Graduate School on-line application (<http://louisville.edu/graduate/apply/>) choose two individuals familiar with your background to provide a Letter of Evaluation (<https://louisville.edu/education/degrees/files/new-letter-of-eval.pdf>). Academic references preferred, but required for all applicants whose undergraduate work was completed within the last five years.
- d. **English Language Exam.** Students for whom English is not their primary language must show English language proficiency by successfully completing one of the following:
 - International English Language Testing System (IELTS) examination (<https://www.ielts.org/>) – minimum score: 6.5
 - Test of English as a Foreign Language (TOEFL) examination (<https://www.ets.org/toefl/>) – minimum scores: 550 on the paper-based TOEFL, 213 on the computer-based TOEFL or 80 or higher on the internet-based TOEFL
 - Duolingo English Test with Subscores (https://englishtest.duolingo.com/applicants/?utm_source=google&utm_medium=search&utm_campaign=EnglishTier1Campaign&utm_content=&utm_term=BrandBroad&gclid=CjwKCAiAyPyQBhB6EiwAFUuakrtGPRRW-6-LWFstq8XBFUXEZPQde1_PQmLRqJH7n01zpxwQcxv7MxoCRc0QAvD_BwE) minimum score of 105 and exam must have been taken after January 1, 2020. *Note:* Students who have earned a degree from an accredited college or university in the U.S. are not required to complete the TOEFL, IELTS, or Duolingo.
- e. **Transcripts—undergraduate and graduate** (All official, non-UofL). Send official transcripts for all previous undergraduate and graduate coursework from any courses or degree programs taken at previous postsecondary institutions (other than dual credit) to the address indicated below. Do not provide UofL transcripts and transcripts previously submitted to the College of Education and Human Development. If you have records at UofL, but outside the CEHD, attach a note so indicating and we will secure them. It is expected that applicants would have GPAs of at least 3.5 for prior undergraduate and graduate degrees. Applicants submitting **foreign transcripts** must submit such transcript to analysis by either of the following two agencies and have the agency submit their report to the address below for inclusion in the application packet: World Education Evaluation Service (<http://www.wes.org/>) or Education Credentials Evaluators (<http://www.ece.org/>). The applicant must send the official transcript to the transcript evaluation agency. The agency will do an evaluation according to US guidelines and mail an official copy of the evaluation to UofL. We do not need the transcript if we have the official evaluation from ECE or WES. The agency also validates that the transcript is official and legitimate. In some cases, the applicant may only have one official copy of the transcript. In that situation, WES or ECE will mail the official transcript back to the student after the evaluation has been completed. If you have a graduate degree from the U.S., this requirement is waived.
- f. **Personal Statement.** Your Personal Statement is an opportunity for you to offer the admissions committee insights about your background, interests, future contributions to the academic community at the University of Louisville, and academic potential with your field of study.
 - As you author your Personal Statement, consider how your background and life experiences – including educational, cultural, financial, geographical, and/or other opportunities or barriers – motivated your decision to pursue a doctoral degree at the University of Louisville?
 - In your statement, share your research interests and career goals, as well as how you see this doctoral program helping you achieve those future goals as well as why you have chosen to pursue doctoral study at this time.
 - Tell us about what you have done, what is unique about you, what you have learned and achieved (including evidence of progress) to support and recognize your accomplishments to date and how that has prepared you for doctoral study in this program.
- g. **Analysis Essay.** For this essay, please identify a contemporary issue, challenge, or opportunity in your specialty area (e.g., human resource development, higher/postsecondary education, education administration, program evaluation, sports administration). Your essay should intertwine several messages that: (a) provide a background to your chosen topic, (b) inform your reader why your chosen topic is important and what is known about the topic, (c) articulate at least two avenues for how you could address your chosen topic using research articles in support of your points, (d) recommend an avenue or perspective in which to take along with supported rationale, and (e) provide a summary along with concluding remarks that bring your essay to a logical conclusion.
 - Your essay should demonstrate some level of analysis and be between 2500 and 3000 words (8- 10 pages double spaced) not including a title page, references or citations, tables, figures, or graphs.
 - Include any references to literature and empirical research sources that you use to help shape your analytic essay.
 - Your analysis essay does not need to be on a topic that you think you'd like to focus on in your doctoral studies, but it can be. Ultimately, we are interested in learning more about how you present a topic, offer competing perspectives, and your analysis associated with that discussion.

Optional Application Materials

- a. **Interview.** Using a holistic process, the LEAD PhD Admissions Committee will evaluate your application packet. They may, at their discretion, invite you for a brief interview with faculty in your chosen area of concentration to learn more about your interests. The interview is optional, but often can be helpful in finding fit within an academic program of study.
- b. **GRE Scores.** The GRE test can help committees evaluate students, especially those from unfamiliar colleges or universities. LEAD PhD Admissions Committee recognizes that tests have their limitations and may pose a financial burden for some students. To ensure that we support equity, inclusion, and a holistic review process, GRE scores are optional for admission to the PhD Program.
 - Applicants who do not submit GRE scores will be given full consideration to the program.
 - If you have taken the GRE, and wish to submit your scores as an option, have the Education Testing Service forward

scores to UofL (UofL's code for sending GRE scores is 1838).

- If you are a former UofL student and believe you scores are already at the University Graduate School, attach a note indicating so with your Graduate Application.
- Scores, whether a new applicant or a former UofL student, should be no more than 5-years old

3. Academic Published Works/ Creative Artifacts. If you have published any academic research or been a part of some form of creative artifact that adds to your application packet, please feel free to include those works as a .pdf within your packet as optional material.

Program Requirements

Master's degree prerequisite + 60 credit hours minimum

The Student and Committee must develop courses, programs and experiences that clearly identify and address the specific themes of Leadership, Scholarship, Social Justice and Equity. These areas of emphasis must have descriptive competencies that the student should attain and the Committee can assess.

Coursework Requirements

Code	Title	Hours
CORE AND ELECTIVE COGNATE COMPONENTS ¹		33
LEAD 710	Doctoral Seminar in Educational Leadership	
LEAD 674	Advanced Leadership Theory	
LEAD 715	Advanced Organizational Theory	
LEAD 780	Problem Analysis in Educational Leadership I	
Electives		
RESEARCH METHODOLOGY ²		15
LEAD 601	Applied Statistics	
LEAD 701	Intermediate Applied Statistics	
LEAD 702	Applied Multiple Regression	
LEAD 703	Multivariate Educational Statistics	
LEAD 704	Qualitative Field Research Methods	
LEAD 705	Qualitative Data Analysis and Representation	
Dissertation/Portfolio Research		
LEAD 795	Doctoral Research	12
ELECTIVE COMPONENT ³		
Minimum Total Hours		60

¹ 33 credit hours minimum, selected with Program Committee Approval

² 15 credit hours minimum, selected with Program Committee Approval

³ Master's degree comprises elective component of program.

Electrical Engineering (MEng)

Master of Engineering in Electrical Engineering

Unit: Speed School of Engineering (<http://engineering.louisville.edu>) (SP)

Department: Electrical and Computer Engineering (<https://engineering.louisville.edu/academics/departments/electrical/>)

Academic Plan Code(s): EE_ _MEN

Program Information

General Information

The Bachelor of Science in Electrical Engineering degree will provide a student with the basis to be able to complete the Master of Engineering (MEng) in Electrical Engineering degree. The Master of Engineering in Electrical Engineering degree program is accredited by the Engineering Accreditation Commission (EAC) of ABET, www.abet.org (<http://www.abet.org>).

Since the Electrical Engineering MEng is accredited as part of a five-year program with one-year of co-op experience, it is only available for students who have matriculated through the Electrical Engineering bachelor degree program at Speed School. Therefore, students who earn an undergraduate degree at a school or university other than the University of Louisville pursue the MS degree instead of the MEng degree.

Master of Engineering Program Educational Objectives

Graduates of the Master of Engineering program in the Electrical and Computer Engineering Department are expected within a few years of graduation to have:

- Established themselves in successful and productive careers or advanced studies in electrical engineering or a related area, possess technical competency in electrical engineering, and are effective team members and effective communicators.
- Demonstrated the ability to engage in lifelong learning in electrical engineering and related fields.
- Acquired a sense of professionalism, with emphasis on professional ethics, an awareness of professional licensing, and participation in the affairs of the profession.

Master of Engineering Student Outcomes

In order to achieve these objectives, the Master of Engineering program in the Electrical and Computer Engineering Department has the following outcomes set for its graduates. Graduates will demonstrate:

- An ability to communicate effectively with a range of audiences.
- An ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

Residency

All graduate students are expected to make steady and satisfactory progress toward the completion of degrees. A candidate for the Master of Engineering degree who does not register for credit hours must maintain active registration by paying a fee each semester for MEng residency until the degree is awarded (i.e., the candidate must maintain continuous registration, including summer terms, in Graduate Studies). Failure to pay the MEng residency fee will be cause to cancel a student's residency. Students who are not enrolled for a period of more than 12 months will be considered to have withdrawn from the program. In order to be restored to residency, the student must submit a new application, have the recommendation of the department chair, receive the approval of the Associate Dean and pay the fee for each of the semesters during which the residency was void.

Academic Performance

The J.B. Speed School of Engineering has established the following performance policies:

- The minimum grade point average requirement for good standing is 3.00 for all academic work completed while in graduate studies.

- b. Any student with a cumulative graduate GPA below 3.00 will be placed on academic warning. Students on academic warning are limited to enrollment for thirteen (13) credit hours in a fall or spring semester and seven (7) credit hours for summer terms.

Students who do not bring their cumulative graduate GPA back at or above a 3.00 in the semester immediately following Academic Warning, will be placed on Academic Probation for the next semester of enrollment. Students on probation are limited to enrollment for thirteen (13) credit hours in a fall or spring semester and seven (7) credit hours for summer terms. Any student who remains in academic probation for two consecutive terms may be considered for dismissal from the program.

- c. Students receiving graduate assistantships (teaching, research or service) shall be provided adequate training and shall be required to understand and adhere to University policies related to these areas. The performance of teaching, research and service duties by such students shall be periodically evaluated. Students with teaching assistantships shall be evaluated annually.
- d. Students who fail to meet performance goals or who do not meet other requirements as outlined in the admission letter, program requirements or the university catalog may be subject to academic dismissal from their programs.
- e. A maximum of eight (8) hours of graduate level courses taken as an undergraduate may be used to satisfy MEng degree requirements; these courses cannot have been used to also satisfy BS degree requirements.

Degree Requirements

The following degree requirements are mandatory of all master of engineering candidates:

- a. The program of study must be completed with a 3.00 GPA or better for all graduate courses used to satisfy degree requirements. Additionally, the program of study must be completed with a 3.00 GPA or better for all academic work attempted in graduate studies.
- b. Master's degree students must take at least 24 credit hours of coursework at the University of Louisville to satisfy the residency requirement for the master's degree. A maximum of six (6) credit hours of graduate credit may be transferred from accredited institutions.
- c. Students following the thesis option must follow the Procedures and Standards for Master of Engineering Theses.
- d. The total requirements must be completed within six years after admission into graduate studies. The time limit imposed by the rule may be extended in individual cases upon recommendation of the department chair and approval of the associate dean for academic and student affairs.
- e. The MEng degree cannot be conferred prior to the BS degree.

Admission Standards

Since the Electrical Engineering MEng is accredited as part of a five-year program with one-year of co-op experience, it is only available for students who have matriculated through the Electrical Engineering bachelor degree program at Speed School.

The application form is available online (<http://louisville.edu/speed/academics/forms/MEngGraduateStudiesApplication/>).

The requirements for admission or readmission to a master of engineering program are:

1. Submission of a completed MEng application for the field of specialization in which the student is earning a bachelor degree from the J.B. Speed School of Engineering. Students can be admitted to the MEng program with fewer than thirteen (13) credit hours of BS degree requirements remaining and no later than two years post conferral of their baccalaureate degree;
2. Recommendation by the faculty and chair of the student's department for admission or readmission to graduate studies;
3. Cumulative baccalaureate grade point average of 2.75. However, those students with cumulative baccalaureate grade-point averages from 2.50 to 2.75 may be admitted upon petition and approval of the chair and faculty of the department.

A student becomes a candidate for the Master of Engineering degree upon admission to graduate studies and initial registration as a graduate student.

Program Requirements

The Master of Engineering in Electrical and Computer Engineering degree requires the following over and above the Bachelor of Science in Electrical and Computer Engineering Degree.

Code	Title	Hours
Master of Engineering Coursework		
ECE Design Electives (see list below) ^{1,2,3}		12
ECE Electives (see list below) ^{1,3,4}		6
Technical Electives ^{1,5}		6
Select one of the following:		6-7
<i>Thesis/Paper Option:</i>		
ECE 697	Master of Engineering Thesis or Paper in Electrical Engineering	
<i>Non-Thesis/Paper Option:</i>		
ECE 695	Graduate Seminar in Electrical and Computer Engineering	
ECE Electives (see list below) ^{1,3,4}		
Minimum Total Hours		30-31

The Master of Engineering degree must be completed with a 3.00 GPA or better for all graduate courses used to satisfy degree requirements. Additionally, the Master of Engineering degree must be completed with a 3.00 GPA or better for all academic work attempted in graduate studies.

A maximum of eight (8) credit hours of graduate level courses taken as an undergraduate may be used to satisfy MEng degree requirements; these courses cannot have been used to also satisfy BS degree requirements.

- ¹ Electives must be chosen so that at least one-half of the credits counted toward the degree, exclusive of thesis or paper, are 600-level.
- ² A minimum of twelve (12) hours must be classified as Design Electives. Design Electives must be chosen from the approved list of regular courses (see below).
- ³ ECE electives must be chosen from an approved list
- ⁴ ECE 697 Master of Engineering Thesis or Paper in Electrical Engineering is an elective for a total of six (6) credit hours. For the thesis/paper option, a student is urged to select both an approved

M.Eng. thesis/paper topic and the director and members of the thesis/paper committee during the first term of graduate studies. The thesis/paper director must give approval for enrollment in ECE 697.

⁵ Technical electives can be ECE or non-ECE courses. Technical electives must be approved by the department. A maximum of six (6) credit hours of non-ECE courses will count toward the MEng degree. Non-ECE technical electives must be approved by the department.

Design Electives

Code	Title	Hours
ECE 510 & ECE 511	Computer Design Computer Design Laboratory	4
ECE 515 & ECE 514	Introduction to VLSI Systems Introduction to VLSI Systems Laboratory	4
ECE 516	Microcomputer Design	4
ECE 520 & ECE 521	Digital Signal Processing Digital Signal Processing Laboratory	4
ECE 533 & ECE 534	Integrated Circuit Design Integrated Circuit Design Laboratory	4
ECE 543 & ECE 544	Fundamentals of Microfabrication and MEMS Microfabrications/MEMS Laboratory	4
ECE 550 & ECE 551	Communication and Modulation Communication Systems Laboratory	4
ECE 555 & ECE 556	Digital Image Processing Digital Image Processing Laboratory	4
ECE 560 & ECE 561	Control Systems Principles Control Systems Laboratory	4
ECE 564 & ECE 565	Fundamentals of Autonomous Robots Fundamentals of Autonomous Robots Lab	4
ECE 619 & ECE 645	Computer Vision Computer Vision Laboratory	4
ECE 620 & ECE 655	Pattern Recognition and Machine Intelligence Pattern Recognition and Machine Intelligence Laboratory	4
ECE 633	Microelectronics Design and Fabrication	4
ECE 636	MEMS Design and Fabrication	4
ECE 697	Master of Engineering Thesis or Paper in Electrical Engineering	6

ECE electives

Code	Title	Hours
Any ECE Design Elective from above list.		
ECE 500	Special Topics in Electrical Engineering	1-6
ECE 518	Fundamentals of Computer Communications and Networks	3
ECE 523	Introduction to Biometrics	3
ECE 526	LabVIEW for Electrical Engineers	3
ECE 530	Introduction to Random Processes and Estimation Theory	3
ECE 531	Power Electronics	3
ECE 532	Electromechanical System Designs for Home Appliances	4.5

ECE 540	Fundamentals of Lasers	3
ECE 541	Engineering Optics Laboratory	1
ECE 542	Semiconductor Device Fundamentals	3
ECE 543	Fundamentals of Microfabrication and MEMS	3
ECE 545	Optical Signal Processing	3
ECE 569	Intermediate Electromagnetic Fields and Waves	3
ECE 581	Electric Machines and Drives	3
ECE 582	Power System Analysis	3
ECE 600	Special Topics in Electrical & Computer Engineering	1-6
ECE 611	Computer Architecture	3
ECE 613	Computational Intelligence Methods for Data Analysis	3
ECE 614	Deep Learning	3
ECE 632	Semiconductor Principles	3
ECE 638	The MOSFET	3
ECE 640	Introduction to Biomedical Engineering	3
ECE 641	Medical Imaging Systems	3
ECE 642	Fiber Optics and Integrated Optical Systems	3
ECE 643	Introduction to Biomedical Computing	3
ECE 645	Computer Vision Laboratory	1
ECE 647	Fundamentals of Optoelectronics and Photonics	3
ECE 651	Communication System Design	3
ECE 652	Information Theory and Coding	3
ECE 653	Digital Communications	3
ECE 654	Advanced Voice/Data Networks	3
ECE 655	Pattern Recognition and Machine Intelligence Laboratory	1
ECE 660	Introduction to Robust Control	3
ECE 661	Sampled-Data Control Systems	3
ECE 662	Introduction to Optimum Control	3
ECE 664	Modern Adaptive Control	3
ECE 665	Theory of Nonlinear Systems	3
ECE 674	Nanotechnology	3
ECE 675	Nanostructure Self-Assembly	3
ECE 676	Foundations of Polymer MEMS	3
ECE 682	Advanced Power System Analysis	3
ECE 697	Master of Engineering Thesis or Paper in Electrical Engineering	1-6

Electrical Engineering (MS)

Master of Science in Electrical Engineering

Unit: Speed School of Engineering (<http://engineering.louisville.edu>) (GS)

Department: Electrical and Computer Engineering (<https://engineering.louisville.edu/academics/departments/electrical/>)

Academic Plan Code(s): EE_ _MS, EE_ _MS_O

Program Information

This program can be completed in a traditional classroom format or entirely online (<https://louisville.edu/online/programs/masters/online-master-of-science-in-electrical-engineering/>).

General Information

The MS degree program is intended for persons having an accredited baccalaureate degree in Electrical Engineering, but is available to those with other backgrounds. Applicants with other backgrounds should plan on taking some undergraduate background coursework. Students interested in the MS degree program should consult the Director of Graduate Studies in the Department of Electrical and Computer Engineering.

Degree Requirements

The program of study must be completed with a 3.00 GPA or better for all graduate courses used to satisfy degree requirements. Additionally, the program of study must be completed with a 3.00 GPA or better for all academic work attempted in graduate studies.

The requirements for the Master of Science degree are discussed in more detail in the Degree Requirements (<http://catalog.louisville.edu/archive/2023-2024/graduate/general-policies-procedures-requirements/degree-requirements/>) section of this catalog.

Admission Standards

The admission standards for the master of science program in electrical engineering are as follows:

- a. All admission applications for the program shall include:
 - A completed graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) for the Graduate School,
 - An application fee,
 - At least two letters of recommendation, and
 - Official transcript(s) for all previous post-secondary coursework. All transcripts not in English must be certified as authentic and translated verbatim into English.
- b. The minimum requirement for admission is the baccalaureate degree or its equivalent from an accredited institution.
- c. The successful applicant will typically have an undergraduate grade point average of 3.00 or above (on a 4.00 scale).
- d. International students whose primary language is not English must show English language proficiency by either TOEFL/IELTS/Duolingo score or demonstration of a degree awarded from an acceptable English language institution. The successful applicant will typically have a TOEFL score of 80 or higher or overall IELTS score of 6.5 or higher or a Duolingo score of 105 or higher.

Program Requirements

Remedial work may be specified for those applicants who, in the opinion of the faculty, do not have a sufficient background.

The minimum curricular requirements for the master's program are:

Code	Title	Hours
ECE Electives ^{1,2}		15
Technical Electives ^{1,2}		9
Select one of the following:		6
Thesis or Paper Option		
ECE 690	Master of Science Thesis or Paper in Electrical Engineering ³	
Project Option		
ECE 692	Master of Science Advanced Level Independent Project ⁴	

ECE Electives ¹	
Course-Only Option	
ECE Electives ¹	
Minimum Total Hours	30

- ¹ Electives must be chosen so that at least one-half of the credits counted toward the degree, exclusive of thesis, are 600-level; at least fifteen (15) credit hours of coursework must be in ECE.
- ² Technical Electives can be ECE or non-ECE courses. Technical Electives must be approved by the department.
- ³ For the thesis/paper option, a student is required to select both an approved MS thesis/paper topic and the director and members of the thesis/paper committee during the first term of Graduate Studies. The thesis/paper director must give approval for enrollment in ECE 690.
- ⁴ Must include a course from a list of approved research/project courses, maintained by the Department.

Electrical Engineering (PhD)

Doctor of Philosophy in Electrical Engineering

Unit: Speed School of Engineering (<http://engineering.louisville.edu>) (GS)

Department: Electrical and Computer Engineering (<https://engineering.louisville.edu/academics/departments/electrical/>)
Academic Plan Code(s): EE_ _PHD

Program Information

General Information

The PhD degree program is intended for persons having an accredited master's and/or baccalaureate degree in electrical engineering. Students interested in the PhD degree program should consult the Director of Graduate Studies in the Department of Electrical and Computer Engineering.

Degree Requirements

The award of a Doctor of Philosophy degree indicates that a student has attained mastery of a field and has demonstrated the capacity to perform independent scholarly research. Candidates for the Doctor of Philosophy degree must have a minimum final cumulative grade point average of 3.00 for all academic coursework attempted in Graduate Studies.

The requirements for the Doctor of Philosophy degree are explained in more detail in the Degree Requirements section (<http://catalog.louisville.edu/archive/2023-2024/graduate/general-policies-procedures-requirements/degree-requirements/>) of this catalog.

Admission Standards

The admission standards for the PhD program in electrical engineering are as follows:

- a. All admission applications for the program shall include:
 - i. A completed graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) for the Graduate School
 - ii. An application fee
 - iii. Results from the Graduate Record Examination (GRE)
 - iv. At least two letters of recommendation

- v. Official transcript(s) for all previous post-secondary coursework. All transcripts not in English must be certified as authentic and translated verbatim into English.
- b. The minimum degree requirement for admission is an accredited baccalaureate degree in electrical engineering or closely related field.
- c. The successful applicant will typically have an undergraduate grade point average of 3.00 or above (on a 4.00 scale).
- d. The successful applicant will typically have a GRE combined Verbal and Quantitative Reasoning score of 295 or above.
- e. International students whose primary language is not English must show English language proficiency by either TOEFL/IELTS/Duolingo score or demonstration of a degree awarded from an acceptable English language institution. The successful applicant will typically have a TOEFL score of 80 or higher or overall IELTS score of 6.5 or higher or a Duolingo score of 105 or higher.

Program Requirements

Normally, it is expected that the student will complete a master's degree before being admitted to the PhD Program. However, qualified applicants may be admitted directly to the doctoral program after receiving a baccalaureate degree. These students will be required to complete an additional 30 credit hours of coursework at the 500 and 600 level under an individual plan developed in conjunction with the department's Director of Graduate Studies. Also, remedial work may be specified for those applicants who, in the opinion of the faculty, do not have a sufficient background.

The minimum curricular requirements for the doctoral program are:

Code	Title	Hours
Courses - Post Bac		
	Approved Master's Level Course Work	30
	Electives (minimum of 15 credit hours) ¹	15
	ECE 700: Dissertation Research in EE ²	15
Minimum Total Hours		60

Candidates for the Doctor of Philosophy degree must have a minimum final cumulative grade point average of 3.00 for all academic work attempted in Graduate Studies

¹ Electives can be ECE, non-ECE courses, or non-engineering courses and are approved by the candidates advisor.

² Candidates can take fewer than fifteen (15) credit hours of ECE 700 and more elective hours beyond fifteen (15) credit hours, so as not to exceed 30 credit hours total for elective credit hours and ECE 700 credit hours.

Elementary Education (MAT)



Master of Arts in Teaching in Elementary Education

Unit: College of Education and Human Development (<https://louisville.edu/education/>)

Department: Elementary, Middle, and Secondary Education (<https://louisville.edu/education/departments/mise/>)

Program Webpage (<http://louisville.edu/education/degrees/mat-eee/>)

Academic Plan Code(s): EREDMAT

Program Information

The MAT in Elementary Education enables graduate students to earn their initial teaching certificate for grades P-5 in Kentucky. Candidates learn to teach through instruction in pedagogy, child development, special education, gifted education, technology, and diversity. They develop their skills in field experiences in local area schools. The Elementary Education program emphasizes meeting the needs of the individual learner using best instructional practices in a standards-based environment. Through coursework and clinical field experiences, teacher education students become critical thinkers who are prepared to meet the demands of 21st-century elementary education.

Admission Requirements

Candidates who meet the following criteria may be eligible to apply to the Master of Arts in Teaching program. Candidates considering an application to the MAT program should contact the MAT admissions counselor (teacher@louisville.edu (<http://louisville.edu/cgi-bin/uofl.mail?teacher>)) prior to applying for admission. Admission is competitive. Candidates who meet minimum academic requirements are not guaranteed admission to the program.

- a. Application to Graduate School (<http://louisville.edu/graduate/apply/>). This should be completed three to four weeks prior to the application deadline.
- b. Bachelor's Degree from Accredited College or University (<http://louisville.edu/education/degrees/info/bachelors/>) with a Minimum 2.75 Grade Point Average (official transcripts (<http://louisville.edu/education/degrees/info/transcripts/>) required)
- c. Prerequisite Course Requirements (<http://louisville.edu/education/degrees/info/mat-eee-prereq/>)
- d. Oral Communication (<http://louisville.edu/education/degrees/info/oral-comm/>)course
- e. Grade of C or higher in ENGL 102 (or equivalent)
- f. TOEFL (<http://louisville.edu/education/degrees/info/toefl/>)/IELTS (<https://www.ielts.org/>)/Duolingo (<https://www.duolingo.com/>)

- g. Professional Writing Requirements (<http://louisville.edu/education/degrees/info/mat-mse-professional-statement/>)
- h. Three Letters of Recommendation (<http://louisville.edu/education/degrees/info/lor/>)
- i. Acceptable interview.

Program Requirements

Code	Title	Hours
EDTP 631	Integrated Teaching and Learning I	3
EDTP 632	Integrated Teaching and Learning II	3

The above courses must be completed prior to the content methods courses.

EDTP 603	P-5 Language Arts Methods	3
EDTP 604	P-5 Mathematics Methods	3
EDTP 605	Teaching Elementary School Science	3
EDTP 606	P-5 Social Studies Methods	3
EDTP 503	Developing Cross-Cultural Competence: Teaching Students from Diverse Backgrounds ¹	3

Code	Title	Hours
EDTP 615	Student Teaching: Elementary School	9

Code	Title	Hours
Total Minimum Hours		30

¹ Can be taken at any point in the program.

Mid-Point Assessment: Prior to Student Teaching: Satisfactory dispositions assessment; no lower than a "C" in each content methods class; all prerequisites met; all courses listed above passed; electronic documentation of 200 hours of diverse and approved field experiences; satisfactory performance on all Hallmark Assessment Tasks; Target performance or better on all rubrics.

Certification Assessment: After Student Teaching: Satisfactory dispositions assessment; passing scores on PRAXIS content and PLT exams; completion of degree requirements.

Degree Assessment: All program course work with 3.0 cumulative GPA (and no more than a total of two "C's" grades in degree courses); a "C" or higher in student teaching; satisfactory performance on all Hallmark Assessment Tasks; Target performance or better on all rubrics.

Praxis Disclaimer: Teacher certification requirements are subject to change. Before registering for certification test(s), please refer to the Education Profession Standards Board (EPSB) website at www.epsb.ky.gov (<http://www.epsb.ky.gov/>) or www.ets.org/praxis (<http://www.ets.org/praxis/>) for current requirements.

Degree Candidacy: Students not enrolled during the semester in which they intend to graduate must register for degree candidacy as outlined in the Graduate Catalog (<http://catalog.louisville.edu/archive/2023-2024/graduate/general-policies-procedures-requirements/#text>).

The Master of Arts in Teaching in Early Elementary Education (EREDMAT) prepares students to meet the requirements for certification and/or licensure. If you plan to pursue professional licensure or certification you should first determine your state's criteria for examination and licensure to see how/if our program meets those requirements prior to enrollment. We recommend that you also contact your state's licensing

board directly to verify that the requirements have not changed recently and to answer any questions especially those regarding additional requirements beyond the degree.

More information about certification or licensure is available at the following website: <https://louisville.edu/oapa/licensure-information> (<https://louisville.edu/oapa/licensure-information/>) (you may search by school or by the name of the program then click on 'View Details' to display the information).

For programs with an online option, more information about certification or licensure is available here: <https://louisville.edu/online/About-Us?tab=disclosures> (<https://louisville.edu/online/About-Us/?tab=disclosures>)

Elementary Education, Alternative Certification (MAT)

Master of Arts in Teaching in Early Elementary Education, Alternative Route to Certification

Unit: College of Education and Human Development (<https://louisville.edu/education/>)

Department: Elementary, Middle, and Secondary Education (<https://louisville.edu/education/departments/mise/>)

Program Webpage (<https://louisville.edu/education/degrees/mat-eee/>)

Academic Plan Code(s): EREDMAT

Program Information

The MAT in Early Elementary Education enables graduate students to earn their initial teaching certificate for grades P-5 in Kentucky. Candidates learn to teach through instruction in pedagogy, child development, special education, technology, and diversity. The Early Elementary Education program emphasizes meeting the needs of the individual learner using best instructional practices in a standards-based environment.

The Alternative Certification program is designed to assist local school districts in meeting the demand for qualified teachers. The program provides candidates with an opportunity to pursue initial teacher certification while working as a full-time teacher on a temporary provisional license. Employment is not required for initial acceptance to the program. However, candidates must be employed in a Kentucky-accredited school by the start of the school year in order to continue in the program. This program is a two-year, 30 credit hour program resulting in initial teacher certification and a Master of Arts in Teaching (MAT) degree.

Admission Requirements

Candidates who meet the following criteria may be eligible to apply to the Master of Arts in Teaching, Alternative Certification program. Candidates considering an application to the MAT program should contact the MAT admissions counselor (teacher@louisville.edu (<http://louisville.edu/cgi-bin/uofl.mail?teacher>)) prior to applying for admission. Admission is competitive.

Candidates who meet minimum academic requirements are not guaranteed admission to the program:

- a. Application to Graduate School (<http://louisville.edu/graduate/apply/>). This should be completed three to four weeks prior to the application deadline.

- b. Bachelor's Degree (<http://louisville.edu/education/degrees/info/bachelors/>) from Accredited College or University with major in content area and a minimum 2.75 Grade Point Average (official transcripts (<http://louisville.edu/education/degrees/info/transcripts/>) required)
 - c. Prerequisite Course Requirements (<http://louisville.edu/education/degrees/info/mat-eee-prereq/>)
 - d. Grade of C or higher in ENGL 102 (or equivalent)
 - e. Oral Communication (<http://louisville.edu/education/degrees/info/oral-comm/course>)
 - f. TOEFL (<http://louisville.edu/education/degrees/info/toefl/>)/IELTS (<https://www.ielts.org/>)/Duolingo (<https://www.duolingo.com/>)
 - g. Professional Writing Requirements (<https://louisville.edu/education/degrees/info/mat-mse-professional-statement/>)
 - h. Three Letters of Recommendation (<http://louisville.edu/education/degrees/info/lor/>)
 - i. Acceptable interview
- a.

Program Requirements

Code	Title	Hours
EDTP 631	Integrated Teaching and Learning I	3
EDTP 632	Integrated Teaching and Learning II	3
EDTP 633	Integrated Teaching and Learning III	3
EDTP 627	Practicum for Alternative Certification Program (Fall Semester)	1.5
EDTP 627	Practicum for Alternative Certification Program (Spring Semester)	1.5
EDTP 656	Elementary Content Methods: Language Arts & Social Studies	3
<i>Mid-Point Assessment</i>		
EDTP 650	Elementary Content Methods: Mathematics and Science	3
EDTP 503	Developing Cross-Cultural Competence: Teaching Students from Diverse Backgrounds	3
EDSP 518	Teaching Reading Special Education P-12	3
EDTP 678	Supporting the Second Year Alternative Certification Teacher I	1.5
EDTP 599	Music, Art, and Motion in P-5 (or Graduate level elective)	3
EDTP 679	Supporting the Second Year Alternative Certification Teacher II	1.5

Minimum Total Hours 30

Notes:

a. A graduate level Special Topics course (EDTP 597) may be offered as a replacement for two prerequisite courses - MATH 151 and MATH 152.

b. To maintain your Temporary Provisional Certificate, you MUST be enrolled in Alternative certification coursework.

Midpoint Assessment: Completion of all courses listed above; satisfactory dispositions assessment; 3.0 cumulative GPA in course work above with no lower than a "C" in each course – and no more than

a total of two "C's"; all pre-requisites met; satisfactory performance on all Hallmark Assessment Tasks; Target performance or better on all rubrics.

Degree Assessment: All program course work with 3.0 cumulative GPA (and no more than a total of two "C's" on degree courses); satisfactory performance on all Hallmark Assessment Tasks; Target performance or better on all rubrics.

Degree Candidacy: If not enrolled during the semester in which you are graduating, you will need to register for a degree candidacy as outlined in the Graduate Catalog (<https://catalog.louisville.edu/graduate/general-policies-procedures-requirements/>).

Certification Assessment: Satisfactory dispositions assessment; passing scores on PRAXIS content and PLT exams; completion of degree requirements.

Praxis Disclaimer: Teacher certification requirements are subject to change. Before registering for the test(s), please refer to the Education Professional Standards Board (EPSB) website at www.epsb.ky.gov/ (<http://www.epsb.ky.gov/>) for current requirements.

The Master of Arts in Teaching in Early Elementary Education (EREDMAT) prepares students to meet the requirements for certification and/or licensure. If you plan to pursue professional licensure or certification you should first determine your state's criteria for examination and licensure to see how/if our program meets those requirements prior to enrollment. We recommend that you also contact your state's licensing board directly to verify that the requirements have not changed recently and to answer any questions especially those regarding additional requirements beyond the degree.

More information about certification or licensure is available at the following website: louisville.edu/oapa/licensure-information (<https://louisville.edu/oapa/licensure-information/>) (you may search by school or by the name of the program then click on 'View Details' to display the information).

For programs with an online option, more information about certification or licensure is available here: louisville.edu/online/About-Us (<http://louisville.edu/online/About-Us/>) (please scroll down near the bottom of the page and click on the licensing disclosures tab).

Elementary Education (RANK1)

Rank 1 Program in Elementary Education Advanced Practitioner

Unit: College of Education and Human Development (<http://louisville.edu/education/>) (GE)

Department: Elementary, Middle and Secondary Teacher Education (<https://louisville.edu/education/departments/mise/>)

Program Webpage (<https://louisville.edu/education/degrees/rank/>)
Academic Plan Code(s): ERERK1LAP

Program Information

Rank 1 programs are not degree programs.

Rank 1 programs are planned graduate-level programs designed for Kentucky teachers seeking rank change for salary purposes. They are recognized only in the state of Kentucky. By state regulation, Rank 1 status is 60 credit hours of approved graduate credit including a master's degree.

Teachers who complete a Rank 1 program may obtain a Rank change for salary purposes in Kentucky. Through a Rank 1 program, teachers may

increase their depth of knowledge in their teaching areas or in additional areas of certification, as appropriate.

Admission Requirements

Students may apply to the program by first going to the Graduate School website and completing the graduate application (<http://louisville.edu/graduate/apply/>).

Admission requirements include the following credentials:

- Official transcripts with a GPA of 2.75 in the bachelor's degree and a GPA of 3.0 in the master's degree.
- Teaching certificate in Elementary Education and a master's degree/Rank II.
- All applicants for whom English is a second language must also submit official TOEFL scores of 79 or higher on the internet-based test, 213 or higher on the computer-based test. English proficiency can also be met by submitting official IELTS scores of at least 6.5 overall band score from the academic module exam or official Duolingo overall score of 105.
- Signed Professional Code of Ethics/Technology User Agreement.

Applicants who have attended a college or university outside of the United States are also required to submit an evaluation of their transcript through either WES (World Education Services) (<http://wes.org/>) or ECE (Educational Credential Evaluators) (<http://ece.org/>). Please note that transcript evaluations can sometimes take several weeks.

Please have transcripts sent to:

University of Louisville
Graduate School, Admissions
Houchens Building, Suite 105
Louisville, KY 40292

If transcripts are sent electronically, please have them sent to the following email: gradadm@louisville.edu.

Program Requirements

Rank I Program in Elementary Education Advanced Practitioner

(Teachers Who Have Earned a Master's Degree/Rank II)

Code	Title	Hours
Inquiry		3
Select one of the following:		
EDAP 639	Education Research in P-12 Setting	
LEAD 601	Applied Statistics	
Advocacy (Professional Leader)		
Leadership		3
Select one of the following courses:		
EDAP 624	Curriculum Theory	
EDAP 637	Using Assessment to Improve Student Achievement	
EDAP 677	Developing Collaborative Groups: Facilitating, Coaching and Mentoring	
LEAD 636	Creating Equitable & Reliable Learning Environments	

Diversity		3
Select one of the following courses:		
EDTP 503	Developing Cross-Cultural Competence: Teaching Students from Diverse Backgrounds	
EDAP 521	Teaching English Learners in the Classroom	
EDAP 638	Instructional Strategies for Diverse Learners	
EDAP 642	Literacy Learning and Cultural Differences	
Area of Emphasis		12-18
Elective		0-6
Action (Problem Solver)		3
EDAP 681	Teacher Leadership in Practice	
Minimum Total Hours		30

Minimum of fifteen (15) credit hours in 600-level courses is required.

Up to fifteen (15) credit hours of graduate credit may be transferred to the Rank I program as long as the student will have completed 60 credit hours of approved graduate credit including a Masters degree at the end of the Rank I program. Transfer credit must be officially accepted by the advisor, and final acceptance is dependent upon receipt of official transcripts.

In the Rank I program, at least fifteen (15) credit hours of new graduate coursework must be taken at the University of Louisville.

To complete the program, a minimum grade point average of 3.0 is required. No credit shall be accepted for a grade lower than a B-minus.

Midpoint Requirement

Candidates are required to submit a mid-program performance assessment at the completion of fifteen (15) credit hours of coursework. The faculty advisor will assess the candidate's performance assessment, which must be at the Exemplary or Target level. The performance assessment must address content, classroom environment, teaching, assessment, and reflection, and include an artifact (such as a video) to document professional learning.

Exit Requirements

Hallmark Assessment Task for EDAP 681 or equivalent project that demonstrates proficiency in the Kentucky Teacher Performance Standards.

Engineering Management (MEng)

Master of Engineering in Engineering Management

Unit: Speed School of Engineering (<http://engineering.louisville.edu>) (SP)

Department: Industrial Engineering (<https://engineering.louisville.edu/academics/departments/industrial/>)

Academic Plan Code(s): EM_ _MEN, EM_ _MENO

Program Information

This program can be completed entirely online (<http://louisville.edu/online/programs/masters/master-of-engineering-in-engineering-management/>).

The Department of Industrial Engineering of the J.B. Speed School of Engineering offers an online program in Engineering Management. The program is designed to build upon the student's mathematical and analytical expertise gained from prior engineering, math, or related

scientific education as well as upon his or her professional experience gained in the course of active engineering employment.

Degree Requirements

The following degree requirements are mandatory of all Master of Engineering candidates:

- a. The program of study must be completed with a 3.00 GPA or better for all graduate courses used to satisfy degree requirements. Additionally, the program of study must be completed with a 3.00 GPA or better for all academic work attempted in graduate studies.
- b. Master's degree students must take at least 24 credit hours of coursework at the University of Louisville to satisfy the residency requirement for the master's degree. A maximum of six (6) credit hours of graduate credit may be transferred from accredited institutions.
- c. The total requirements must be completed within six years after admission into graduate studies. The time limit imposed by the rule may be extended in individual cases upon recommendation of the department chair and approval of the associate dean for academic and student affairs.

Admission Standards

The admission standards for the MEng program in engineering management are as follows:

- a. All admission applications for the program shall include:
 - i. A completed graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) for the Graduate School
 - ii. Application fee
 - iii. At least two letters of recommendation
 - iv. Personal statement or resume
 - v. Official transcript(s) for all previous post-secondary coursework. All transcripts not in English must be certified as authentic and translated verbatim into English.
- b. The minimum requirement for admission is the Bachelor of Science degree or its equivalent in engineering, math, or related scientific field from an accredited institution.
- c. The minimum undergraduate grade point average that will be considered for unconditional acceptance and admission to the program is 2.75 on a 4.00 scale.
- d. International students whose primary language is not English must show English language proficiency by either TOEFL/IELTS/Duolingo score or demonstration of a degree awarded from an acceptable English language institution. The successful applicant will typically have a TOEFL score of 80 or higher or overall IELTS score of 6.5 or higher or a Duolingo score of 105 or higher.

Admission in good standing shall be made only if all admission credentials have been received, evaluated and approved and all academic requirements met. A student may be admitted provisionally if academic requirements are met but application materials are incomplete (usually missing letters of recommendation or official transcripts). Students have one semester to furnish any credentials missing at the time of admission and may not enroll for a second consecutive term in provisional status.

Any conditional acceptance shall be made on an individual basis and shall require a statement of the rationale for the exception, plans for monitoring progress and performance and stated success criteria. Such justification must be provided in writing and must be accepted by

the program chair and the Speed School associate dean for academic affairs. This will allow consideration of special circumstances in which the potential for acceptable graduate performance has been clearly demonstrated by other means.

Program Requirements

The Master of Engineering in Engineering Management degree requires the following courses.

Code	Title	Hours
EM 613	Operations Management ²	3
EM 661	Engineering Statistics II	3
EM Electives ¹		15
Technical Electives ¹		9
Minimum Total Hours		30

Candidates for the Master of Engineering degree must be completed with a 3.00 GPA or better for all graduate courses used to satisfy degree requirements.

Additionally, the master of engineering degree must be completed with a 3.00 GPA or better for all academic work attempted in graduate studies.

¹ Electives must be chosen so that at least one-half of the credits counted toward the degree, are 600-level. Technical Electives may be taken within or outside the Department. All selections require the approval of the student's faculty advisor.

² Students with a BS Industrial Engineering degree from Speed School will not receive credit for both EM 613 & EM 661. They will be required to take two additional courses in the EM program.

English (MA)



Master of Arts in English

Unit: College of Arts and Sciences (<http://louisville.edu/artsandsciences/intro/>) (GA)

Department: English (<http://louisville.edu/english/graduate/>)

Program Website (<http://louisville.edu/english/graduate/ma-in-english/>)

Academic Plan Code(s): ENGLMA

Program Information

Mission Statement

The Master of Arts in English provides graduate training in literatures written in English, creative writing, and rhetoric and composition.

Goals for the MA are that students will:

- a. Gain advanced knowledge of British, American, and other literary traditions, and
- b. Write a thesis or culminating project in which they initiate and complete specialized research addressing a significant question in literary studies or rhetoric and composition, or produce a significant body of creative work.

Admission Requirements

MA with Graduate Teaching Assistant application: due January 5th

MA without Graduate Teaching Assistant application:

- Fall Semester: Due July 15th
- Spring Semester: Due December 1
- Summer Semester: Due April 15

All applicants should submit:

- a. Online Graduate Application (<https://louisville.edu/graduate/futurestudents/apply-materials/application/>)
- b. Complete official transcripts of **all** college level work
- c. Two academic letters of recommendation with discursive comments
- d. A personal statement (1000 words max.) describing your areas of interest within English studies, your future academic/career plans, and your reasons for applying to our MA program.
- e. Critical writing sample (~ten pages)
- f. International students must also submit official reports of the TOEFL, IELTS or Duolingo examination
- g. Creative writing sample (optional and in addition to the critical writing sample)
- h. Graduate Student Assistantship (GTA) Application (PDF) (<https://louisville.edu/english/graduate/forms/ma-gta-application/>) (January 5th deadline only)
- i. For GTA applicants: A statement (1-2 pages) describing how you would approach teaching in general and teaching writing in particular. If you have experience as a teaching or tutor, describe your teaching philosophy and provide some specific examples of how you turn that philosophy into practice in the classroom or writing center. What are the most important concepts and skills you think student writers need to learn? If you do not have experience as a teacher or tutor, describe what, as a student, you have found effective in your best teachers. What approaches to teaching and what personal qualities did you value in their work? Describe how you would approach teaching based on what you have experienced. What are the most important concepts and skills you think student writers need to learn?

Program Requirements

The Master of Arts in English requires 30 credit hours of academic work at the graduate level. In addition to fulfilling the core requirements, students may take additional work in literary studies, creative writing, or rhetoric and composition. Students may take no more than three 500-level graduate courses. Creative writing courses (including up to six (6) credit hours of thesis guidance) may total no more than 15 credit hours. Students may count one elective outside the Department of English toward their degree upon approval by the director of graduate studies. Student must also demonstrate proficiency in one language other than English. Detailed requirement information can be found

in the (<https://louisville.edu/english/graduate/graduate-program-guidelines-2/>) English Department Graduate Program Guidelines (<https://louisville.edu/english/graduate/graduate-program-guidelines/>). (<https://louisville.edu/english/graduate/graduate-program-guidelines-2/>)

- Thesis Option = 24 credit hours of coursework + six (6) credit hours of thesis guidance
- Non-Thesis Option = 30 credit hours of coursework + culminating project

Graduate-level English courses beyond those listed may count towards requirements depending on the topics covered. Detailed course descriptions (<http://louisville.edu/english/graduate/graduate-course-descriptions/>), available on the English Department website, will provide this information and can be discussed during advising with the director of graduate studies.

Code	Title	Hours
Required Courses		
General Requirements		3
ENGL 601	Introduction to English Studies	
Theory Requirement		3
ENGL 691	Contemporary Theories of Interpretation or ENGL 692 Topics in Interpretive Theory Since 1900	
Literature before 1700 (3 Credit Hours)		3
ENGL 515	Introduction to Old English or ENGL 541 Studies in Old and Middle English Literature - CUE (http://catalog.louisville.edu/undergraduate/general-education-requirements/) or ENGL 542 Studies in Tudor and Elizabethan Literature - CUE (http://catalog.louisville.edu/undergraduate/general-education-requirements/) or ENGL 543 Studies in Stuart and Commonwealth Literature - CUE (http://catalog.louisville.edu/undergraduate/general-education-requirements/) or ENGL 561 Chaucer - CUE (http://catalog.louisville.edu/undergraduate/general-education-requirements/) or ENGL 562 Shakespeare - CUE (http://catalog.louisville.edu/undergraduate/general-education-requirements/) or ENGL 563 Milton - CUE (http://catalog.louisville.edu/undergraduate/general-education-requirements/) or ENGL 581 Studies in Renaissance Drama - CUE (http://catalog.louisville.edu/undergraduate/general-education-requirements/) or ENGL 624 Old English and Middle English Language and Literature or ENGL 631 Renaissance Drama or ENGL 632 Shakespeare or ENGL 633 Renaissance Poetry and Prose or ENGL 671 History of Rhetoric I	
Literature from 1700-1900 (3 Credit Hours)		3
ENGL 545	Studies in British Literature of the Romantic Period - CUE (http://catalog.louisville.edu/undergraduate/general-education-requirements/) or ENGL 544 Studies in Restoration and Eighteenth-Century British Literature - CUE (http://catalog.louisville.edu/undergraduate/general-education-requirements/)	

- or ENGL 545 Studies in British Literature of the Romantic Period
- CUE (<http://catalog.louisville.edu/undergraduate/general-education-requirements/>)
- or ENGL 546 Studies in British Literature of the Victorian Period
- CUE (<http://catalog.louisville.edu/undergraduate/general-education-requirements/>)
- or ENGL 642 Eighteenth-Century Fiction
- or ENGL 643 Eighteenth-Century Poetry and Prose
- or ENGL 644 Romantic Poetry and Prose
- or ENGL 651 Nineteenth-Century Fiction
- or ENGL 652 Nineteenth-Century British Poetry and Prose
- or ENGL 661 Nineteenth-Century American Fiction
- or ENGL 662 Nineteenth-Century American Poetry and Prose

Literature After 1900 (3 Credit Hours) **3**

- ENGL 547 Studies in Modern British and/or Irish Literature - CUE (<http://catalog.louisville.edu/undergraduate/general-education-requirements/>)
- or ENGL 548 Studies in Contemporary British and/or Irish Literature - CUE (<http://catalog.louisville.edu/undergraduate/general-education-requirements/>)
- or ENGL 549 Studies in Post-Colonial and/or Ethnic Literature - CUE (<http://catalog.louisville.edu/undergraduate/general-education-requirements/>)
- or ENGL 573 Studies in American Literature, 1910-1960 - CUE (<http://catalog.louisville.edu/undergraduate/general-education-requirements/>)
- or ENGL 574 Studies in American Literature, 1960 - CUE (<http://catalog.louisville.edu/undergraduate/general-education-requirements/>)
- or ENGL 577 The Harlem Renaissance - CUE (<http://catalog.louisville.edu/undergraduate/general-education-requirements/>)
- or ENGL 654 Twentieth-Century Literature
- or ENGL 664 American Authors: 1900-Present
- or ENGL 665 Contemporary Poetry
- or ENGL 685 Seminar in Modern British Studies

Electives (15 Credit Hours) **15**

Minimum Total Hours 30

English Rhetoric and Composition (PhD)

Doctor of Philosophy in English Rhetoric and Composition

Unit: Unit: College of Arts and Sciences (<https://louisville.edu/artsandsciences/>) (GA)

Department: English (<https://louisville.edu/english/graduate/>)

Program Webpage (<https://louisville.edu/english/graduate/ph-d-in-rhetoric-composition/>)

Academic Plan Code(s): ERC _ PHD

Program Information

Mission Statement

The Doctor of Philosophy in Rhetoric and Composition provides graduate training in the history and theory of rhetoric; theory and empirical research in composition; an area of literary study; and the relation of

rhetoric and composition to allied fields (e.g., critical theory, cultural studies, linguistics).

Goals for the PhD are that students will:

- a. Gain specialized and current disciplinary knowledge;
- b. Write a dissertation in which they initiate and complete specialized research that addresses an original and significant question in rhetoric and composition; and
- c. Acquire experience and expertise as writing teachers.

Admission Requirements

Application Due: January 5 (fall admission only)

All applicants should submit:

- a. Online Graduate Application (<http://louisville.edu/graduate/apply/>).
- b. A written statement of no more than 1,000 words detailing the applicant's professional goals in the field of rhetoric and composition.
- c. Complete official transcripts of **all** college-level work.
- d. Three academic letters of recommendation.
- e. Critical writing sample (15-20 pages).
- f. Application for Graduate Teaching Assistantship (<https://louisville.edu/english/graduate/forms/PhDGTAApplicationII.pdf>) (GTA). The entire application must be completed by January 5th to be considered for a GTA position. The completed GTA application form should be sent directly to the department via email to: enlgrad@louisville.edu.
- g. Statement (1-2 pages) describing how you would approach teaching in general and teaching writing in particular. If you have experience as a teaching or tutor, describe your teaching philosophy and provide some specific examples of how you turn that philosophy into practice in the classroom or writing center. What are the most important concepts and skills you think student writers need to learn? If you do not have experience as a teacher or tutor, describe what, as a student, you have found effective in your best teachers. What approaches to teaching and what personal qualities did you value in their work? Describe how you would approach teaching based on what you have experienced. What are the most important concepts and skills you think student writers need to learn?
- h. All applicants for whom English is a second language must also submit official TOEFL scores of 79 or higher on the internet-based test, 213 or higher on the computer-based test. English proficiency can also be met by submitting official IELTS scores of at least 6.5 overall band score from the academic module exam or official Duolingo overall score of 105. Students holding a bachelor's or advanced degree from an accredited institution in the United States may be exempt from this requirement.

Degree Requirements

All doctoral students are expected to complete a minimum of 45 graduate credit hours; demonstrate proficiency in one language other than English; successfully complete the Modern and Contemporary Rhetoric and Composition exam and the Specified Literature Area exam; complete and defend a dissertation; and participate in a year-long supervised teaching-internship. (Graduate teaching assistants automatically fulfill the professional requirement once they have completed one successful year as a graduate teaching assistant.)

More information on requirements can be found in the English Department Graduate Program Guidelines (<https://louisville.edu/english/graduate/graduate-program-guidelines/>).

Graduate-level English courses beyond those listed may count towards requirements depending on the topics covered. Detailed course descriptions (<http://louisville.edu/english/graduate/graduate-course-descriptions/>), available on the English Department website, will provide this information and can be discussed during advising with the director of graduate studies.

Code	Title	Hours
General Requirements		
ENGL 602	Teaching College Composition	3
ENGL 620	Research in the Composition	3
ENGL 689	Directed Reading for Comprehensive Examinations	3
Pedagogy and Program Administration 3		
ENGL 667	Assessing and Responding to Student Writing or ENGL 670 Composition Theory and Practice	3
Rhetoric 3		
ENGL 603	Studies in Genres or ENGL 671 History of Rhetoric I or ENGL 672 History of Rhetoric II or ENGL 673 Rhetoric and Textual Analysis or ENGL 676 The Rhetoric of Science	3
Literature ¹ 9		
ENGL 691	Contemporary Theories of Interpretation or ENGL 692 Topics in Interpretive Theory Since 1900	3
ENGL 603	Studies in Genres or ENGL 605 Teaching Literature: Theory and Practice or ENGL 606 Creative Writing I or ENGL 607 Creative Writing II or ENGL 624 Old English and Middle English Language and Literature or ENGL 631 Renaissance Drama or ENGL 632 Shakespeare or ENGL 633 Renaissance Poetry and Prose or ENGL 642 Eighteenth-Century Fiction or ENGL 643 Eighteenth-Century Poetry and Prose or ENGL 644 Romantic Poetry and Prose or ENGL 651 Nineteenth-Century Fiction or ENGL 652 Nineteenth-Century British Poetry and Prose or ENGL 653 Irish Studies or ENGL 654 Twentieth-Century Literature or ENGL 660 African-American Literature or ENGL 661 Nineteenth-Century American Fiction or ENGL 662 Nineteenth-Century American Poetry and Prose or ENGL 664 American Authors: 1900-Present or ENGL 665 Contemporary Poetry or ENGL 681 Seminar in Special Studies or ENGL 685 Seminar in Modern British Studies or ENGL 686 Seminar in American Studies	6
Electives 9		

ENGL 690	Dissertation Research	12
Minimum Total Hours		45

¹ Students must take either ENGL 691 or ENGL 692 as part of the Literature requirement. The remaining Literature hours may be selected from any of the additional courses listed, in consultation with the student's advisor.

Entrepreneurship (PhD)

Doctor of Philosophy in Entrepreneurship

Unit: College of Business (<http://business.louisville.edu/>) (GB)

Department: Entrepreneurship (<http://business.louisville.edu/eship/>)

Program Website (<https://business.louisville.edu/entrepreneurshipphd/>)

Academic Plan Code(s): ENTRPHD

Program Information

Admission to the program is highly competitive. It is based on an applicant's past graduate and undergraduate school records, score on the graduate management admissions test (GMAT), prior experiences, a personal statement and letters of recommendation.

No specific graduate or undergraduate major is required. However, an MBA is preferred. A student who does not have a master's degree in business may be required to complete a set of courses equivalent to a "core" that is covered in an MBA program. Questions about prerequisites should be directed to the program director. This is a full-time program, requiring year-round study and a 20-hour/week paid research assistantship. Typically, students can finish their coursework in two years and the program in four-to-five years, subject to progress on a dissertation. Students generally take about 15 courses consisting of seminars and directed readings and/or research. A student's curriculum choices are supervised and approved by an advisory committee.

All required courses are offered on a biennial basis in the Fall, Spring, and Summer semesters, along with a variety of elective courses.

Admission Requirements

Admission to the program is highly competitive. This is a full-time program, requiring year-round study and a 20 hour/week paid research assistantship. Typically, students can finish their coursework in two years and the program in four-to-five years, subject to progress on a dissertation. Students generally take about 15 courses consisting of seminars and directed readings and/or research. A student's curriculum choices are supervised and approved by an advisory committee.

The following application materials are required:

- Complete a graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) for admission through the Graduate School.
- Official transcripts of all undergraduate and graduate work. An undergraduate degree is required. No specific graduate or undergraduate major is required. However, an MBA is preferred. A student who does not have a master's degree in business may be required to complete a set of courses covered in an MBA program.
- Official GMAT score. A GMAT score is required that is no more than two years old from date of application. A GRE score may be substituted for a GMAT score where GMAT testing is not available.

- Two letters of recommendation.
- Resume or CV.
- Personal statement about the applicant's interest in entrepreneurship research.
- Applicants with credentials from foreign universities must submit them for evaluation to one of the following services, which will issue a report that will become part of the applicant's application:
 - World Education Services www.wes.org (<http://www.wes.org>)
 - Education Credentials Evaluator ece.org (<http://ece.org>)
- Applicants with a degree from a non-English speaking university or those for whom English is not their native language must submit a TOEFL (<https://www.ets.org/toefl/>)/IELTS (<https://www.ielts.org/>)/Duolingo (<https://www.duolingo.com/>) score.

All required courses are offered on a biennial basis in the fall, spring and summer semesters.

Degree Requirements

The goal of the curriculum is to produce academic scholars who will present papers at professional conferences, publish papers in academic journals, and teach at the university level. We anticipate that students will be successful academics at leading universities. Because of this, students serve as research assistants during two years of the program. Students gain teaching experience during the last two years in the program.

After passing qualifying exams, required courses, and writing required papers, students proceed into candidacy and write their doctoral dissertations in their remaining years of the program.

The following are the current curriculum requirements for the Entrepreneurship PhD, which includes 39 credit hours of approved course work. Because the state of the knowledge in the field changes, both the content and sequencing of these course requirements changes to address topics of current interest in the field. Faculty may change as well.

The curricular requirements include:

- At least 52 credit hours at the 700-level that includes pre-dissertation/dissertation research coursework.
- Included with the 52 credit hours, students will complete a minimum of 39 credit hours in courses dedicated to the primary area of study. This includes:
 - Entrepreneurship core which consists of a minimum of 15 credit hours required of all PhD students that includes: ENTR 723, ENTR 724, ENTR 745, ENTR 746, and ENTR 747
 - Research design and methods which consists of a minimum of 12 credit hours required of all PhD students that includes: ENTR 702, ENTR 741, ENTR 710, and ENTR 711
 - Supporting field seminars which consist of a minimum of 12 credit hours in supporting course work that is approved by the PhD advisory committee.

Applicants should contact the Program Director, Dr. Daniel Bennett, at daniel.bennett.2@louisville.edu (danielbennett.2@louisville.edu) if they have questions about the curriculum requirements.

Code	Title	Hours
<i>Primary Area Courses</i>		
Entrepreneurship Core		15
ENTR 745	Entrepreneurship Theory I	

ENTR 746	Entrepreneurship Theory II	
ENTR 724	Seminar in Entrepreneurship from a Strategic Perspective	
ENTR 723	Seminar in Organizational Behavior/Human Resources in Entrepreneurship	
ENTR 747	Corporate Entrepreneurship and Innovation	
Research Design & Methods		12
ENTR 702	Seminar in Research Design I	
ENTR 741	Seminar in Research Design II	
ENTR 710	Statistics I	
ENTR 711	Statistics II	
Supporting Field Seminars (offerings will vary)		12
Independent Research		13
Minimum Total Hours		52

Environmental Engineering (CERT)

Graduate Certificate in Environmental Engineering

Unit: Speed School of Engineering (GS) (<https://engineering.louisville.edu>)

Department: Civil and Environmental Engineering (<https://engineering.louisville.edu/academics/departments/civil/>)

Academic Plan Code(s): ENVECEEGS

Program Information

Students interested in increasing their knowledge of Environmental Engineering can take a series of courses and earn a certificate. The certificate program offers courses in the following disciplines:

- Civil and Environmental Engineering
- Chemistry
- Biology
- Mechanical Engineering
- Chemical Engineering

This is a certificate program, not a degree program. The Graduate Certificate in Environmental Engineering is awarded while completing the graduate degree program (MEng, MS, or PhD) at Speed School of Engineering.

Admission Requirements

Admission to the Speed School of Engineering division of higher studies (MEng) or the graduate school (MS or PhD) in Engineering.

All admission applications for the graduate certificate program shall include the following:

- Graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) for the Graduate School;
- Application fee;
- Official transcript certifying at least a bachelor's degree. All transcripts not in English must be certified as authentic and translated verbatim into English.
- A baccalaureate degree (or equivalent) from an accredited institution or current enrollment in a graduate Speed School program.

All students enrolled in a graduate certificate program are expected to make steady and satisfactory progress toward the completion of the certificate. Students who are not enrolled for a period of more than

12 months will be considered to have withdrawn from the certificate program. Students who seek to return after such a period of time must contact the graduate program director.

Certificate Requirements

The following certificate requirements are mandatory for all graduate certificate candidates:

- The certificate program of study must be completed with a 3.00 GPA or better for all graduate courses used to satisfy certificate requirements while enrolled in the graduate degree program (MEng, MS, or PhD). The student, if eligible, must apply for the certificate prior to graduation.
- Completion of a graduate degree program at Speed School of Engineering (MEng, MS, or PhD).
- Graduate certificate students must take all certificate coursework at the University of Louisville. **No transfer credits will be accepted toward a graduate certificate.**

Program Requirements

Coursework

Code	Title	Hours
	Environmental Engineering Electives (500-level, see below) *	0-6
	Environmental Engineering Electives (600-level, see below) *	6-12
Minimum Total Hours		12

*Students must complete twelve (12) credit hours, with at least six (6) credit hours at the 600 level. Courses are to be selected from the following lists. All prerequisites must be met. Graduate courses not shown in the lists below require approval from the Certificate Program Director.

Certificate courses do not constitute a degree program, but may be applied toward MEng, MS, or PhD degree requirements.

Other requirements

Completion of a graduate degree program at Speed School of Engineering (MEng, MS, or PhD).

Approved Environmental Engineering Elective Courses

Code	Title	Hours
Approved 500-level Environmental Engineering Electives		0-6
<i>Students may take up to 6 credit hours from the following:</i>		
CEE 570	Applied Hydraulics	
CEE 571	Applied Hydrology	
CEE 572	Open Channel Hydraulics	
CEE 573	Groundwater Hydrology	
CHE 509	Environmental Processes and Systems	
CHE 533	Chemical Engineering Safety and Health	
CHE 534	Industrial Waste Management	
CHE 535	Pollution Prevention	
ME 570	Sustainable Energy Systems	
ME 580	Air Pollution Control	
BIOL 522	Aquatic Ecology	
Approved 600-level courses:		6-12
<i>Students must take at least 6 credit hours from the following:</i>		
CEE 670	Advanced Hydraulics	

CEE 673	Advanced Hydrology
CEE 674	Water Resources Systems
CEE 675	Surface Water Quality Modeling
CEE 681	Green Engineering & Sustainable Design
CEE 694	Special Topics in Civil Engineering (Advanced Environmental Processes & Systems)
CEE 694	Special Topics in Civil Engineering (Air Quality)
CEE 694	Special Topics in Civil Engineering (Stream & Wetland Restoration; Wetland Design)
CEE 694	Special Topics in Civil Engineering (Watershed Erosion, Sedimentation, and Water Quality)
CHE 620	Transport Phenomena I
CHE 637	Advanced Stagewise Processes
CHE 638	Advanced Absorption
CHE 650	Membrane Separations
CHE 662	Advanced Process Control
CHE 694	Special Topics in Chemical Engineering
CHEM 622	Analytical Separations
BIOL 662	Advanced Ecosystems Ecology
ME 614	Heating, Ventilating, and Air Conditioning
ME 667	Solar Energy Applications

Total Minimum Credit Hours 12

Epidemiology (MS)

Master of Science in Epidemiology

Unit: School of Public Health and Information Sciences (<https://louisville.edu/sphis/>) (GH)

Department: Epidemiology and Population Health (<https://louisville.edu/sphis/departments/eph/>)

Program Website (<https://louisville.edu/sphis/departments/eph/academics/>)

Academic Plan Code(s): EPIDMSE

Program Information

The Master of Science (MS) in Epidemiology program is designed to prepare students for the PhD program in Public Health Sciences with a concentration in Epidemiology. The MS in Epidemiology is offered by the Department of Epidemiology and Population Health.

Competencies

To graduate, students in the MS program in epidemiology must maintain a GPA of 3.0 or higher and be able to demonstrate the following competencies:

- Explain the evolving paradigms of epidemiologic theory and study design and their impact on public health and medical sciences
- Summarize scientific literature on an epidemiologic problem
- Formulate epidemiologic research questions and testable hypotheses
- Apply computer software for data management and analysis
- Design and apply methods for data collection and management for epidemiologic research
- Apply advanced quantitative methods to analyze an epidemiologic problem
- Integrate cross-disciplinary knowledge from molecular to population levels to make appropriate causal inferences

- Communicate in written and oral presentations epidemiologic concepts and findings to diverse audiences

In greater detail, an MS student must specifically demonstrate:

- Mastery of the principles of epidemiologic, observational study design, including:
 - The merits and limitations of cross-sectional, retrospective and prospective designs
 - Methods of disease surveillance and case ascertainment
 - Methods of population-based sampling
 - Sample size and statistical power calculation
 - Issues in the measurement of exposure and disease transmission
 - Identification and correct interpretation of potential biases in study design
- Knowledge of the socioeconomic and geographic distribution, risk factors, and etiology of major acute, infectious and chronic morbidity and mortality.
- Mastery of basic methods of analysis of epidemiologic data, including:
 - Measures of disease frequency, prevalence and incidence
 - Methods for adjusting rates for age, gender, etc.
 - Measures of association, odds ratio, relative risk
 - Control of confounding and effect modification through stratification and statistical control
 - Modeling in multiple logistic regression
 - Principles of survival analysis
 - Correct interpretation of results with regard to issues of error, bias and criteria for causality

These competencies are demonstrated through the successful completion of the coursework and the design, execution, documentation, and presentation of the research for the student's thesis.

Curriculum

The program is designed as a two-year program of coursework and thesis research and preparation. The student is expected to develop and plan his or her thesis research prior to the final semester in which the majority of the actual research is done.

Faculty Advisor

Upon admission to the MS program, each student is assigned a faculty advisor by the department chair or program director. Students and/or advisors who wish to change their assigned relationship must make a written request to the department chair or program director.

The student and his or her faculty advisor work together to develop a program of study that recognizes the student's research interests and core elements of modern epidemiology and its breadth and multidisciplinary nature.

Admission Requirements

Students with a prior baccalaureate degree, or an advanced degree in an appropriate field of study, from a regionally accredited university or college are eligible for the MS program in Epidemiology.

Previous coursework in mathematics and/or statistics and biological or health sciences (for example, biology, biochemistry, anatomy, physiology, and/or microbiology) is strongly recommended. Applicants who are

judged to not have sufficient prior coursework or experience in these areas may be required to take additional coursework.

The following are required for admission:

- Formal application through the Graduate School (<https://louisville.edu/graduate/futurestudents/apply-materials/application/>) with transcripts and curriculum vitae,
- A one-page personal statement describing the applicant's background and interest in epidemiology,
- Two letters of recommendation,
- Undergraduate GPA at least 3.0 on 4.0 scale,
- International students for whom English is not their primary language must show English language proficiency by one of the following:
 - International students for whom English is not their primary language must show English language proficiency by one of the following:
 - TOEFL examination score at or above a 5.0 on the TWE test), 213 (computer based test) or 79 (internet based test)
 - IELTS test score of 6.5 or higher
 - Duolingo test score of 105 or higher
 - ECFMG (Educational Commission for Foreign Medical Graduates) certification
 - Successfully passing the exit examination for the advanced level of an Intensive English as a Second Language Program
 - Demonstration of a degree awarded from an institution with instruction primarily in English, as formally documented by an appropriate institutional official

Application Deadline

Fall semester - March 1 (International applicants); April 1 (Domestic applicants).

Spring semester - Applications are not accepted.

Summer semester – Applications are not accepted.

Program Requirements

Degree requirements include required coursework in epidemiology, elective coursework in biostatistics and in public health sciences, and a thesis.

38 total credit hours:

- 20 credit hours of required coursework
- 12 credit hours of elective coursework
- 6 credit hours of thesis research

Year 1		Hours
Fall		
PHEP 621	Statistical Foundations for Epidemiology	4
PHEP 622	Population Pathology	3
PHEP 623	Theoretical Foundations of Epidemiology	3
		Hours
		10
Spring		
Content Course Elective ¹		3
Public Health Selective ²		3
PHEP 618	Epidemiologic Methods II	4
		Hours
		10

Summer		
PHEP 666	Master's Independent Study in Epidemiology and Population Health (optional) ³	1-3
Hours		3
Year 2		
Fall		
PHEP 701	Advanced Epidemiologic Methods	3
PHEP 702	Epidemiologic Research Management	3
Content Course Elective ¹		3
Hours		9
Spring		
Content Course elective ¹		3
PHEP 666	Master's Independent Study in Epidemiology and Population Health ³	1-3
Hours		6
Minimum Total Hours		38

¹ PHEP-xxx *Content Course Electives* consist of courses specialized in either an exposure or disease category and offerings will vary from semester to semester based upon faculty workloads. In the MS program these courses will emphasize (*if not be restricted to*):

- PHEP 607 Epidemiology of Cancer
- PHEP 611 Nutritional Epidemiology
- PHEP 613 Epidemiology of Aging and Disability
- PHEP 615 Foundations of Global Maternal and Child Health
- PHEP 620 Environmental and Occupational Epidemiology
- PHEP 624 Methods in Reproductive and Perinatal Epidemiology
- PHEP 625 Child Health & Development
- PHEP 626 Introduction to Social Epidemiology

² PHxx *Public Health Selective* may be a PHEP offering or an offering from another SPHIS department: students will have to rationalize their selection with respect to their program of study which must be approved by the Program Director.

³ PHEP 666 Master's Independent Study in Epidemiology and Population Health is an independent study course in which an MS student can *research and develop a thesis idea*. A total of six (6) credit hours of enrollment in PHEP 666 is required. Students may elect to take three (3) credit hours in the summer and three (3) credit hours in the Spring II semester, or take all six (6) credit hours in Spring II. Completing the course does not mean they have completed their thesis. Thesis completion follows the requirements laid out in the Student Handbook and is not achieved by a for-credit course.

Thesis

The thesis is expected to be a scholarly achievement in research that demonstrates a thorough understanding of research techniques in epidemiology. It is expected to be original, professional quality, and worthy of publication, in whole or in part, in the peer-reviewed scientific literature.

Thesis Committee

A thesis committee consists of three faculty members. The committee chair must be an active, full-time faculty member in the Department of Epidemiology and Population Health. At least one member must be from another department in SPHIS, another school or unit in the university, or outside of the university pending approval of graduate faculty status. In all cases, the majority of a committee must hold primary appointments in the department.

Thesis Proposal

Students are required to submit a written proposal and make a formal oral presentation to their committee before embarking on thesis research.

The proposal should include a brief, but comprehensive literature review supporting an acceptable research rationale, hypotheses and specific aims, a proposed study design, a preliminary outline of methods, a list of resources, and a tentative timetable. The committee will discuss with the student any revisions needed before the student can progress with their research.

Thesis Preparation

The thesis is to be prepared in format and binding according to the guidelines established by the Graduate School (<http://louisville.edu/graduate/current-students/thesis-dissertation-information/>).

Thesis Approval

The written thesis must be submitted in completed form to all members of the committee at least thirty days before the end of the term in which the candidate expects to graduate

The student must schedule their oral defense at least two weeks in advance so that the time and place for the oral presentation may be posted to the faculty and students of SPHIS and general academic community who are free to attend. The student should also pay close attention to university deadlines for submitting their work to the Graduate School and in relation to graduation.

The thesis is approved by a majority vote of the committee.

Thesis Submission

The following steps must be taken to submit the final copy of the thesis electronically after oral defense and approval of the committee:

- a. Final document must be converted to a PDF (following the guidelines as noted above) and sent to the Graduate School and the department's administrative assistant.
- b. Submit as advised by the Graduate School through the ThinkIR repository. The directions on submission will be provided upon review of the thesis by the Graduate School.
- c. The signature page within the electronic version must have the names of your committee members typed under the signature line; the signatures cannot be scanned into the document.
- d. Submit a signed signature page (digital/electronic signature page (<http://louisville.edu/graduate/current-students/thesis-dissertation-information/>) can be found on the Graduate School web-site) to the Graduate School.

A copy of the final, signed thesis must also be deposited with the department office.

Exercise Physiology (MS)



Master of Science in Exercise Physiology (EXP MS)

Unit: College of Education and Human Development (<http://louisville.edu/education/>) (GE)

Department: Health and Sport Sciences (<http://louisville.edu/education/departments/hss/>)

Program Webpage (<https://louisville.edu/education/degrees/ms-ep/>)

Academic Plan Code(s): EXP_MS

Program Information

General Program Information

Students who complete the Master of Science degree in Exercise Physiology are prepared to pursue a number of career options. Graduates from our program have continued their education by completing the PhD degree in fields such as exercise physiology, physiology, biochemistry, while others continue to the MD. Many students have pursued careers in allied health fields such as nursing and physical therapy as well as in such fields as aviation physiology, cardiac rehabilitation, corporate wellness, and ergonomics.

Because many of our students seek to work in the fields of cardiac rehabilitation and corporate wellness, the curriculum is structured to satisfy the preliminary requirements for certification as "exercise technologist" or "exercise specialist" as set by the American College of Sports Medicine. The curriculum provides students the necessary knowledge base and coursework to satisfy entrance into the certification process (which is under the control of the American College of Sports Medicine and requires both a written and practical exam).

Admission Requirements

- Complete a graduate application (<https://louisville.edu/graduate/futurestudents/apply-materials/application/>) for admission.
- Earning an undergraduate major (exercise science, kinesiology, physical therapy, medicine, physiology, nursing, biology, chemistry, etc.) with a Grade-Point Average ≥ 2.75 on a 4-point scale.
- Completion of all prerequisite courses from the following list with a grade ≥ 3.0 on a 4-point scale: Exercise Physiology; Biomechanics/Structural Kinesiology; Anatomy & Physiology (minimum of six (6) credit hours).
- A resume where candidates will describe the experience they have accumulated in the fields of exercise science, exercise physiology, sport science, and/or strength and conditioning and a personal statement (500 words or less) where candidates will explain their interest in the program and professional objectives.
- Three letters of recommendation.

- All applicants for whom English is a second language must also submit official TOEFL scores of 79 or higher on the internet-based test, 213 or higher on the computer-based test. English proficiency can also be met by submitting official IELTS scores of at least 6.5 overall band score from the academic module exam or official Duolingo overall score of 105.
- Following review of materials listed above, eligible candidates will be invited to an interview with the selection committee where they will be provided with information about the program and will further discuss the content of their application.

Degree Requirements

Code	Title	Hours
Core Courses		
HSS 506	Athlete Monitoring and Data Management	3
HSS 530	Nutrition and Athletic Performance	3
HSS 604	Research Methods in HSS	3
EXP 501	Applied Exercise Physiology	3
EXP 503	Clinical Exercise Physiology	3
EXP 600	Exercise Biochemistry	3
EXP 601	Laboratory Methods in Exercise Physiology	3
EXP 605	Human Physiology	3
EXP 607	Neuromuscular Exercise Physiology	3
EXP 608	Strength and Conditioning I	3
EXP 611	Advanced Cardiorespiratory Physiology with ECG	3
Capstone Courses (select one):		6
EXP 620	Exercise Physiology Internship	
EXP 699	Thesis	
Minimum Total Hours		39

The Master of Science in Exercise Physiology program prepares students to meet the requirements for certification and/or licensure. If you plan to pursue professional licensure or certification, you should first determine your state's criteria for examination and licensure to see how/if our program meets those requirements prior to enrollment. We recommend that you also contact your state's licensing board directly to verify that the requirements have not changed recently and to answer any questions especially those regarding additional requirements beyond the degree.

More information about certification or licensure is available at the following website: <https://louisville.edu/oapa/licensure-information> (<https://louisville.edu/oapa/licensure-information/>) (you may search by school or by the name of the program then click on 'View Details' to display the information).

For programs with an online option, more information about certification or licensure is available here: <https://louisville.edu/online/About-Us?tab=disclosures> (<https://louisville.edu/online/About-Us/?tab=disclosures>)

Family Business Management and Advising (CERT)

This program was approved for students entering the university in the Summer 2023–Spring 2024 catalog year. For more information about

catalog year, go to Catalog Year Information (<http://catalog.louisville.edu/undergraduate/university-wide-unit-specific-policies/catalog-year/>).

Graduate Certificate in Family Business Management and Advising Unit: College of Business (<https://business.louisville.edu/>)
Academic Plan Code(s): FBMACGRO (http://louisville.edu/online/request-info/?ool_program=gcfbma&utm_source=all-program-page&utm_medium=organic)

Program Information

This program is completed entirely online (http://louisville.edu/online/request-info/?ool_program=gcfbma&utm_source=all-program-page&utm_medium=organic).

This program is designed to align with the needs of family enterprises, their current and future leaders (both family and non-family), and the professional advisors who serve them. This graduate certificate program will provide students with knowledge and skills that will help them understand, manage, and navigate the intricacies of family businesses and provide tools to advise them.

Courses in this certificate program will also count toward the College of Business MBA program.

Admission Requirements

Students must have a bachelor's degree from a regionally accredited university and a minimum undergraduate GPA of 2.5 to be admitted to the Family Business Management and Advising certificate program.

GMAT/GRE scores will not be required for admission to the program.

Students will be required to complete all courses and maintain a 3.0 GPA in order to graduate.

Program Requirements

Code	Title	Hours
FMBZ 610	Family Business Management	1.5
FMBZ 620	Entrepreneurial Family Dynamics	1.5
FMBZ 630	Family Business Transitions and Continuity	1.5
FMBZ 640	Family Business Governance	1.5
FMBZ 650	Family Wealth Creation and Preservation	1.5
FMBZ 660	Leading Family Businesses	1.5
Minimum Total Hours		9

Franchise Management (CERT)

Graduate Certificate in Franchise Management

Unit: College of Business (<https://business.louisville.edu/>) (GB)
Program Website (<http://louisville.edu/online/programs/certificate-programs/franchise-management/franchise-management-certificate/>)
Academic Plan Code(s): FM_ _CFM, FM_ _CFMO

Program Information

This program can be completed entirely online (<http://louisville.edu/online/programs/certificate-programs/franchise-management/franchise-management-certificate/>).

The Franchise Management Certificate is a nine (9) credit hour certificate that focuses on the unique skills and knowledge necessary to succeed

as a franchisee—including acquiring, running, and growing franchise operations.

The curriculum was designed in close partnership with industry experts. The six accelerated, highly focused, 1.5 credit hour courses are designed for individuals who plan to become franchisees, as well as existing single-site franchisees who want to gain the skills and knowledge necessary to grow their franchise business. Those working for franchisors will also benefit in understanding the franchising industry, allowing them to create even stronger relationships with their franchisees. The curriculum is 100% asynchronous, allowing students the flexibility to learn at the time best for them.

The Franchise Management certificate can be taken in conjunction with the MBA program (<http://catalog.louisville.edu/archive/2023-2024/graduate/programs-study/master-business-administration/>). For students who are accepted into the MBA program, it will count towards fulfilling elective requirements in the MBA curriculum.

Admission Requirements

Students must have a bachelor's degree from a regionally accredited university and a minimum undergraduate GPA of 2.0 to be admitted to the Franchise Management certificate program.

GMAT/GRE scores are not required for admission to the program.

Complete a graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>).

Please note: Students who desire to complete an MBA in conjunction with the Franchise Management certificate must be separately admitted to the MBA program (<http://catalog.louisville.edu/archive/2023-2024/graduate/programs-study/master-business-administration/>).

Program Requirements

Code	Title	Hours
FRAN 601	Franchise Fundamentals	1.5
FRAN 610	Franchise Law	1.5
FRAN 620	Buying and Growing a Franchise	1.5
FRAN 630	Franchise Human Resources Infrastructure	1.5
FRAN 640	Leading Franchise Teams	1.5
FRAN 650	Building a Profitable Relationship with Your Franchisor	1.5
Minimum Total Hours		9

To complete the program, students must have a minimum of a 3.0 cumulative grade point average.

Geography, Applied (MS)

Master of Science in Applied Geography

Unit: College of Arts and Sciences (<http://louisville.edu/artsandsciences/>) (GA)
Department: Geographic and Environmental Sciences (<http://louisville.edu/geogeo/>)
Program Website (<http://louisville.edu/geogeo/graduate/>)
Academic Plan Code(s): AGEOMS

Program Information

The Master of Science in Applied Geography is designed to provide students with the analytical skills and background knowledge needed to solve real-world problems with geographic dimensions. Graduate students experience a nucleated body of coursework designed to foster and support the theoretical knowledge and advanced skill sets demanded for the professional and academic/research fields. Coupled with the enhanced level of course content, quantitative, qualitative and spatial data analysis applications, and the departmental emphasis upon critical reasoning, effective writing and communication skills, graduates will be capable and prepared for effective integration into a broad diversity of professional fields.

Our course offerings and faculty research areas include geographic information systems (GIS), remote sensing, climatology and meteorology, urban and regional studies, quantitative and qualitative methods, medical geography, globalization, hydrology and water resources, geomorphology, transportation and location analysis, border security, land use/land cover change and the geography of food and race.

Geographic information systems (GIS) proficiency is required for all students. If not attained at the undergraduate level or in a job-related environment, students will be required to take GEOG 558 in addition to the coursework listed as program requirements. The department has state-of-the-art computer facilities with GIS and remote sensing software.

The program offers both thesis and non-thesis options. Students who choose the non-thesis option are required to take a written comprehensive exam near the end of their course of study. Students may attend either full- or part-time.

Admission Requirements

Students from geography and related fields are encouraged to apply. All applicants must hold a BA or BS degree from an accredited college or university and must have earned a minimum cumulative 3.0 GPA.

All applicants must complete/submit the following:

- A graduate admissions application (<http://www.louisville.edu/graduate/apply/>)
- Official transcripts from all colleges and/or universities attended
- Two letters of recommendation addressing the candidate's academic abilities, readiness for graduate study, and potential for success. Letters from current and/or former faculty members are preferred.
- A statement of interests and intent covering relevant experience, potential areas of research/study, academic/career goals, and how the MS in Applied Geography would allow the applicant to achieve these goals.

All materials must be submitted to the Graduate School.

Application deadlines:

- May 15 for fall semester (individuals desiring consideration for Graduate Assistantships should apply by March 15th)
- November 15 for Spring semester

Upon acceptance, students receive an enrollment form from the Department with questions about credit hours and financial assistance.

Program Requirements

The Master of Science in Applied Geography is a 30 credit hour program with both a thesis and a non-thesis option.

Geographic information systems (GIS) proficiency is required for all students. If not attained at the undergraduate level or in a job-related environment, students will be required to take GEOG 558 (<http://catalog.louisville.edu/archive/2023-2024/search/?P=GEOG%20558>) in addition to the [coursework requirements](#) listed [below](#).

Thesis Option

Code	Title	Hours
Required Foundation Courses		12
GEOG 600	History and Philosophy of Geography ¹	
GEOG 656	Spatial Statistics ¹	
GEOG 660	Qualitative Methods in Applied Geography ¹	
GEOG 641	Research Design and Proposal Development in Applied Geography	
Electives at 500 or 600 level ²		12
Thesis		6
Minimum Total Hours		30

After the second semester, each thesis student will choose a thesis advisor and two other faculty members for a thesis committee.

Non-Thesis Option

Code	Title	Hours
Required Foundation Courses		12
GEOG 600	History and Philosophy of Geography ¹	
GEOG 656	Spatial Statistics ¹	
GEOG 660	Qualitative Methods in Applied Geography ¹	
GEOG 641	Research Design and Proposal Development in Applied Geography	
Electives at 500 or 600 level ²		18
Comprehensive Examination		
Minimum Total Hours		30

Non-thesis students will choose a three member advising committee to administer and evaluate the comprehensive exam.

¹ GEOG 600, GEOG 656 and GEOG 660 are prerequisites to GEOG 641.

² Up to two courses used to satisfy the elective requirement may be from outside the department.

Health Administration (MS)

Master of Science in Health Administration (HEADMS)

Unit: School of Public Health and Information Sciences (<https://louisville.edu/sphis/>) (GH)

Department: Health Management and Systems Sciences (<https://louisville.edu/sphis/departments/health-management-systems-sciences/>)

Program Website (<https://louisville.edu/sphis/departments/health-management-systems-sciences/academics-1/ms-in-health-administration/>)

Academic Plan Code(s): HEADMS, HEADMS_0

Program Information

This program can be completed in a traditional classroom format or entirely online (<https://louisville.edu/online/programs/masters/online-master-of-science-in-health-administration/>).

Healthcare management is a broad field serving one of the largest and most essential industry segments in the United States and Canada. Management is needed in multiple aspects of the industry which include: hospitals, nursing homes, physician's offices, pharmaceutical and device manufacturers, consulting, government and public policy, and many more.

The Department of Health Management and Systems Sciences (HMSS) offers the Master of Science in Health Administration degree for students with no healthcare experience (MSHA-evening) and a modified curriculum for working mid-career executives (MSHA-online). Evening track students may be enrolled full or part-time. As major policy reforms propel widespread disruption across the entire health care delivery system, HMSS recognizes the need to train and further educate a broad cadre of skilled leaders and managers to meet immediate and critical organizational and system-wide challenges.

Competencies

The Program will use the University of Louisville's Population Health Leadership (PHL) Competency Model. This competency model is a modified version of the National Center for Health Care Leadership (NCHL) competency model ([nchl.org](http://www.nchl.org) (<http://www.nchl.org>)).

For a complete listing of the competencies for this program, please visit the MSHA webpage (<http://louisville.edu/sphis/departments/health-management-systems-sciences/academics-1/ms-in-health-administration/>) for the School of Public Health and Information Sciences

Curriculum

The curriculum has three main components beginning with an exploration of broad principles and key influencers of leading healthcare organizations, moving to an examination of evidence-based and data-driven frameworks for strategic leadership and effective management of healthcare organizations and issues, and then to an analysis of the external health care and policy environments that impact population and community healthcare management.

Accreditation

The Master of Science in Health Administration is accredited by the Commission on Accreditation of Healthcare Management Education (CAHME) (<https://www.cahme.org/>).

Faculty Advisor

On matriculation, each student is assigned a faculty advisor. The faculty advisor serves as academic practicum advisor, academic mentor, and counselor on career and employment opportunities, professional development, and opportunities beyond graduate school. Evening track students are requested to meet at least twice each semester with their advisor. Online track students will meet with their advisor (faculty or staff) at least once each semester to ensure appropriate enrollments align with degree completion requirements.

Dual MPH in Health Policy – Masters in Health Administration

The dual MPH (Health Policy) - MSHA degree program facilitates development of advanced population and public health management professionals that may leverage knowledge and practices from both public health science and healthcare management domains to serve in leadership roles within public health institutions, federal-state-local agencies, and healthcare organizations. For more information about the dual program, please visit the program webpage (<https://louisville.edu/sphis/departments/hmss/academics-1/dual-mph-in-health-policy-msha-program/>).

The dual MPH - MSHA program is not available to MSHA Online track students. Only MSHA Evening track students may apply.

Dual MBA – Masters in Health Administration

The dual MBA - MSHA degree program provides select, high aptitude graduate students a pathway for rigorous, advanced competency development by providing complementary graduate management and healthcare management education over a three-year period in a dual degree format. The residential, one-year MBA provides fundamental business and management development and is followed by the residential, two-year MSHA providing advanced competencies focused in healthcare management that extend development from the MBA program through coursework, health administrative internship/practicum experiences, and extra-curricular graduate healthcare management case study and applied research competitions. Graduates of the dual MBA-MSHA program are expected to be exceptionally competitive for national administrative fellowship placement and/or seek executive-track developmental positions in healthcare finance, operations, and strategy. For more information about the dual program, please visit the program webpage (<https://louisville.edu/sphis/departments/hmss/academics-1/dual-mba-msha/>).

The dual MBA - MSHA program is available for on campus MBA and evening track MSHA students only.

Admission Requirements

The Department of Health Management and Systems Sciences (HMSS) offers the Master of Science in Health Administration degree for students with no healthcare experience (evening track) and a modified curriculum for working mid-career executives (online track).

Prospective students must have a bachelor's degree from an accredited institution or its equivalent. It is recommended that applying students have a minimum undergraduate GPA of 3.0 on a 4.0 scale

Prospective students must also submit:

- Application
 - Graduate application (<https://louisville.edu/graduate/futurestudents/apply-materials/application/>) submitted to the Graduate School.
 - Application Fee
- Official transcripts of all degrees
- Resume or curriculum vitae (CV)
- One-page personal statement written by the applicant that is a clear, substantive description of his or her goals in public health and health care management, noting any professional or research experience.

- Three letters of recommendation written within the last twelve months.
- International applicants: Foreign credential evaluation of all degrees from non-U.S. institutions. Please contact the MSHA program prior to completing this requirement.
- Admission interviews by the HMSS Health Leadership Committee are required and are in addition to your application for admission. An interview provides the HMSS Health Leadership Committee an additional source of information and perspective about your potential fit for the University of Louisville.
- If candidate's primary language is not English, one of the following:
 - Test of English as a Foreign Language (TOEFL) exam with a minimum score of 90 (after conversion for test type), IELTS scores of at least 6.5 overall or Duolingo overall score of 105
 - ECFMG (Educational Commission for Foreign Medical Graduates) certification
 - Passing an advanced level Intensive English as a Second Language program
 - Degree from an accredited U.S. institution (requires provisional admission with evaluation of English language competency)

Evening Track Admissions

Students entering the MSHA evening track must have less than five years of working experience.

Online Track Admissions

Students entering the MSHA online track must have a minimum of five years working experience. Preference will be given to students with healthcare-related work experience. Click here to apply to the online MSHA program (<http://louisville.edu/online/programs/masters/online-master-of-science-in-health-administration/>).

Dual MPH in Health Policy/MSHA Admissions

Students must apply to and be accepted into both the MPH-HP and MSHA programs. *Each program will require a separate application and application fee.* [For more information about the dual program, please visit the program webpage.](#)

Dual MBA/MSHA Admissions

Students must apply to and be accepted into both the MBA and MSHA residential, full-time programs. *Each program will require a separate application and application fee.* [For more information about the dual program, please visit the program webpage \(https://louisville.edu/sphis/departments/hmss/academics-1/dual-mba-msha/\).](https://louisville.edu/sphis/departments/hmss/academics-1/dual-mba-msha/)

Application Deadlines

- Evening Track: Applications are accepted for Fall semester only.
 - March 1st for International applicants
 - July 1st for Domestic applicants
- To be competitive for available program scholarship opportunities, applicants should apply on or before March 1st for full consideration.
- Spring semester - Applications are not accepted.
- Summer semester - Applications are not accepted.
- Online Track: Applications are accepted on a rolling basis.
 - July 1st for Fall I Term
 - December 1st for Spring I Term

For information on the application process, please contact:

Pam Renner, MPA
Program Coordinator Senior
Department of Health Management and Systems Sciences
School of Public Health and Information Sciences
University of Louisville
485 E. Gray Street
Louisville, KY 40292
P. 502-852-2797
Email: Pamela.renner@louisville.edu

Program Requirements

Students must successfully complete the 57 credit hour curriculum, earn a grade of B or above in the MSHA Capstone Course, and have an overall 3.0 GPA in coursework in order to graduate from the program. Students in either track in the program must maintain a minimum 3.0 GPA in coursework.

All courses within the curriculum are required and there are no electives. Students within both the evening and online tracks take the same courses except for the MSHA Practicum. The practicum is designed to expose students new to the health management field to working conditions in healthcare organizations between their first and second year in the Program. MSHA evening track students will register in the Practicum for one (1) credit hour in three consecutive semesters beginning in Spring I for a total of three (3) credit hours. The MSHA online track substitutes the practicum with a Current Topics in Health Administration course that allows students to consider and discuss the current, real-time challenges facing the healthcare industry. Since the online track students have management experience, the practicum is not required.

Evening Track Requirements

Education Plan

The evening track is designed so that students can work as full-time employees and attend evening classes. The practicum courses, PHMS 686, PHMS 691, and PHMS 692, are designed to expose students new to the health management field to working conditions in healthcare organizations between their first and second year in the Program.

Coursework

Year 1		Hours
Fall		
PHMS 505	Governance and Management of Healthcare Organizations	3
PHMS 681	Population Health Quantitative Methods	3
PHMS 682	Population Health Information Management	3
PHMS 680	Health Management Leadership Seminar	1
PHMS 683	Healthcare Quality Management	3
	Hours	13
Spring		
PHMS 684	Project Management for Population Health	3
PHMS 620	Healthcare Strategic Management	3
PHMS 610	Health Policy and Analysis	3
PHMS 509	Health Finance and Financial Management	3
PHMS 686	MSHA Practicum Experience I	1
	Hours	13
Year 2		
Fall		
PHMS 520	Foundations of Public Health in Health Management	3

PHMS 687	Managerial Accounting for Healthcare Managers	3
PHMS 662	Health Economics	3
PHMS 685	Health Operations & Management Science	3
PHMS 688	Healthcare Marketing	2
PHMS 691	MSHA Practicum Experience II	1
Hours		15
Spring		
PHMS 689	Insurance & Alternative Payment Models	2
PHMS 635	Health Law and Ethics	3
PHMS 630	Human Resource Management in the Public Health Sector	3
PHMS 625	Population Health Management	3
PHMS 690	MSHA Capstone Course	3
PHMS 692	MSHA Practicum III	1
Hours		15
Minimum Total Hours		56

PHMS 635	Health Law and Ethics	3
Hours		11
Summer		
PHMS 694	Innovation and Entrepreneurship in Healthcare	3
PHMS 690	MSHA Capstone Course	3
Hours		6
Minimum Total Hours		56

PHMS 686 MSHA Practicum Experience I, PHMS 691 MSHA Practicum Experience II, and PHMS 692 MSHA Practicum III (three (3) credit hours total) – Evening Track only

Students develop an understanding and gain knowledge of the complex health care industry and the internal and external factors that influence decision-making in an assigned organization.

PHMS 694 Innovation and Entrepreneurship in Healthcare (three (3) credit hours) – Online Track only

Designed to enhance and improve student techniques and skills in entrepreneurship as applied to business venture development in healthcare markets. The focus is the student “being” an entrepreneur and acquiring the skills necessary to evaluate, plan, and develop business opportunities.

PHMS 690 MSHA Capstone Course (three (3) credit hours)

The primary objective of the course is to assist students in the transition from theory to practice and from learner to user of management knowledge and skills. The course will emphasize the integration and application of management theory in ‘real world’ context.

Online Track Requirements

Education Plan

The overall guiding philosophy for the online track in the MSHA curriculum design is that an online, primarily asynchronous learning basis will be used so that the mid-career executives can proceed working in their current jobs while in the Program. Courses will be developed in partnership with the Delphi Center for Online Learning adhering to the Quality Matters online course development standards. Courses will be offered in five eight-week terms within the Fall (F1, F2), Spring (S1, S2), and Summer terms to facilitate year-round student enrollments.

Coursework

Year 1		
Fall		
PHMS 505	Governance and Management of Healthcare Organizations	3
PHMS 680	Health Management Leadership Seminar	1
PHMS 681	Population Health Quantitative Methods	3
PHMS 682	Population Health Information Management	3
Hours		10
Spring		
PHMS 683	Healthcare Quality Management	3
PHMS 684	Project Management for Population Health	3
PHMS 509	Health Finance and Financial Management	3
PHMS 620	Healthcare Strategic Management	3
Hours		12
Summer		
PHMS 685	Health Operations & Management Science	3
PHMS 610	Health Policy and Analysis	3
Hours		6
Year 2		
Fall		
PHMS 520	Foundations of Public Health in Health Management	3
PHMS 687	Managerial Accounting for Healthcare Managers	3
PHMS 662	Health Economics	3
PHMS 688	Healthcare Marketing	2
Hours		11
Spring		
PHMS 625	Population Health Management	3
PHMS 689	Insurance & Alternative Payment Models	2
PHMS 630	Human Resource Management in the Public Health Sector	3

Dual MPH in Health Policy/MSHA Program Requirements

The Dual program is not available to MSHA Online track students. Only MSHA Evening track students may apply.

Year 1		
Fall		
PHMS 501	Introduction to Public Health Practice and Administration	3
PHPB 501	Introduction to Public Health Behavior	3
PHEP 501	Introduction to Epidemiology	3
PHST 500	Introduction to Biostatistics for Health Sciences I	3
PHMS 680	Health Management Leadership Seminar	1
Hours		13
Spring		
PHST 501	Introduction to Biostatistics for Health Sciences II	3
PHMS 610	Health Policy and Analysis	3
PHMS 530	Comparative Health Systems	3
PHPH 677	Public Health Practice Experience 1	1
PHMS 686	MSHA Practicum Experience I	1
Hours		11
Summer		
PHMS 684	Project Management for Population Health (ONLINE)	3
PHMS 620	Healthcare Strategic Management (ONLINE)	3
Hours		6
Year 2		
Fall		
PHMS 662	Health Economics	3

PHMS 505	Governance and Management of Healthcare Organizations	3
PHMS 681	Population Health Quantitative Methods	3
PHMS 682	Population Health Information Management	3
PHPH 678	Public Health Practice Experience 2	1
PHMS 691	MSHA Practicum Experience II	1
Hours		14
Spring		
PHMS 509	Health Finance and Financial Management	3
PHPB 611	Community-Centered Engagement and Assessment	3
PHPH 679	Public Health Practicum Experience 3	2
PHMS 692	MSHA Practicum III	1
PHPH 698	Public Health Integrative Learning Experience	2
Hours		11
Year 3		
Fall		
PHMS 683	Healthcare Quality Management	3
PHMS 685	Health Operations & Management Science	3
PHMS 687	Managerial Accounting for Healthcare Managers	3
PHMS 688	Healthcare Marketing	2
MPH-HP Elective		3
Hours		14
Spring		
PHMS 689	Insurance & Alternative Payment Models	2
PHMS 635	Health Law and Ethics	3
PHMS 630	Human Resource Management in the Public Health Sector	3
PHMS 625	Population Health Management	3
PHMS 690	MSHA Capstone Course	3
Hours		14
Minimum Total Hours		83

Dual MBA/MSHA Program Requirements

The Dual program is available for on campus MBA and evening track MSHA students only .

Year 1		
Fall		
MBA 601	Strategic Analysis	1.5
MBA 602	Decision Analysis	1.5
MBA 604	Economics I	1.5
MBA 607	Economics II	1.5
MBA 609	Financial Accounting	1.5
MBA 611	Managerial Accounting I	1.5
MBA 613	Managerial Accounting II	1.5
MBA 612	Finance I	1.5
MBA 608	Technology Management	1.5
MBA 641	Professional Development Module-Team Building	0.5
MBA 649	Professional Development Module-Inclusive Leadership	0.5
MBA 642	Communications	0.5
Hours		15
Spring		
MBA 616	Finance II	1.5
MBA 603	Organizational Behavior	1.5
MBA 617	Marketing I	1.5
MBA 619	Marketing II	1.5
MBA 621	Global Business	1.5
MBA 622	Project Management	1.5
MBA 606	Leadership	1.5
MBA 614	Operations Management	1.5
MBA 624	Strategic Management	1.5

MBA 695	PDM-Crisis Management	0.5
MBA 696	PDM-Negotiation	0.5
MBA 651	Introduction to Business Analytics	1.5
MBA 644	Professional Development Module-Business Etiquette	0.5
Hours		16.5
Summer		
MBA 623	Global Learning	1.5
MBA 699	MBA Internship	3
Hours		4.5
Year 2		
Fall		
PHMS 505	Governance and Management of Healthcare Organizations	3
PHMS 680	Health Management Leadership Seminar	1
PHMS 681	Population Health Quantitative Methods	3
PHMS 682	Population Health Information Management	3
PHMS 683	Healthcare Quality Management	3
Hours		13
Spring		
PHMS 509	Health Finance and Financial Management	3
PHMS 610	Health Policy and Analysis	3
PHMS 685	Health Operations & Management Science	3
PHMS 635	Health Law and Ethics	3
PHMS 686	MSHA Practicum Experience I	1
Hours		13
Year 3		
Fall		
PHMS 520	Foundations of Public Health in Health Management	3
PHMS 662	Health Economics	3
PHMS 688	Healthcare Marketing	2
PHMS 691	MSHA Practicum Experience II	1
Hours		9
Spring		
PHMS 625	Population Health Management	3
PHMS 630	Human Resource Management in the Public Health Sector	3
PHMS 689	Insurance & Alternative Payment Models	2
PHMS 690	MSHA Capstone Course	3
PHMS 692	MSHA Practicum III	1
Hours		12
Minimum Total Hours		83

Accreditation

The School of Public Health and Information Sciences is accredited by the Council on Education for Public Health (CEPH).

The University of Louisville is accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC).

The Master of Public Health with a concentration in Population Health Management program is currently undergoing the initial Commission on Accreditation of Healthcare Management Education (CAHME) accreditation approval process and is in "candidacy" status. Once the MSHA degree is approved, HMSS will inform CAHME of the curriculum change and the accreditation will transfer to the MSHA.

For more information, see the School's accreditation webpage (<http://louisville.edu/sphis/accreditation/>).

Health and Physical Education (MAT)

Master of Arts in Teaching Health and Physical Education

Unit: College of Education and Human Development (<https://louisville.edu/education/>) ([GE](#))

Department: Health and Sport Sciences (<https://louisville.edu/education/departments/hss/>)

Program Website (<https://louisville.edu/education/degrees/mat-hpe/>)

Academic Plan Code(s): HPEDMAT

Program Information

The Master of Arts in Health and Physical Education degree provides Kentucky certification in grades P-12.

The Departments of Teaching and Learning and Health and Sport Sciences are committed to the highest standards of professional preparation. Our programs have sought and received national accreditation from the Council for the Accreditation of Educator Preparation. Graduates of initial teacher certification programs at the University of Louisville begin their teaching careers secure in the knowledge that they have been prepared for the real world of classrooms through a rigorous teacher preparation program.

The degree offers school-based methods in the fall semester (August-December) in health and physical education for grades P-12. During the spring semester candidates complete 15 weeks of student teaching at both the elementary and secondary levels, a weekly seminar class and a reading and writing across the curriculum course. The program's schedule coincides with that of the public schools. Candidates progress through the program in a cohort group. The program is full-time and classes are offered only during the day.

Admission Requirements

Candidates who meet the following criteria may be eligible to apply to the Master of Arts in Teaching program. Candidates considering application to the MAT program should contact the MAT admissions counselor (teacher@louisville.edu (<http://louisville.edu/cgi-bin/uofl.mail?teacher>)) prior to applying for admission. UofL undergraduate students, with a major in Health and Human Performance - Physical Education Teacher Preparation, should direct questions to Dr. Carla Vidoni at carla.vidoni@louisville.edu (<http://louisville.edu/cgi-bin/uofl.mail?carla.vidoni>).

Admission is competitive. Candidates who meet minimum academic requirements are not guaranteed admission to the program.

- Graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>)/MAT Program. This should be completed three to four weeks prior to the application deadline.
- Praxis II Content Exam(s) (<http://louisville.edu/education/degrees/info/mat-hpe-praxis-ii/>)
- Bachelor's Degree from Accredited College or University (<http://louisville.edu/education/degrees/info/bachelors/>) with a Minimum 2.75 Grade Point Average (official transcripts (<http://louisville.edu/education/degrees/info/transcripts/>) required). If you are a current UofL student, you do not need to submit transcripts!
- Prerequisite Course Requirements (<http://louisville.edu/education/degrees/info/mat-hpe-prereq/>)
- Grade of C or higher in Oral Communication Course
- Grade of C or higher in ENGL 102

- TOEFL (<http://louisville.edu/education/degrees/info/toefl/>)/IELTS (<https://www.ielts.org/>)/Duolingo (<https://www.duolingo.com/>)
- Professional Writing Requirements (<https://louisville.edu/education/degrees/info/mat-mse-professional-statement/>)
- Three Letters of Recommendation (<https://louisville.app.box.com/s/w9jkkbu3cg10q7jtbwxo5rdkn2d1mjaa/>)
- Acceptable interview
- Signed Professional Code of Ethics/Technology User Agreement/Statement of Understanding of Admission Guidelines

Program Requirements

Code	Title	Hours
HSS 605	Teaching and Learning for Elementary Physical Education	4
HSS 606	Teaching and Learning for Secondary Physical Education	4
HSS 609	TEACHING AND LEARNING FOR HEALTH EDUCATION	4
Mid-point assessment ¹		
HSS 611	Seminar in Student Teaching in Health and Physical Education	3
HSS 612	Student Teaching: Elementary Physical Education ¹	4
HSS 613	Student Teaching: Middle/Secondary Physical Education ¹	4
EDTP 620	Reading and Writing Across the Curriculum	3
HSS 615	Student Teaching: Health Education	4
Minimum Total Hours		30

¹ These courses are the exit requirements for this program. Includes teacher certification in P-12 health and physical education

Mid-point Assessment: All content methods classes listed above passed with a cumulative 3.0 GPA; satisfactory dispositions assessment; Electronic documentation of 200 hours of diverse and approved field experiences; satisfactory performance on all Hallmark Assessment Tasks; Target performance or better on all rubrics.

Certification Assessment: Satisfactory dispositions assessment; passing scores on required PRAXIS exams; completion of degree requirements.

Degree Assessment: All program coursework with 3.0 cumulative GPA (no more than two "C's" in degree courses); 2.5 cumulative GPA in content course requirements; a "C" GPA or higher in each student teaching; satisfactory performance on all Hallmark Assessment Tasks; Target performance or better on all rubrics.

Degree Candidacy: Students not enrolled during the semester in which they intend to graduate must register for degree candidacy as outlined in the Graduate Catalog (<http://catalog.louisville.edu/archive/2023-2024/graduate/general-policies-procedures-requirements/>).

Praxis Disclaimer: Teacher certification requirements are subject to change. Before registering for certification test(s), please refer to the Education Professional Standards Board (EPSB) website at www.epsb.ky.gov (<http://www.epsb.ky.gov/>) or www.ets.org/praxis/ky (<https://www.ets.org/praxis/ky/>) for current requirements.

The Master of Arts in Teaching Health and Physical Education (HPEDMAT) program prepares students to meet the requirements for certification and/or licensure. If you plan to pursue professional licensure or certification you should first determine your state's criteria for examination and licensure to see how/if our program meets those requirements prior to enrollment. We recommend that you also contact your state's licensing board directly to verify that the requirements have not changed recently and to answer any questions especially those regarding additional requirements beyond the degree.

More information about certification or licensure is available at the following website: <https://louisville.edu/oapa/licensure-information> (<https://louisville.edu/oapa/licensure-information/>) (you may search by school or by the name of the program then click on 'View Details' to display the information).

For programs with an online option, more information about certification or licensure is available here: <https://louisville.edu/online/About-Us?tab=disclosures> (<https://louisville.edu/online/About-Us/?tab=disclosures>)

Healthcare Ethics (CERT)

This program was approved for students entering the university in the Summer 2023–Spring 2024 catalog year. For more information about catalog year, go to Catalog Year Information (<http://catalog.louisville.edu/undergraduate/university-wide-unit-specific-policies/catalog-year/>).

Graduate Certificate in Health Care Ethics

Unit: College of Arts and Sciences (<http://louisville.edu/artsandsciences/intro/>) (AS)

Department: Philosophy (<http://louisville.edu/philosophy/>)

Academic Plan Code(s): HCE_CGR

Program Information

Health care in the twenty-first century faces a series of ethical challenges arising from unprecedented advances in the medical sciences, combined with radical cultural and organizational change. The big business of health care can bring issues of social difference and injustice directly to our attention in the faces of individual patients.

The graduate certificate in Health Care Ethics is a 15 credit hour interdisciplinary graduate certificate is drawn primarily from coursework already offered for the MA and can be completed in one academic year. The certificate focuses on issues of social justice and the importance of race, gender, class, sexuality, religion, and culture on health and health care. The certificate is designed to serve mid-career professionals, faculty and staff on hospital ethics committees, and students in graduate and professional programs who want to enhance their credentials.

Admission Requirements

Students may be admitted to the graduate Health Care Ethics certificate program in any of the three ways:

- Admission to any graduate or professional degree program at UofL, plus a letter of interest with the name of a faculty member who is willing to endorse the student's readiness to pursue the certificate;
- A graduate or professional degree in a related field from an accredited institution of higher learning, plus a letter of interest with one professional reference; or

- Meeting the admissions requirements already established for the MA in Health Care Ethics.

Certificate Requirements

Code	Title	Hours
Select nine (9) credit hours from the list below:		9
BETH 621	Ethical Theory	
BETH 680	Foundations of Bioethics	
BETH 681	Current Controversies in Health Care Ethics	
BETH 682	Health and Social Justice	
BETH 683	Race, Medicine, and Health	
BETH 684	Clinical Ethics	
Select six (6) credit hours from the following:		6
ANTH 608	Social and Cultural Theory	
BETH 685	Health Care Ethics Internship	
BETH 601	Independent Study in Bioethics	
ECPY 663	Multicultural and Diversity Issues	
HIST 589/ WGST 532	History of American Sexualities - WR (http://catalog.louisville.edu/undergraduate/general-education-requirements/)	
LAW 826	Family Law	
LAW 906	Race and the Law	
LAW 923	Elder Law	
LAW 924	Sexuality and the Law	
LAW 944	Poverty, Health and the Law	
LAW 946	Introductions to Health Law	
LAW 947	Mental Health and the Law	
LAW 959	Genetics and the Law	
LAW 977	Animal Law	
LAW 978	Disability Law	
LAW 980	Medicine, Bioethics and the Law	
PAS 615	Theories of Race and Racism	
PHIL/PAS 616	African-American Philosophy	
PHIL 690	Philosophical Foundations of Diversity, Equity, and Inclusion	
PHPB 612/ COMM 652	Health Communication: Theory and Practice	
PHPB 630	Social and Structural Determinants of Health	
PHPB 635	Health Promotion Policy Development	
POLS 668/ WGST 656	Feminist Theory	
PSYC 656	Professional and Ethical Issues in Clinical Psychology	
SOC 675	Social Inequality & Stratification	
SOC 685	Race and Ethnicity	
SOC 740	Social Policy	
MSSW 602	Social Welfare Policy I	
MSSW 603	Diversity, Oppression, and Social Justice Practice	
MSSW 622	Social Welfare Policy II	
MSSW 626	Research Methodology and Design	
MSSW 633	Social Work and Human Sexuality	
MSSW 636	Death & Grief	

MSSW 684 Spirituality and Social Work

Minimum Total Hours **15**

Students may graduate with the Certificate after completing 9 credit hours of core Bioethics (BETH) courses plus six (6) credit hours of electives drawn from either i) additional core courses, or ii) the list of approved electives in the HCE MA program, or another elective approved by the director of graduate studies for the Philosophy department.

At least nine (9) credit hours must be at the 600 level. An average of a B, with no more than one C, will be required for graduation.

Healthcare Financial Management (CERT)

Graduate Certificate in Healthcare Financial Management

Unit: Public Health and Information Sciences (<https://louisville.edu/sphis/>) (GH)

Department: Health Management and Systems Sciences (<https://louisville.edu/sphis/departments/hmss/>)

Academic Plan Code(s) HCFMCGRO

The Graduate Certificate in Healthcare Financial Management provides students the foundational competencies of Healthcare Financial Management: health finance, health economics, managerial accounting in health organizations, and health insurance and alternative payment models.

Those interested in the possibility of pursuing the Master of Science in Health Administration (MSHA) may use this program as a stepping stone towards completion of the MSHA degree. University policy states that, "Upon approval of the graduate program, students may apply the coursework from no more than one certificate program towards a graduate degree program." (See the Graduate Catalog, General Policies, Procedures and Requirements (<https://catalog.louisville.edu/graduate/general-policies-procedures-requirements/#text>) - **Transfer of Credit.**)

This program is available in an online (<https://louisville.edu/online/programs/certificate-programs/online-graduate-certificate-in-healthcare-financial-management/>) format only.

Competencies

The successful student is able to demonstrate:

- Financial Skills
- Achievement Orientation
- Analytic Thinking
- Innovative Thinking
- Collaboration
- Communication Skills
- Performance Measurement
- Public Health Methods

Prior to graduation, students in the program will have demonstrated these competencies by completing the curriculum.

Admission Requirements

Applicants must have completed a baccalaureate degree from an accredited institution with a minimum of 2.75 GPA on a 4.0 scale.

Application requirements are submitted to the Graduate School and include:

- Graduate application (<http://louisville.edu/graduate/apply/>) submitted to the Graduate School
- Official transcripts indicating conferral of a bachelor's degree from an accredited institution.
- Curriculum vitae or resume
- One-page personal statement written by the applicant that is a clear, substantive description of his or her goals in public health and healthcare management.
- Application fee

For specific information about the degree program or the application process, students should contact Pam Renner (pamela.renner@louisville.edu).

Applications are accepted for the Fall and Spring semester. There are no Summer admissions. Preferred, to facilitate processing, application deadlines are August 1 for Fall starts and November 15 for Spring starts.

Certificate Requirements

12 credit hours of required coursework.

Code	Title	Hours
PHMS 509	Health Finance and Financial Management	3
PHMS 662	Health Economics	3
PHMS 687	Managerial Accounting for Healthcare Managers	3
PHMS 689	Insurance & Alternative Payment Models	3

Minimum Total Hours **12**

If a student chooses to pursue the Master of Science in Health Administration (MSHA) degree at any time after enrolling in or completing the Certificate program, then all coursework completed within the preceding three years with a grade of B or better may be applied towards the coursework for the MSHA degree.

MSHA graduates or currently enrolled MSHA students are not intended to be eligible to receive this certificate as the CAHME-accredited degree is appropriate and sufficient development and credentialing.

Formerly enrolled MSHA students may apply for certificate admission and utilize previously earned credits (grades of B or higher) toward certificate completion.

Accreditation

The School of Public Health and Information Sciences is accredited by the Council on Education for Public Health (CEPH).

The University of Louisville is accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC).

For more information, see the School of Public Health and Information Sciences accreditation webpage (<http://louisville.edu/sphis/accreditation/>).

Healthcare Management (CERT)

Graduate Certificate in Healthcare Management

Unit: Public Health and Information Sciences (<https://louisville.edu/sphis/>) (GH)

Department: Health Management and Systems Sciences (<https://louisville.edu/sphis/departments/hmss/>)

Academic Plan Code(s) HCMGCGRO

The Graduate Certificate in Healthcare Management provides students the foundational competencies of Healthcare Management: governance and management of healthcare organizations, healthcare strategic management, project management, health operations and management sciences, and healthcare marketing.

Those interested in the possibility of pursuing the Master of Science in Health Administration (MSHA) may use this program as a stepping stone towards completion of the MSHA degree. University policy states that, "Upon approval of the graduate program, students may apply the coursework from no more than one certificate program towards a graduate degree program." (See the Graduate Catalog, General Policies, Procedures and Requirements (<https://catalog.louisville.edu/graduate/general-policies-procedures-requirements/#text>) - **Transfer of Credit.**)

This program is available in an online (<https://louisville.edu/online/programs/certificate-programs/online-graduate-certificate-in-healthcare-management/online-graduate-certificate-in-healthcare-management/>) format only.

Competencies

The successful student is able to demonstrate:

- Communication Skills
- Innovative Thinking
- Interpersonal Understanding
- Self-development
- Analytic Thinking
- Collaboration
- Organizational Awareness
- Performance Measurement
- Strategic Orientation
- Change Leadership
- Project Management
- Team Leadership
- Information Seeking
- Information Technology Management
- Process Management and Organizational Design

Prior to graduation, students in the program will have demonstrated these competencies by completing the curriculum.

Admission Requirements

Applicants must have completed a baccalaureate degree from an accredited institution with a minimum of 2.75 GPA on a 4.0 scale.

Application requirements are submitted to the Graduate School and include:

- Graduate application (<http://louisville.edu/graduate/apply/>) submitted to the Graduate School

- Official transcripts indicating conferral of a bachelor's degree from an accredited institution.

- Curriculum vitae or resume

- One-page personal statement written by the applicant that is a clear, substantive description of his or her goals in public health and healthcare management.

- Application fee

For specific information about the degree program or the application process, students should contact Pam Renner (paemla.renner@louisville.edu).

Application Deadline

Applications are accepted for the Fall and Spring semester. There are no Summer admissions. Preferred, to facilitate processing, application deadlines are August 1 for Fall starts and November 15 for Spring starts.

Certificate Requirements

14 credit hours of required coursework.

Code	Title	Hours
PHMS 505	Governance and Management of Healthcare Organizations	3
PHMS 620	Healthcare Strategic Management	3
PHMS 684	Project Management for Population Health	3
PHMS 685	Health Operations & Management Science	3
PHMS 688	Healthcare Marketing	2
Minimum Total Hours		14

If a student chooses to pursue the Master of Science in Health Administration (MSHA) degree at any time after enrolling in or completing the Certificate program, then all coursework completed within the preceding three years with a grade of B or better may be applied towards the coursework for the MSHA degree.

MSHA graduates or currently enrolled MSHA students are not intended to be eligible to receive this certificate as the CAHME-accredited degree is appropriate and sufficient development and credentialing.

Formerly enrolled MSHA students may apply for certificate admission and utilize previously earned credits (grades of B or higher) toward certificate completion.

Accreditation

The School of Public Health and Information Sciences is accredited by the Council on Education for Public Health (CEPH).

The University of Louisville is accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC).

For more information, see the School of Public Health and Information Sciences accreditation webpage (<http://louisville.edu/sphis/accreditation/>).

Healthcare Quality and Project Management (CERT)

Graduate Certificate in Healthcare Quality and Project Management

Unit: Public Health and Information Sciences (<https://louisville.edu/sphis/>) (GH)

Department: Health Management and Systems Sciences (<https://louisville.edu/sphis/departments/hmss/>)

Academic Plan Code(s) HQPMCGRO

The Graduate Certificate in Healthcare Quality and Project Management provides students the foundational competencies of Healthcare Quality and Project Management: healthcare strategic management, healthcare quantitative analysis, healthcare quality, project management, and health operations and management sciences.

Those interested in the possibility of pursuing the Master of Science in Health Administration (MSHA) may use this program as a stepping stone towards completion of the MSHA degree. University policy states that, "Upon approval of the graduate program, students may apply the coursework from no more than one certificate program towards a graduate degree program." (See the Graduate Catalog, General Policies, Procedures and Requirements (<https://catalog.louisville.edu/graduate/general-policies-procedures-requirements/#text>) - **Transfer of Credit.**)

This program is available in an online (<https://louisville.edu/online/programs/certificate-programs/online-graduate-certificate-in-healthcare-quality-and-project-management/>) format only.

Competencies

The successful student is able to demonstrate:

- Analytic Thinking
- Collaboration
- Communication Skills
- Organizational Awareness
- Performance Measurement
- Self-development
- Strategic Orientation
- Change Leadership
- Innovative Thinking
- Accountability
- Process Management and Organizational Design
- Talent Development
- Team Leadership
- Project Management
- Information Seeking
- Information Technology Management

Prior to graduation, students in the program will have demonstrated these competencies by completing the curriculum.

Admission Requirements

Applicants must have completed a baccalaureate degree from an accredited institution with a minimum of 2.75 GPA on a 4.0 scale.

Application requirements are submitted to the Graduate School and include:

- Graduate application (<http://louisville.edu/graduate/apply/>) submitted to the Graduate School
- Official transcripts indicating conferral of a bachelor's degree from an accredited institution.
- Curriculum vitae or resume
- One-page personal statement written by the applicant that is a clear, substantive description of his or her goals in public health and healthcare management.
- Application fee

For specific information about the degree program or the application process, students should contact Pam Renner (pamela.renner@louisville.edu).

Application Deadline

Applications are accepted for the Fall and Spring semester. There are no Summer admissions. Preferred, to facilitate processing, application deadlines are August 1 for Fall starts and November 15 for Spring starts.

Certificate Requirements

15 credit hours of required coursework.

Code	Title	Hours
PHMS 620	Healthcare Strategic Management	3
PHMS 681	Population Health Quantitative Methods	3
PHMS 683	Healthcare Quality Management	3
PHMS 684	Project Management for Population Health	3
PHMS 685	Health Operations & Management Science	3
Minimum Total Hours		15

If a student chooses to pursue the Master of Science in Health Administration (MSHA) degree at any time after enrolling in or completing the Certificate program, then all coursework completed within the preceding three years with a grade of B or better may be applied towards the coursework for the MSHA degree.

MSHA graduates or currently enrolled MSHA students are not intended to be eligible to receive this certificate as the CAHME-accredited degree is appropriate and sufficient development and credentialing.

Formerly enrolled MSHA students may apply for certificate admission and utilize previously earned credits (grades of B or higher) toward certificate completion.

Accreditation

The School of Public Health and Information Sciences is accredited by the Council on Education for Public Health (CEPH).

The University of Louisville is accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC).

For more information, see the School of Public Health and Information Sciences accreditation webpage (<http://louisville.edu/sphis/accreditation/>).

Healthcare Systems Engineering (CERT)

This program was approved for students entering the university in the Summer 2023–Spring 2024 catalog year. For more information about catalog year, go to Catalog Year Information (<http://catalog.louisville.edu/archive/2023-2024/undergraduate/university-wide-unit-specific-policies/catalog-year/>).

Graduate Certificate in Healthcare Systems Engineering

Unit: Speed School of Engineering (<https://engineering.louisville.edu/>) (GS)

Department: Industrial Engineering (<https://engineering.louisville.edu/academics/departments/industrial/>)

Academic Plan Code(s): HSENCGR, HSENCRO

Program Information

This program can be completed in a traditional classroom format or entirely online.

The graduate certificate in Healthcare Systems Engineering will provide a focused study of industrial engineering skills and methods as applied to healthcare delivery systems and processes. Students who complete the certificate program will acquire skills in healthcare engineering, quality of care, patient safety, health IT, clinician support, healthcare analytics, and data visualization. The certificate program offers the field of industrial engineering a focused program of study in the healthcare domain while also providing healthcare professionals an opportunity to acquire industrial engineering skills as applied to health care delivery and process improvement.

This is a nine credit hour certificate program.

Applicants are recommended to have completed a probability and statistics course. Students who do not have the expected background may be required to take a refresher course. Applicants should have an undergraduate degree in any field with a GPA of 2.75 or above (on a 4.00 scale). Only a transcript showing the undergraduate degree awarded is required for the application. Letters of reference or GRE scores will not be required.

Students whose native language is not English or whose degree is from a non-US accredited institution are required to demonstrate proficiency in the English language as specified by the admission policies of the Speed School of Engineering.

Certificate Requirements

A total of nine (9) credit hours are required.

Code	Title	Hours
IE 682	Quality of Care and Patient Safety	3
IE 684	Health IT and Clinician Support	3
IE 662	Predictive Analytics for Decision Making I	3
Minimum Total Hours		9

Health Data Analytics (MS)

Master of Science in Health Data Analytics

Unit: School of Public Health and Information Sciences (<https://louisville.edu/sphis/>) (GH)

Department: Health Management and Systems Sciences (<https://louisville.edu/sphis/departments/health-management-systems-sciences/>)

Program Webpage (<https://louisville.edu/sphis/departments/health-management-systems-sciences/academics-1/ms-in-health-data-analytics/>)

Academic Plan Code: HEDAMS_0

Program Information

This program is completed entirely online (<https://louisville.edu/online/programs/masters/master-of-science-in-health-data-analytics/>).

The Master of Science in Health Data Analytics program will educate and train public health graduate students in data analytics using the most recently developed techniques for Big Data, data mining, and algorithmic analysis.

Competencies

The MS in Health Data Analytics Program focuses on four key competencies:

- Public health knowledge
- Data warehouse development for health data analytics
- Health data analytics
- Translation of data analytics into actionable knowledge

Curriculum

The curriculum has four main components:

- Public health foundations
- Principles of data warehouse construction (i.e., creating Big Data from little data)
- Advanced analytics (i.e., Big Data analytics, data mining)
- Application of program competencies towards solving real-world problems in the MSHDA Capstone project.

Faculty Advisor

On matriculation, each student is assigned a faculty advisor and is requested to meet at least twice each semester with his or her advisor. The faculty advisor works with the student to develop a program of study and serves as academic mentor and counselor on career and employment opportunities, professional development, and opportunities beyond graduate school.

Admission Requirements

The MS program is available to students who have completed an undergraduate degree in biostatistics, statistics, mathematics, computer science or a related discipline and have competency in college-level calculus, statistics, regression analysis, as evidenced by transcripts from postsecondary institutions attended by the applicant.

This program is available to both part-time and full-time students; however, the part-time student must be cognizant that courses are offered on an alternating basis, usually every two years. Part-time students must pursue the recommended course sequence as courses are available.

The following are additional requirements for admission:

- Recommended minimum GPA of 3.0 on a 4.0 scale
- Graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) submitted to the Graduate School
- Non-refundable application fee
- At least two letters of recommendation written within past twelve months, submitted via the Graduate School (gradadm@louisville.edu)
- Students are asked to submit a current curriculum vitae (CV)
- All postsecondary transcripts (requires foreign credential evaluation if not from accredited U.S. institution)
- Statement of goals (i.e., general research interests)
- Admission interviews by the HMSS Health Leadership Committee are required and are in addition to your application for admission. An interview provides the HMSS Health Leadership Committee an additional source of information and perspective about your potential fit for the University of Louisville.
- If candidate's primary language is not English, one of the following:
 - Test of English as a Foreign Language (TOEFL) exam with a minimum score of 90 (after conversion for test type)
 - Passing an advanced level Intensive English as a Second Language program.
 - Degree from an accredited U.S. institution (requires provisional admission with evaluation of English language competency)

Application Deadlines

Fall semester – Applications are accepted on a rolling basis. Applications preferred by July 1st.

- Domestic student are encouraged to apply no later than 30 days prior to the start of the fall semester.
- International students encouraged to apply no later than 120 days prior to the start of the fall semester.

Spring semester – Applications are accepted on a rolling basis. Applications preferred by November 1st.

- Domestic student are encouraged to apply no later than 30 days prior to the start of the fall semester.
- International students encouraged to apply no later than 120 days prior to the start of the fall semester.

Summer semester – Applications are not accepted.

For information on the application process, please contact:

Pam Renner
Program Coordinator Senior
Department of Health Management and Systems Sciences
School of Public Health and Information Sciences
University of Louisville
485 E. Gray Street
Louisville, KY 40292
P. 502-852-2797
Email: Pamela.renner@louisville.edu

Program of Study

The MS in Health Data Analytics is designed to train students in fundamentals of public health, data warehouse/database creation and management, compliance with Federal codes and regulations regarding PHI, and advanced analytics skills. As a major component of this degree, students are required to complete a discovery-based project that is a thorough analysis of a selected complex data set to reveal patterns and relationships. The capstone project requires the rigorous application of

multivariate techniques such as regression model building and other analyses for single and multiple groups. Students must submit a written report of their findings and write a detailed synthesis and discussion on the choice of the methodologies used in the analyses, and the meaning of the analyses.

Program Requirements

There are 33 total credit hours in this curriculum, broken down as follows:

- 27 credit hours of required coursework
- Three (3) credit hours of capstone project
- Three (3) credit hours of project management (practicum/internship)

To graduate, students must successfully complete the 33 credit hour curriculum, including the Capstone course and project, and have an overall 3.0 GPA in program coursework. All courses within the curriculum are required and there are no electives.

Coursework

Year 1

Fall		Hours
PHPH 523	Public Health in the United States ¹	[3]
PHST 620	Introduction to Statistical Computing	3
PHST 680	Biostatistical Methods I	3
PHMS 644	Biomedical Foundations for Health Analytics	3
Hours		9

Spring

PHMS 670	Statistical Data Management	3
PHMS 641	Data Mining I	3
PHMS 638	Data Security & Electronic Health Records	3
PHMS 639	Health Data Analytics Practicum	3
Hours		12

Year 2

Fall		Hours
PHMS 671	Statistical Analysis for Population Health	3
PHMS 643	Data Management in Health Service Research	3
PHMS 642	Data Mining II	3
PHMS 637	MSHDA Capstone Course	3
Hours		12
Minimum Total Hours		33

¹ PHPH 523 fulfills the accreditation requirement that all graduates from the School of Public Health and Information Science receive foundational instruction in public health. The three (3) credit hours for PHPH 523 do not accrue toward the 33 credit hours required for the Master of Science in Health Data Analytics degree completion. Students with a prior degree and/or coursework from a CEPH accredited school or program of public health may be relieved of this requirement, per approval of the Associate Dean for Academic Affairs.

Health Data Analytics Practicum (PHMS 639, 1-3 s.h.)

The practicum experience places the student in a non-academic environment where health data analytics are used for decision support and strategic planning. The deliverables will include 1) a written report to the instructor on the experience gained during the practicum, and 2) an outline on the activities specific to the site where the practicum is completed. The practicum should include no less than 200 contact hours at the practicum site. The manager at the practicum site will be asked to complete an evaluation of the student.

MSHDA Capstone Course (PHMS 637, 3 s.h.)

This course is designed to provide final preparation of the student to sit for the Certified Health Data Analyst Examination offered by the Commission on Accreditation for Health Informatics and Information Management (CAHIIM) and the American Health Information Management Association (AHIMA). The certification with the MSHDA degree provides prospective employers evidence of the student's ability to perform professional level health data analytics. This course is also intended to provide a cumulative, rigorous, and discovery-based project.

Accreditation

The School of Public Health and Information Sciences is accredited by the Council on Education for Public Health (CEPH).

The University of Louisville is accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC).

For more information, see the School's accreditation webpage (<https://louisville.edu/sphis/accreditation/>).

Health Professions Education (CERT)

Graduate Certificate in Health Professions Education

Unit: College of Education and Human Development (<https://louisville.edu/education/>) and School of Medicine (<https://louisville.edu/medicine/>)

Program Webpage (<https://louisville.edu/education/degrees/gc-hpe/>)

Academic Plan Code(s): HPEDCHP, HLTHCGRO

Program Information

This program can be completed in a traditional classroom format or entirely online (<https://louisville.edu/online/programs/certificate-programs/online-certificate-in-health-professions-education/>).

The certificate in Health Professions Education is offered through a partnership between the College of Education and Human Development and the School of Medicine. The program is designed specifically for faculty, future faculty, residents, and graduate students in the health sciences, including medicine, nursing, dentistry, public health, clinical and allied health professions. The program includes four graduate-level credit courses (twelve [12] total credit hours) leading to an academic credential.

All courses are part of the College of Education and Human Development graduate curriculum and may be applied to other degree programs, such as the master's degree in Health Professions Education. Each course is focused on education in the clinical learning environment. For example, instructional techniques include working not only in the classroom but also in clinical settings. Class projects can be designed for both didactic and clinical education.

Face-to-face courses follow the Belknap Campus semester schedule but meet on the Health Sciences Campus. Courses are taught in the evening and are web-enhanced, with approximately one-third of weekly work assignments completed online.

Program Purpose: To promote effective clinical teaching and student instruction in various health sciences educational settings and develop skills in designing education research for presentation and publication.

Admission Requirements

The HPE Admissions Committee requires the following materials:

- Complete the online application to the Graduate School (<http://louisville.edu/graduate/apply/>).
- Transcripts of all undergraduate and graduate work. Unconditional admission requires a minimum cumulative grade point average (GPA) of 3.0 for all coursework taken AND a minimum GPA of 2.75 for coursework at the undergraduate degree-granting institution.
- For applicants without a terminal degree (e.g., MD, DDS, PhD), GRE scores must be submitted.
Please note: when submitting GRE scores through ETS, have scores sent using the general University of Louisville code, 1838.
- All applicants for whom English is a second language must also submit official TOEFL scores of 79 or higher on the internet-based test, 213 or higher on the computer-based test. English proficiency can also be met by submitting official IELTS scores of at least 6.5 overall band score from the academic module exam or official Duolingo overall score of 105. Students holding a bachelor's or advanced degree from an accredited institution in the United States may be exempt from this requirement.
- Two letters of recommendation. If you have studied at a college or university in the last five years, the admissions committee prefers to see at least one letter from a faculty member. Other references can include work supervisors. Personal references (e.g., family, friends) are not accepted.
- Goal Statement Sheet [PDF] (<http://louisville.edu/education/degrees/files/goal-statement2012.pdf>). The Admissions Committee evaluates applications based on how an applicant's goals, professional experiences, and commitment to education are an appropriate fit with this program.
- Current Resume

Admission is competitive. Meeting the GPA minimum does not guarantee acceptance into the program.

Program Requirements

The current course sequence is as follows:

Code	Title	Hours
LEAD 665	Foundations of Health Professions Education	3
LEAD 675	Teaching and Learning in Health Professions Education	3
LEAD 676	Instructional Strategies in Health Professions Education	3
LEAD 650	Evaluation & Assessment in Health Professions Education	3
Minimum Total Hours		12

Health Professions Education (MS)

Master of Science in Health Professions Education

Unit: College of Education and Human Development (<https://louisville.edu/education/>) (GE)

Department: Educational Leadership, Evaluation and Organizational Development (<https://louisville.edu/education/departments/eleod/>)

Program Webpage (<https://louisville.edu/education/degrees/ms-hpe/>)

Academic Plan Code(s): HPEDMS, MPEDMS_0

Program Information

This program can be completed in a traditional classroom format or entirely online (<https://louisville.edu/online/programs/masters/online-master-of-science-in-health-professions-education/>).

The Master of Science in Health Professions Education program at the University of Louisville is designed to prepare faculty and graduate students of dentistry, medicine, nursing, and other allied health programs who plan to teach in their respective fields. Potential candidates for the degree are faculty members, graduate students, and sub-specialty fellows in training intending to enter academic healthcare.

Degree Summary

Code	Title	Hours
HPE Core		18
Education Core		6
Electives		6
Exit Requirement/Practicum		3
Minimum Total Hours		33

Admission Requirements

The required credentials for admission include:

- Admission to Graduate School
- a. Complete the online application to the Graduate School. (<https://louisville.edu/graduate/futurestudents/apply-materials/application/>)
- b. Unconditional admission requires a minimum cumulative grade point average (GPA) of 2.5 for all coursework taken at the undergraduate and/or graduate degree-granting institution; or a terminal professional degree (e.g., MD, DO, DMD, DNP, PhD, EdD).
 - Applicants with a GPA less than 2.5 at the undergraduate/graduate level may inquire about conditional admission
- c. Only official degree-bearing transcripts must be submitted by the applicant using appropriate methods (e.g., Parchment or National Clearinghouse) or be on file in the Office of Faculty Affairs (for applicants internal to UofL) when applying. Applicants should submit their most senior degree earned or that they are in the progress of earning.
- d. International applicants with transcripts that are not in English, in addition to submitting official copies of native language records, must also submit a notarized, verbatim translation in English prepared by an appropriate university or government official. The records must show both the degree granted and all coursework taken during the course of study. Applicants who are submitting transcripts from outside the United States must verify their records by submitting them to one of the following organizations: World Education Services (WES), Educational Credential Evaluators (ECE), and other NACES approved evaluators found here <https://www.naces.org/members> (<https://www.naces.org/members/>).
- e. Students for whom English is not their primary language must show English language proficiency by successfully completing one of the following:
 - International English Language Testing System (IELTS) examination (<https://www.ielts.org/>) – minimum score: 6.5
 - Test of English as a Foreign Language (TOEFL) examination (<https://www.ets.org/toefl.html>) – minimum scores: 550 on the paper-based TOEFL, 213 on the computer-based TOEFL or 80 or higher on the internet-based TOEFL

- Duolingo English Test with Subscores (https://englishtest.duolingo.com/applicants/?utm_source=google&utm_medium=search&utm_campaign=EnglishTier1Campaign&gclid=CjwKCAiAyPyQBhB6EiwAFUuakrtGPRRW-6-LWFstq8XBfUXEZPQde1_PQmLRqJH7n01zpxwQcxv7MxoCRc0QAvD_BwE) – minimum score of 105 and exam must have been taken after January 1, 2020
- Note: International students who have earned a degree from an accredited college or university in the U.S. are not required to complete the TOEFL, IELTS, or Duolingo.

- f. Current Resume/CV
- g. Personal goal statement written by the applicant that is a clear, substantive description of your goals within health professions education (approx. 1-2 pages)
- h. Two letters of recommendation

Degree Requirements

Code	Title	Hours
HPE Core ¹		
LEAD 607	Principles of Educational Leadership	3
LEAD 650	Evaluation & Assessment in Health Professions Education	3
LEAD 665	Foundations of Health Professions Education	3
LEAD 675	Teaching and Learning in Health Professions Education	3
LEAD 676	Instructional Strategies in Health Professions Education	3
LEAD 685	Evidence-based Practice in HPE	3
Education Core		
LEAD 666	Program Development & Assessment in Higher Education	3
or LEAD 600	Introduction to Research Methods and Statistics	
LEAD 694	Diversity in Higher Education	3
HPE Core + Ed Core		
Electives*	Choose 6 hours from approved list	6
Exit Requirement		
LEAD 697	Organizational Improvement in Higher Education	3
Minimum Total Hours		33

¹ Mid-Point Assessment: Students must maintain a 3.0 GPA (no grade less than a "B") in HPE specific courses to remain in the program.

Code	Title	Hours
Approved Electives		
LEAD 600	Introduction to Research Methods and Statistics	3
LEAD 601	Applied Statistics	3
LEAD 602	Survey Research and Attitude Measurement	3
LEAD 660	Diversity and Inclusion	3
LEAD 661	Adult & Organizational Learning	3
LEAD 668	Academic Advising	3
LEAD 670	Instructional Strategies	3
LEAD 678	American College and University	3
LEAD 681	The Philosophy of Higher Education	3
LEAD 683	College Teaching	3
LEAD 687	Education Policy & Equity	3

Exit Assessment: A minimum of 33 credit hours with an overall grade point average of 3.0, and no more than two grades of C.

Higher Education Administration (MA)

Master of Arts in Higher Education Administration (HED MA)

Unit: College of Education and Human Development (<http://louisville.edu/education/>) (GE)

Department: Educational Leadership, Evaluation, and Organizational Development (<http://louisville.edu/education/departments/elfh/>)

Program Webpage (<https://louisville.edu/education/degrees/ma-he/>)

Academic Plan Code(s): See Concentration Requirements tab.

Program Information

This program can be completed in a traditional classroom format or entirely online (<https://louisville.edu/online/programs/masters/master-of-arts-in-higher-education/>).

The Master's in Higher Education Administration Degree program at the University of Louisville is designed to provide individuals with the knowledge and skills necessary to pursue a career in university and college settings. Our nationally recognized faculty apply their expertise as scholars and practitioners to connect classroom knowledge directly to real-world experiences.

Degree Summary

Code	Title	Hours
Practice Core		9-12
Advanced Core		9
Electives and/or Specialization (9 credits for SPAD; 6 credits for HEA; 6-9 9 credits for FTX)		
Exit Requirement		3
Minimum Total Hours		30

Admission Requirements

- **Graduate School Application:** Complete the online application to the Graduate School (<http://louisville.edu/graduate/apply/>).
- **Official transcripts of all undergraduate and graduate work.** Unconditional admission requires a minimum degree grade point average (GPA) of 2.5. Applicants who have attended a college or university outside of the United States are also required to submit an evaluation of their transcript through either WES (World Education Services) (<http://wes.org/>) or ECE (Educational Credential Evaluators) (<http://ece.org/>). Please note that transcript evaluations can sometimes take several weeks.

Please have transcripts sent to:

Graduate School
University of Louisville
Louisville, KY 40292

If transcripts are sent electronically,
please have them sent to the following e-mail:
gradadm@louisville.edu

- **Two letters of recommendation**
- **Resume**
- **Professional goals statement**

Students may be recommended for conditional admission upon recommendation of the program faculty.

Meeting the GPA and requirement does not guarantee admission to the program.

Department committee reviews application materials and makes recommendation to Graduate School.

Degree Requirements: Higher Education Administration

Academic Plan Code(s): HED_MA_ADM, HED_MA_ADO

This program can be completed in a traditional classroom format or entirely online (<https://louisville.edu/online/programs/masters/master-of-arts-in-higher-education/>).

Code	Title	Hours
Practice Core		12
LEAD 600	Introduction to Research Methods and Statistics or LEAD 666 Program Development & Assessment in Higher Education	
LEAD 682	The Organization and Administration of Higher Educational Institutions	
LEAD 693	College Students in the United States	
LEAD 690	Professional Project in Higher Education	
Advanced Core		9
LEAD 680	Legal Issues in Postsecondary Education	
LEAD 684	Educational Resource Management in Postsecondary Education	
LEAD 694	Diversity in Higher Education	
Electives		6
Exit Requirement ¹		
LEAD 697	Organizational Improvement in Higher Education	3
Minimum Total Hours		30

¹ Exit requirement varies depending on concentration.

Degree Requirements—Fort Knox only

Academic Plan Code(s): HED_MA_FTX

Code	Title	Hours
Practice Core		
LEAD 666	Program Development & Assessment in Higher Education	3
LEAD 682	The Organization and Administration of Higher Educational Institutions	3
LEAD 690	Professional Project in Higher Education	3
Advanced Core		
LEAD 694	Diversity in Higher Education	3
Choose 2 of the following:		6
LEAD 680	Legal Issues in Postsecondary Education	
LEAD 684	Educational Resource Management in Postsecondary Education	
LEAD 693	College Students in the United States	
Specialization		

LEAD 670	Instructional Strategies	3
LEAD 683	College Teaching	3
LEAD 688	Supervised Experience in Higher Education	3
Exit Requirement ¹		
LEAD 697	Organizational Improvement in Higher Education	3
Minimum Total Hours		30

¹ Exit requirement varies depending on concentration.

NOTE: For the optional concentration in Sport Administration, please see the Concentration Requirements tab.

Concentration Requirements

Concentration in Sport Administration

Academic Plan Code(s): HED_MA_SAD, HED_MA_SAO

Code	Title	Hours
Practice Core		
LEAD 600 or LEAD 666	Introduction to Research Methods and Statistics Program Development & Assessment in Higher Education	3
LEAD 682	The Organization and Administration of Higher Educational Institutions	3
LEAD 693	College Students in the United States	3
Advanced Core		
LEAD 680	Legal Issues in Postsecondary Education	3
LEAD 684	Educational Resource Management in Postsecondary Education	3
LEAD 694	Diversity in Higher Education	3
Specialization		
SPAD 680	Athletics and Higher Education	3
SPAD 625	Sport Management and Leadership	3
Elective (approved by advisor)		3
Exit Requirement		
SPAD 692	Internship in Sport Administration	3
Minimum Total Hours		30

History (MA)

Master of Arts in History

Unit: College of Arts and Sciences (<http://louisville.edu/artsandsciences/intro/>) (GA)

Department: History (<http://louisville.edu/history/>)

Program Website (<http://louisville.edu/history/graduate/>)

Academic Plan Code(s): HISTMA, HISTMA_ACC

Program Information

The Master of Arts program in History provides advanced training in historical theory, investigation, and writing. Among other things, it prepares students for further graduate studies in history, employment

in educational institutions or in public history, and careers in law and government.

The varied specialties of our faculty, combined with the structure of the program, allow our students to acquire a worldwide vision of history. In addition to completing a set of core courses, all students are required to select a Major Field in Americas, World, or Public History.

Accelerated BA/MA in History Program

Undergraduate History majors who are already thinking about pursuing an MA in history can speed up the process by applying some of their undergraduate credit hours toward a master's degree. Students take three graduate-level courses/nine (9) credit hours while still an undergraduate, and then have those credits apply both toward the undergraduate degree and towards an eventual master's degree from the University of Louisville.

Interested students should:

- Students must apply for admission to the program no later than the end of their junior year to be eligible enroll in graduate coursework in their final year of the program. Interested students also should complete an application for graduate admission (<https://louisville.edu/graduate/futurestudents/apply-materials/application/>) to the History department's Master of Arts program (including GRE scores, transcripts, two letters of recommendation, and a statement of purpose).
- Have a minimum overall grade point average (GPA) of 3.35, a history GPA of 3.35, and meet all other requirements for admission to the History Department's Master of Arts program (including at least 21 credit hours of history courses).

Students must retain a 3.35 GPA in history during their senior year to remain in the program. Once admitted to the accelerated BA/MA program and starting the graduate work, students are expected to maintain a full graduate load of nine (9) credit hours.

Admission Requirements

The History Department conducts a holistic review of all credentials presented by the applicant in order to identify each applicant's academic abilities and potential for success in our graduate program; no single factor alone leads to either accepting or excluding an applicant.

Applicants to the MA program in History should have:

- A minimum undergraduate GPA of 3.0 on a 4.0 point scale (a GPA based on a 3.0 scale will be converted to a 4.0 scale)
- 21 undergraduate credit hours in history, with a minimum GPA of 3.0.

Students with an undergraduate GPA of between 2.5 and 2.99 may be accepted conditionally into the program at the discretion of the Director of Graduate Studies, provided they meet all other requirements for admission. Conditional admission requires that the student maintain a GPA of 3.0 in the first nine (9) credit hours of graduate coursework.

Students with fewer than 21 undergraduate credit hours in history will be required to take additional history courses to bring their total undergraduate hours up to the required number.

Admission Materials

Applicants must submit the following materials to the University of Louisville Graduate School:

- A completed graduate application (<https://louisville.edu/graduate/futurestudents/apply-materials/application/>) form and application fee
- Official transcripts, verifying the receipt of a BA from an accredited institution
- At least two letters of recommendation from individuals familiar with the applicant's academic and/or professional capabilities and potential
- A writing sample of no more than 15 double-spaced pages
- A *curriculum vitae* highlighting past awards, scholarships, leadership and work experiences, or internships
- A statement of purpose, not to exceed 500 words, outlining in reasonably specific terms, the applicant's academic and career objectives and how they can be advanced through graduate work in our program. The statement should also indicate the applicant's intended area(s) of interest, preparation for this field of study, and, if possible, the departmental faculty with whom the applicant wishes to study.

Deadlines:

Applications for Fall semester: February 15 *

Applications for Spring semester: December 1

* February 15 is the deadline for all students who want to be considered for available fellowships, assistantships, and internships. Students who do not intend to apply for these funding sources may submit their applications until May 15. For a list of the graduate assistantships, scholarships, fellowships, and internships, see louisville.edu/history/graduate-studies/funding (<http://louisville.edu/history/graduate-studies/funding/>) Applications for these awards are normally due on February 15.

Accelerated BA/MA

This program allows a history major to use a maximum of nine (9) credit hours of graduate coursework towards both a BA and an MA. After completing the undergraduate program and receiving a BA, the student will enter the graduate program and complete the remaining requirements for the MA.

To be considered for admission to the accelerated program, students must:

- Have a minimum overall grade point average (GPA) of 3.0 and a minimum GPA of 3.35 in history
- Students must apply for admission to the program no later than the end of their junior year to be eligible to enroll in graduate coursework in their final year of the program. Complete a graduate application for admission (<https://louisville.edu/graduate/futurestudents/apply-materials/application/>) to the graduate program.
- At least two recommendations.

In addition, students must retain a GPA of 3.35 in history (have a B+ in graduate history courses) during their senior year to remain in the program.

In general, students will work with Associate or Full Professors as their academic advisors. To work with an Assistant Professor, students will

have to receive approval from the faculty member and the Director of Graduate Studies.

Program Requirements

All graduate students are required to take the Core Courses (15 credit hours in total) along with approved Major Field courses.

Code	Title	Hours
Core Courses		15
HIST 605	Research Methods and Materials	
HIST 608	Practicum in Public History	
HIST 612	Studies in American History (Digital History)	
	or HIST 607 Oral History	
HIST 697	Introduction to Public History	
HIST 603	Thesis	
Major Field Courses		15-18
Thesis option students take 15 credit hours; non-thesis/exam option students take 18 credit hours (see below).		
Minimum Total Hours		30-33

All History M.A. students choose one of the following three Major Fields and take 15 credit hours (if they are working toward the thesis option) or 18 credit hours (if they are working toward the exam option):

- **Americas:** Five (thesis option) or six (exam option) content courses with at least one course on Latin American/Borderlands history.
- **World:** Five (thesis option) or six (exam option) content courses on the history of regions, peoples, and cultures primarily outside of the Western hemisphere.
- **Public History:** Two public history methods courses, two (thesis option) or three (exam option) content courses, and one additional HIST 608 Practicum in Public History course.

MA students in the History Department normally take nine (9) credit hours of coursework per semester (three courses). With the approval of the Director of Graduate Studies, a student may take up to 12 credit hours (four courses) in a semester. Students may take up to six (6) credit hours HIST 601 Directed Study and up to six (6) credit hours of graduate courses outside of the History Department. No pass-fail courses may be applied to an MA in History.

If a student's cumulative GPA falls below 3.0, he or she is subject to academic probation and may be dismissed from the MA program.

For MA-level work in certain areas, knowledge of foreign languages or knowledge of other specialized research tools may be required.

Students will be allowed to transfer up to six (6) credit hours of appropriate coursework from outside the University of Louisville. Up to nine (9) credit hours of non-degree graduate coursework in History may be transferred into the MA program.

Students may choose to complete the MA by thesis or by exam.

Thesis Option

Completion of 30 credit hours of coursework, 15 credit hours in the required Core Courses and 15 credit hours in the student's chosen Major Field. The thesis must be in the Major Field. Following an oral defense, it must be approved by a thesis committee consisting of the thesis director and at least two other faculty members, one of whom must come

from another department. The committee requires prior approval by the Department Chair and the Academic Unit.

Examination Option

Completion of 33 credit hours of coursework, 15 credit hours in the required Core Courses and 18 credit hours in the student's chosen Major Field. The exam consists of two written examinations, one covering the competencies addressed in the Core Courses and one in the Major Field, and an oral examination. A committee will evaluate the written and oral examinations on their content and the relevant areas of history. The committee will consist of three faculty members, normally the two faculty members who administer the examinations and a third faculty member who may be in the Department of History. The committee requires approval by the Department Chair and the Academic Unit.

Horse Racing Industry Business (CERT)



Graduate Certificate in Horse Race Industry Business

Unit: College of Business (<https://business.louisville.edu/>) (GB)
Program Website (http://louisville.edu/online/programs/certificate-programs/online-horse-racing-industry-business-certificate/?utm_source=cob-website-referral)
Academic Plan Code(s): HRIBCGRO

Program Information

This program is completed entirely online (http://louisville.edu/online/programs/certificate-programs/online-horse-racing-industry-business-certificate/?utm_source=cob-website-referral).

Fast-paced and global in scope, the horse racing industry's complexities and challenges define the need for leaders who meld innovation, technology, and character into a strategy for the future. The Horse Racing Industry Business Certificate is a nine (9) credit hour certificate developed to immerse students into the horse racing industry through business strategies that focus on innovative approaches. Students participating in this program will graduate with an in-depth knowledge of the issues that challenge the industry and the insight into solving them.

Collaborative efforts between Equine Industry Program and horse racing industry specialists led to the creation of a uniquely tailored curriculum that addresses racing's most pressing issues. Faculty expertise along with industry professionals will provide students a broad-based knowledge in the areas of crisis management planning, business ethics, sports and wagering analytics, leadership strategy, regulations, and industry nuances.

Kentucky is known globally as the *Thoroughbred Capital of the World*, and is the reason horse racing remains its most valued signature industry. Louisville is home to Churchill Downs, which hosts the Kentucky Derby, the Greatest Two-Minutes in Sports, on the first Saturday in May. The Kentucky Derby is the oldest consecutively run major sporting event in the U.S. Kentucky is also a major hub for the international trade through its renowned Thoroughbred auctions, breeding farms, stallion stations, and industry-related associates and organizations.

The Equine Industry Program is located less than two-miles from Churchill Downs. It has been educating equine business leaders for over three decades. The Horse Race Industry Business Certificate is a natural extension of the program's commitment to the horse industry through education, research, and service.

The Horse Race Industry Business Certificate can be taken in conjunction with the MBA program (<https://catalog.louisville.edu/graduate/programs-study/master-business-administration/>).

Admission Requirements

Students must have a bachelor's degree from a regionally accredited university and a minimum undergraduate GPA of 2.5 to be admitted to the Horse Racing Industry Business certificate program.

GMAT/GRE scores are not required for admission to the program.

Complete a graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>).

Please note: Students who desire to complete an MBA in conjunction with the Horse Racing Industry Business certificate must be separately admitted to the MBA program (<http://catalog.louisville.edu/archive/2023-2024/graduate/programs-study/master-business-administration/>).

Program Requirements

Code	Title	Hours
EQIN 610	Horse Racing Industry Overview	1.5
EQIN 620	Strategic Communications for the Equine Industry	1.5
EQIN 630	Management and Leadership of Equine Enterprises	1.5
EQIN 640	Racetrack Operations and Related Activities	1.5
EQIN 650	Equine and Sports Analytics	1.5
EQIN 660	Regulatory Law in the Thoroughbred Industry	1.5
Minimum Total Hours		9

Human Resources and Organization Development (MS)

Master of Science in Human Resources and Organization Development
Unit: College of Education and Human Development (<http://louisville.edu/education/>) (GE)

Department: Educational Leadership, Evaluation, and Organizational Development (<http://louisville.edu/education/departments/eleod/>)

Program Website (<http://louisville.edu/education/degrees/ms-hrod/>)

Academic Plan Code(s): See Degree Requirements, with Concentrations tab.

Program Description

This program can be completed in a traditional classroom format or entirely online (<http://louisville.edu/online/programs/masters/master-of-science-in-human-resources-and-organization-development/>).

This program educates professionals who lead workplace performance, development, and learning through discovery and critical inquiry. Students and graduates work in corporations, government agencies, health-care organizations, the military, non-profit organizations, education institutions, and community-based groups.

The program has one degree option:

- Master of Science in Human Resources and Organizational Development (MS HROD)*, which can be completed in a traditional format or entirely online.

*Two previously offered concentrations in Workplace Learning and Performance (WLP) and Human Resource Leadership (HRL) were combined into the standard (no concentration) degree program, effective spring 2019. No new applications will be accepted for those concentrations.

Admission Requirements

The HROD Admissions Committee requires the following materials to make a decision about admission:

- **Graduate School Application:** Complete the online application to the Graduate School (<http://graduate.louisville.edu/apply/>).
- **Official transcripts of all undergraduate and graduate work.** Unconditional admission requires a minimum cumulative grade point average (GPA) of 2.5 for all coursework taken. Applicants who have attended a college or university outside of the United States are also required to submit an evaluation of their transcript through either WES (World Education Services) (<http://wes.org/>) or ECE (Educational Credential Evaluators) (<http://ece.org/>). Please note that transcript evaluations can sometimes take several weeks.

Please have transcripts sent to:

Graduate School
University of Louisville
Louisville, KY 40292

If transcripts are sent electronically, please have them sent to the following e-mail: gradadm@louisville.edu

- All applicants for whom English is a second language must also submit official TOEFL scores of 79 or higher on the internet-based test, 213 or higher on the computer-based test. English proficiency can also be met by submitting official IELTS scores of at least 6.5 overall band score from the academic module exam or official Duolingo overall score of 105. Students holding a bachelor's or advanced degree from an accredited institution in the United States may be exempt from this requirement.
- **Two letters of recommendation.** If you have studied at a college or university in the last five years, the admissions committee prefers to see at least one letter from a faculty member. Other references can include work supervisors. Personal references (e.g. family, friends) are not accepted.

- **Goal Statement Sheet [PDF].** The Admissions Committee evaluates applications based on how an applicant's goals, professional experiences, and commitment to education are an appropriate fit with this program.

- **Current Resume**

Admission is competitive. Meeting the GPA minimum does not guarantee that prospective students will be accepted into the program.

Program Information

The program requires ten courses consisting of 30 credit hours (including portfolio/fieldwork) (thesis option—not available in all academic plans).

The curriculum in all four concentrations is centered around five program goals:

- Investigate Gap
- Produce Interventions
- Implement and Lead Change
- Evaluate Outcomes
- Integrate Foundational Knowledge and Skills

MS in Human Resources and Organizational Development

Academic Plan Code(s): HRODMS, HRODMS_0

Program Purpose: To prepare professionals who lead people, performance, development, and learning through discovery and critical inquiry.

Code	Title	Hours
Core Coursework		18
LEAD 605	Leadership in HROD	
LEAD 611	Strategic Human Resources	
LEAD 617	Evidence Based Research in HROD	
LEAD 661	Adult & Organizational Learning	
LEAD 662	Organizational Analysis	
LEAD 616	HROD Integrative Capstone	
Electives		12
Choose 12 credit hours from the following:		
LEAD 578	Workplace and Information Ethics	
LEAD 614	Program and Organization Evaluation	
LEAD 612	Talent Acquisition and Management	
LEAD 624	Global Human Resources Development	
LEAD 631	Performance Management and Rewards	
LEAD 660	Diversity and Inclusion	
LEAD 663	Methods of Facilitation	
LEAD 664	Organizational Change and Consulting	
LEAD 671	Performance Improvement	
LEAD 672	Instructional Design and Development	
LEAD 674	Advanced Leadership Theory	
LEAD 696	Independent Study: HRE or IT	

Minimum Total Hours **30**

Midpoint Assessment: Successful progress on Hallmark Assessment Rubrics, as determined by faculty advisor

Exit Assessment: Competency Self-Assessment/Reflection, program portfolio, and integration of research, theory, and practice or thesis

Degree Assessment:

- A minimum of 30 credit hours with an overall GPA of 3.0; no more than two grades of C (six [6] credit hours)
- Satisfactory completion of program portfolio

Humanities (MA)



Master of Arts in Humanities

Unit: College of Arts and Sciences (<https://louisville.edu/artsandsciences/>) (GA)

Department: Comparative Humanities (<http://louisville.edu/humanities/>)
Program Website (<https://louisville.edu/humanities/graduate/ma/>)

Academic Plan Code(s): See Concentration Requirements tab.

Program Information

The MA in Humanities is an interdisciplinary, comparative, and globally-oriented master's program offered by the Department of Comparative Humanities in the College of Arts and Sciences. It is designed for students who seek to integrate two disciplines in the arts and humanities, and/or historical periods, with community enrichment. The MA in Humanities can be undertaken as an intensive two-year program, but there is the possibility of a part-time schedule for students with full-time jobs.

Degree Summary

Code	Title	Hours
	Concentration (see tab) ¹	21-24
	Research Methods	3
	Thesis/Directed Project ²	3-6
Minimum Total Hours		30-33

A minimum of 15 credit hours must be at the 600 level, excluding HUM 655. In addition to the coursework requirements listed above, some students may need to satisfy the foreign language competency requirement.

¹ Hours vary between concentrations and depending on whether students opt for a Thesis or a Directed Study Project option.

² Thesis option students take six (6) credit hours of HUM 645; Directed Study Project option students take three (3) credit hours of HUM 655.

Specific coursework information can be found on the Degree Requirements tab.

Areas of Concentration

The MA in Humanities offers three areas of concentration:

- Interdisciplinary Humanities
- Linguistics
- Public Humanities

Accelerated BA/MA in Humanities

Students who wish to pursue an accelerated master's degree will be allowed to apply to the baccalaureate degree up to nine (9) credit hours of coursework taken for graduate credit. Twenty-one (21) credit hours of graduate coursework, in addition, will constitute the minimum number of credit hours for obtaining the MA. The guidelines for the accelerated BA/MA in Humanities are as follows:

- Students must apply for admission to the program no later than the end of their junior year to be eligible enroll in graduate coursework in their final year of the program.
- A minimum overall grade point average and major grade point average of 3.35 will be required for admission to and for retention in the program.
- Students must fill out the online graduate admissions application (<https://louisville.edu/graduate/futurestudents/apply-materials/application/>).
- Students may take a maximum of nine (9) credit hours for graduate credit, which will also apply to the requirements for the baccalaureate degree in Humanities.
- The Public Humanities concentration is not available for accelerated completion.
- Students who enroll in the accelerated BA/MA in Humanities may elect the thesis or non-thesis option, whichever is appropriate to the concentration and course of study.
- All students in the program will take either HUM 609 or HUM 610 to fulfill the Methodology requirement.
- All requirements remain the same, including the foreign language requirement.

Admission Requirements

Regular admission to the Master of Arts in Humanities occurs twice yearly, for entry during the fall and spring semesters. The official deadline for Fall admission is January 15. The official deadline for Spring admission is September 15.

All applicants must have completed a BA in an appropriate field of study prior to beginning the program.

Applications should consist of the following:

- Online Graduate Application (<http://louisville.edu/graduate/apply/>) for admission
- Payment of Application fee
- A statement of intent (about 1000 words) focusing on the research interests or the applicant's professional goals
- A scholarly or creative writing sample (5,000-10,000 words)
- Official transcripts of all undergraduate and graduate-level work

- Two letters of recommendation from former instructors/co-workers attesting to capability for graduate-level work and/or work ethic.
- If applicable, proof of English proficiency (for international students from countries where English is not the native language).

Program Requirements

Code	Title	Hours
Concentration (see Concentration tab) ¹		21-24
First Core Area (12-15 credit hours)		
Second Core Area (9-12 credit hours)		
Research Methods		3
HUM 609	Interdisciplinary Theory: Arts and Humanities or HUM 610 Methods and Theories in the Study of Religion	
Thesis/Directed Project ²		3-6
HUM 655	Directed Study Project or HUM 645 Thesis Guidance	
Minimum Total Hours		30

In addition to the course work requirements listed above, students in two of the three concentrations need to satisfy a foreign language competency requirement.

¹ Concentration credit hours vary depending on whether students opt for a Thesis or a Directed Study Project.

² Thesis option students take six (6) credit hours of HUM 645; Directed Study Project option students take three (3) credit hours of HUM 655.

Concentrations

These concentrations are designed to provide students with a broad grasp of the Arts and Humanities with special strengths in selected areas such as Linguistics, Interdisciplinary Humanities, and Public Humanities.

In each track, students take a minimum of eight or nine classes and either write and defend a Thesis or a Directed Study Project at the end of the program.

Each concentration requires a minimum of 30 credit hours, with a minimum of 15 credit hours at the 600 level (excluding HUM 655 or HUM 645).

Beyond the course work requirements outlined below, students in two of the three concentrations need additional credits to satisfy the foreign language competency requirement.

Interdisciplinary Humanities (formerly "Traditional" track)

Academic Plan Code(s): HUM_MA_TRD, HUM_MA_TAC

Students in this track can combine the study of two disciplines or focus on the culture of a particular historical period. The cultural periods included are: Ancient, Medieval and Renaissance, Early Modern, and Modern/Contemporary.

In addition to the course work listed below, MA students in the Interdisciplinary Humanities concentration must satisfy a foreign

language competency requirement and complete a final oral defense of a thesis or Directed Study Project.

Code	Title	Hours
Interdisciplinary Humanities, Thesis		
First Core Area ^{1,2}		12
Second Core Area ^{1,2}		9
HUM 609	Interdisciplinary Theory: Arts and Humanities	3
or HUM 610	Methods and Theories in the Study of Religion	
HUM 645	Thesis Guidance	6

Minimum Total Hours 30

Code	Title	Hours
Interdisciplinary Humanities, Directed Study Project		
First Core Area ^{1,2}		15
Second Core Area ^{1,2}		9
HUM 609	Interdisciplinary Theory: Arts and Humanities	3
or HUM 610	Methods and Theories in the Study of Religion	
HUM 655	Directed Study Project	3

Minimum Total Hours 30

A minimum of 15 credit hours for the degree must be at the 600 level (excluding HUM 655).

¹ Core Areas may include (but are not limited to) the following: Art History, Classical and Modern Languages, Literature, Film, Jewish Studies, Music History, Philosophy, Religious Studies, Theatre Arts, Medieval/Renaissance Studies, Early Modern (17th and 18th Century Studies), Pan African Studies, Latin American and Latino Studies, Women's, Gender and Sexuality Studies or Modern and Contemporary Cultural Studies.

² Students without either Hum 590 or Hum 595 in their undergraduate coursework may be required to take one of these as part of their core area course work.

Public Humanities

Academic Plan Code(s): HUM_MA_PH

Students in this track are interested in bringing the ideas of academic debate into the public sphere, or are enrolled in the Joint JD/MA (<https://louisville.edu/humanities/graduate/ma/accelerated/jd-ma/>) or MA/MBA (<https://louisville.edu/humanities/graduate/ma/accelerated/dual-mba-ma-concentration-in-public-humanities/>) Programs. They can combine the study of Public Humanities with a discipline or a focus on the culture of a particular historical period. The cultural periods included are: Ancient, Medieval and Renaissance, Early Modern, and Modern/Contemporary.

In addition to the course work listed below, MA students in the Public Humanities concentration must complete one required internship, but have no foreign language competency requirement. They can choose between a final oral defense of a Directed Study Project or a Thesis.

The Public Humanities concentration is not available for accelerated completion.

Code	Title	Hours
Public Humanities, Thesis		
Public Humanities Core Area, including:		12
HUM 636	Introduction to Public Humanities	
HUM 650	Graduate Internship	
HUM 671	Introduction to Public History	
Second Core Area ¹		9
Required HUM course (Theories and Methodologies)		
HUM 609 or HUM 610	Interdisciplinary Theory: Arts and Humanities Methods and Theories in the Study of Religion	3
HUM 645	Thesis Guidance	6
Minimum Total Hours		30

¹ Core Areas may include (but are not limited to) the following: Art History, Classical and Modern Languages, Literature, Film, Jewish Studies, Music History, Philosophy, Religious Studies, Theatre Arts, Medieval/Renaissance Studies, Early Modern (17th and 18th Century Studies), Pan African Studies, Latin American and Latino Studies, Women's, Gender and Sexuality Studies or Modern and Contemporary Cultural Studies.

Code	Title	Hours
Public Humanities, Directed Study Project		
Public Humanities Core Area, including:		12-15
HUM 636	Introduction to Public Humanities	
HUM 650	Graduate Internship	
HUM 671	Introduction to Public History	
Second Core Area ¹		9-12
Required HUM course (Theories and Methodologies)		
HUM 609 or HUM 610	Interdisciplinary Theory: Arts and Humanities Methods and Theories in the Study of Religion	3
HUM 655	Directed Study Project	3
Minimum Total Hours		30

A minimum of 15 credit hours for the degree must be at the 600 level (excluding HUM 655 or HUM 645).

¹ Core Areas may include (but are not limited to) the following: Art History, Classical and Modern Languages, Literature, Film, Jewish Studies, Music History, Philosophy, Religious Studies, Theatre Arts, Medieval/Renaissance Studies, Early Modern (17th and 18th Century Studies), Pan African Studies, Latin American and Latino Studies, Women's, Gender and Sexuality Studies or Modern and Contemporary Cultural Studies.

Linguistics

Academic Plan Code(s): HUM_MA_LIN, HUM_MA_LAC

Students in this track combine in a unique way the study of the interdisciplinary humanities with a specialized concentration in linguistics. Students take three core courses and then a minimum of two additional 600-level linguistics courses. Along with our Humanities faculty, students are able to study with linguists in the adjacent

departments of Classical and Modern Languages, English, Philosophy, and Psychology.

In addition to the course work listed below, MA students in the Linguistics concentration must satisfy a foreign language competency requirement and complete a final oral defense of a Directed Study Project or a Thesis.

Code	Title	Hours
Linguistics, Thesis		
Linguistics Core Sequence ¹		9
LING 603	Syntax	
LING 610	Phonetics and Phonology or LING 630 Language and Culture or LING 640 Linguistic Anthropology	
<i>Six (6) additional credits from the following:</i>		6
Sociocultural Linguistics		
LING 523	History of the English Language or ENGL 523 History of the English Language	
LING 570	Language and Social Identity or ENGL 570 Language and Social Identity	
LING 621	Sociolinguistics	
Structural Linguistics		
LING 522	Structure of Modern English or ENGL 522 Structure of Modern English	
LING 606	Historical and Comparative Linguistics	
LING 620	Special Topics in Linguistics	
LING 624	Language and Cognition	
LING 641	Recent Philosophy of Language	
Other graduate-level Linguistics courses		
LING 600	Independent Study	
LING 690	Seminar in Linguistics	
Second Area Core ³		9
HUM 609 or HUM 610	Interdisciplinary Theory: Arts and Humanities Methods and Theories in the Study of Religion	3
HUM 645	Thesis Guidance	6
Minimum Total Hours		33

Code	Title	Hours
Linguistics, Directed Study Project		
Linguistics Core Sequence ¹		9
LING 603	Syntax	
LING 610	Phonetics and Phonology	
LING 630	Language and Culture or LING 640 Linguistic Anthropology	
Six additional credits from the following:		6
Sociocultural Linguistics		
LING/ENGL 523	History of the English Language	
LING/ENGL 570	Language and Social Identity	
LING 621	Sociolinguistics	
Structural Linguistics		
LING/ENGL 522	Structure of Modern English	

LING 606	Historical and Comparative Linguistics	
LING 624	Language and Cognition	
LING 641	Recent Philosophy of Language	
Other graduate-level Linguistics courses		
LING 600	Independent Study ²	
LING 620	Special Topics in Linguistics	
LING 690	Seminar in Linguistics	
Second Core Area ³		9
HUM 609 or HUM 610	Interdisciplinary Theory: Arts and Humanities Methods and Theories in the Study of Religion	3
HUM 655	Directed Study Project	3
Minimum Total Hours		30

A minimum of 15 credit hours for the degree must be at the 600 level (excluding HUM 655 or HUM 645).

¹ Students with no prior undergraduate linguistics coursework are encouraged to audit or enroll on a pass/fail (P/F) basis in LING 325. These credits will not apply to the hours needed to complete the MA degree.

² Under direction of Linguistics-affiliated faculty

³ Core Areas may include (but are not limited to) the following: Art History, Classical and Modern Languages, Literature, Film, Jewish Studies, Music History, Philosophy, Religious Studies, Theatre Arts, Medieval/Renaissance Studies, Early Modern (17th and 18th Century Studies), Pan African Studies, Latin American and Latino Studies, Women's, Gender and Sexuality Studies or Modern and Contemporary Cultural Studies.

Humanities (PhD)



Doctor of Philosophy in Humanities

Unit: College of Arts and Sciences (<http://louisville.edu/artsandsciences/>) (GA)

Department: Comparative Humanities (<http://louisville.edu/humanities/>)
Program Website (<https://louisville.edu/humanities/graduate/phd/>)

Academic Plan Code(s): HUM_PHDCCC, HUM_PHDPAL, HUM_PHDA&C, HUM_PHDSC

Program Information

Established in 2003, the University of Louisville's Doctoral Program in Humanities is a four-year course of study providing rigorous interdisciplinary training in the Humanities.

Administratively housed in the Department of Comparative Humanities, its faculty belongs to many departments across the university. Our

students have the possibility to work with research-active scholars, artists, and writers across the Humanities, the Social Sciences, Studio Arts, Medicine, Law, and more.

The program was redesigned in 2013 in order to increase its focus on theoretical and global perspectives with the goal to produce top-level scholars and artists not only for the academic profession, but for innovative careers well beyond the academy.

Program Options

The Program currently offers two specialized career tracks:

- The traditional, yet innovative, **Culture, Criticism, and Contemporary Thought (C3T)**: for scholars oriented toward the academy, museums, and other institutions and organizations employing doctoral degree recipients.
- The unique **Public Arts and Letters (PAL)**: for artists and writers across fields wishing to produce works of literature, art, music, opera, performance, film, etc. that is grounded in and informed by intensive scholarship.

Admission Requirements

Admission to the Humanities PhD Program is exclusively for the fall semester of each academic year.

All materials must be received by January 15 for the following fall. No late applications will be accepted.

All applicants must have completed an appropriate master's degree (MA, MFA, MDiv, or other) prior to beginning the program.

All applicants must also have fulfilled all requirements of the Graduate School.

Application requirements include:

- Online Graduate Application for Admission (<http://louisville.edu/graduate/apply/>)
- Graduate Application fee
- A current curriculum vitae
- A statement of intent (about 1000 words) focusing on the research interests and the applicant's professional goals
- A scholarly or creative writing sample
- Official transcripts of all undergraduate- and graduate-level work
- Graduate Record Examination (GRE) General Test scores are optional. The Humanities Graduate Admissions Committee will do a **holistic review** of all the application material in order to make a final decision.
- Three letters of recommendation from former professors or colleagues attesting to capability for doctoral-level work
- If applicable, proof of English proficiency

Program Requirements

In addition to the coursework outlined below, students are required to demonstrate basic proficiency in two classical and/or modern languages, or advanced proficiency in one (in addition to English).

It also is strongly recommended that students orient completion of specialization coursework toward a specific discipline, and supplement required coursework with elective courses in that discipline.

Required Coursework

Culture, Criticism, and Contemporary Thought (3CT) or **Public Arts and Letters (PAL)** tracks: there are no track specific course requirements beyond the **Foundations** and **Theories and Methods** courses listed below.

Code	Title	Hours
Foundation Courses		12
HUM 660	Proseminar: Introduction to Doctoral Study (Global Humanities)	
HUM 661	Historical Perspectives on Arts & Culture I	
HUM 662	Historical Perspectives on Arts & Culture II	
HUM 663	Global Perspectives on Arts & Culture	
Theories and Methods Courses		6
HUM 673	Topics in Cultural Theory	
HUM 674	Topics in Aesthetic Theory	
Supervised Projects		9
HUM 650	Graduate Internship	
HUM 653	Doctoral Project I	
HUM 654	Doctoral Project II	
Courses in Area of Specialization		12
Dissertation Research		9
HUM 700	Dissertation Research	
Minimum Total Hours		48

Industrial Engineering (MS)

Master of Science in Industrial Engineering (IE MS)

Unit: Speed School of Engineering (<http://engineering.louisville.edu>)(GS)

Department: Industrial Engineering (<https://engineering.louisville.edu/academics/departments/industrial/>)

Academic Plan Code(s): IE_ _MS, IE_ _MSO

Program Information

This program can be completed in a traditional classroom format or entirely online (<http://louisville.edu/online/programs/masters/online-master-of-science-in-industrial-engineering/>).

General Information

The MS degree program is suitable for individuals with an accredited baccalaureate degree in engineering or from any other discipline (e.g. mathematics, business, psychology, physics, and alike). Applicants with a baccalaureate degree other than Industrial Engineering should consult with the Director of the MS program in the Department of Industrial Engineering on their readiness and necessary remedial work in order to succeed.

Degree Requirements

The program of study must be completed with a 3.00 GPA or better for all graduate courses used to satisfy degree requirements. Additionally, the program of study must be completed with a 3.00 GPA or better for all academic work attempted in graduate studies.

The requirements for the Master of Science degree are discussed in more detail in the Degree Requirements (<http://catalog.louisville.edu/>

[archive/2023-2024/graduate/general-policies-procedures-requirements/degree-requirements/](http://catalog.louisville.edu/archive/2023-2024/graduate/general-policies-procedures-requirements/degree-requirements/)) section of this catalog.

Admission Standards

The admission standards for the master of science program in industrial engineering are as follows:

- a. All admission applications for the program shall include:
 - i. A completed graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) for the Graduate School
 - ii. An application fee
 - iii. Resume
 - iv. At least two letters of recommendation
 - v. Official transcript(s) for all previous post-secondary coursework. All transcripts not in English must be certified as authentic and professionally translated verbatim into English.
- b. The minimum requirement for admission is the baccalaureate degree or its equivalent from an accredited institution.
- c. The successful applicant will typically have an undergraduate grade point average of 2.75 or above (on a 4.00 scale).
- d. International students whose primary language is not English must show English language proficiency by either TOEFL/IELTS/Duolingo score or demonstration of a degree awarded from an acceptable English language institution. The successful applicant will typically have a TOEFL score of 80 or higher or overall IELTS score of 6.5 or higher or a Duolingo score of 105 or higher.

Program Requirements

Remedial work may be specified for those applicants who, in the opinion of the faculty, do not have a sufficient background. The minimum curricular requirements for the master's program are:

Code	Title	Hours
Core Courses		
IE 560	Probability and Statistics for Engineers	3
IE 563	Experimental Design in Engineering	3
Focus Area Courses ^{1,2}		9
5XX and/or 6XX Technical Electives ^{3,4}		9
Select one of the following:		6
<i>Course Only Option</i>		
5XX and/or 6XX Technical Electives ^{3,4}		
<i>Thesis Option</i>		
IE 690	Master of Science Thesis in Industrial Engineering ⁵	5
<i>Project Option</i>		
IE 699	Industrial Engineering Master's Degree Project	
5XX and/or 6XX Technical Elective ^{3,4}		
Minimum Total Hours		30

¹ See Focus Area Options below with the courses included in each area.

² Focus area is not required. Student could plan a "General" MS Industrial Engineering degree if coursework does not fit into a specific focus area.

³ Electives must be chosen so that at least one-half of the credits counted toward the degree, exclusive of thesis, are 600-level.

- ⁴ Electives must be chosen so that at least fifteen (15) credit hours of coursework are in IE.
- ⁵ For the thesis option, a student is required to select both an approved MS thesis topic and the thesis director and members of the thesis committee. The thesis director must give approval for enrollment in IE 690.

Focus Areas

Data Analytics and Operations Research

Code	Title	Hours
IE 515	Operations Research Methods	3
IE 541	Simulation	3
IE 561	Developing Decision Support Systems with Excel	3
IE 662	Predictive Analytics for Decision Making I	3

Logistics and Supply Chain

Code	Title	Hours
IE 515	Operations Research Methods	3
IE 621	Facilities Planning	3
IE 625	Production and Inventory Control	3

Advanced Manufacturing

Code	Title	Hours
IE 600	Additive Manufacturing Processes	3
IE 629	Quality Control	3
IE 619	Advanced Manufacturing Systems	3

Human Factors

Code	Title	Hours
IE 580	Introduction to Human Factors Engineering and Ergonomics	3
IE 581	Advanced Topics in Human Factors Engineering	3
IE 585	Usability Engineering	3
IE 682	Quality of Care and Patient Safety	3
IE 684	Health IT and Clinician Support	3

Industrial Engineering (PhD)

Doctor of Philosophy in Industrial Engineering

Unit: Speed School of Engineering (<http://engineering.louisville.edu>)(GS)

Department: Industrial Engineering (<https://engineering.louisville.edu/academics/departments/industrial/>)

Academic Plan Code(s): IE_ _PHD

Program Information

General Information

The PhD degree program is intended for persons having an accredited baccalaureate degree in Industrial Engineering, but is available to those with other backgrounds. Applicants with other backgrounds should plan on taking some undergraduate background coursework. Students interested in the PhD degree program should consult the Director of the PhD program in the Department of Industrial Engineering.

Degree Requirements

The award of a Doctor of Philosophy degree indicates that a student has attained mastery of a field and has demonstrated the capacity to perform independent scholarly research. Candidates for the Doctor of Philosophy degree must have a minimum final cumulative grade point average of 3.00 for all academic coursework approved in their flight plan for the doctoral program.

The requirements for the Doctor of Philosophy degree are explained in more detail in the Degree Requirements section (<http://catalog.louisville.edu/archive/2023-2024/graduate/general-policies-procedures-requirements/degree-requirements/>) of this catalog.

Admission Standards

The admission standards for the PhD program in industrial engineering are as follows:

- a. All admission applications for the program shall include:
 - i. A completed graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) for the Graduate School
 - ii. An application fee
 - iii. Results from the Graduate Record Examination (GRE)
 - iv. At least two letters of recommendation
 - v. Statement of Purpose (include intended area of study and/or research interests)
 - vi. Resume
 - vii. Official transcript(s) for all previous post-secondary coursework. All transcripts not in English must be certified as authentic and translated verbatim into English.
- b. The minimum requirement for admission is the baccalaureate degree or its equivalent from an accredited institution.
- c. The successful applicant will typically have an undergraduate grade point average of 3.00 or above (on a 4.00 scale).
- d. International students whose primary language is not English must show English language proficiency by either TOEFL/IELTS/Duolingo score or demonstration of a degree awarded from an acceptable English language institution. The successful applicant will typically have a TOEFL score of 80 or higher or overall IELTS score of 6.5 or higher or a Duolingo score of 105 or higher.

Program Requirements

Normally, it is expected that the student would have completed a master's degree before being admitted to the PhD Program. However, qualified applicants may be admitted directly to the doctoral program after receiving a baccalaureate degree. Such post-baccalaureate degree students will be required to complete an additional 30 credit hours of graduate coursework approved by the department's Director of PhD program. Also, remedial work may be specified for those applicants who, in the opinion of the faculty, do not have a sufficient background.

The PhD program has three different focus areas available: Data Analytics & Operations Research (DA-OR), Human Factors (HF), and Advanced Manufacturing (AM). The minimum curricular requirements for each focus area in the doctoral program are:

Code	Title	Hours
Post-Baccalaureate Coursework		
	Approved Master's Level Coursework ¹	30

Core Courses (Select two courses from a focus area below)	6
Technical Electives ²	9
IE 700 Dissertation Research in Industrial Engineering	9
IE 695 PhD Seminar ³	2
Minimum Total Hours	56

- ¹ Master's level coursework must be approved by the Department.
² Non-IE Electives must be approved by the department.
³ 75% attendance (or excused absence approved by the Department) is required yearly until graduation and one presentation a year (or excused absence approved by the Department) is required by a Doctoral candidate until graduation.

Focus Areas

Data Analytics & Operations Research

Code	Title	Hours
IE 515	Operations Research Methods	3
IE 662	Predictive Analytics for Decision Making I	3
IE 663	Predictive Analytics for Decision Making II	3
IE 694	Advanced Topics in IE (Algorithms for Combinatorial Optimization OR Equivalent course approved by the department)	3

Human Factors

Code	Title	Hours
IE 581	Advanced Topics in Human Factors Engineering	3
IE 585	Usability Engineering	3
IE 682	Quality of Care and Patient Safety	3
IE 684	Health IT and Clinician Support	3

Advanced Manufacturing

Code	Title	Hours
IE 563	Experimental Design in Engineering	3
IE 600	Additive Manufacturing Processes	3
IE 601	Additive Manufacturing Structure Design	3

Interdisciplinary Studies (MA)

Interdisciplinary (MA) and (MS)

Faculty may propose interdisciplinary tracks of study that will form the basis for suitable areas of concentration to train students. The track must meet the criteria outlined above in terms of minimum credit hours and the distribution of coursework across disciplinary lines. Proposed areas of concentration and interdisciplinary tracks of study will be subject to approval by the following academic bodies:

- Unit Curriculum and Budget Committees
- Graduate Council
- Faculty Senate
- Provost

The development of an interdisciplinary track is the responsibility of the faculty, but the Associate Dean for Interdisciplinary Studies will provide assistance and guidance. Participating faculty must have the consent

of their departmental chair or dean to participate in an Interdisciplinary Track.

Requests for further information or assistance should be addressed to:

Associate Dean for Interdisciplinary Studies

Graduate School

Houchens Building, Suite 105
 University of Louisville
 Louisville, Kentucky 40292
 Phone: (502) 852-6495
 Email: graduate@louisville.edu

Applicants for tracks within the interdisciplinary master's program must present complete admission credentials in to be admitted. Admission must be recommended by the Director of Graduate Studies for the track on the recommendation of the track's admissions committee. The required credentials are:

- The application for admission;
- Transcripts showing all undergraduate and graduate course work and all degrees earned;
- Scores on the Graduate Record Examination General Test; if required for admission;
- Three letters of recommendation;
- TOEFL, IELTS or Duolingo score if the applicant's native language is not English and he/she has not earned a degree from a university or college in the U.S.;
- A written statement of career objectives and rationale for obtaining an advanced degree..

All these credentials must be sent to the Graduate School, Graduate Admissions, University of Louisville, for distribution to the appropriate offices.

Curriculum will be determined during the development of each individual student's program proposal for the individually-designed programs. For an Interdisciplinary Track program, a core of faculty may propose a curriculum that will form the basis for an area of concentration.

In addition to the above stipulations regarding admissions, each interdisciplinary master's degree program track must meet specific criteria as follow

- An overall minimum of 30 credit hours at 500 or 600 level.
- A thesis (maximum of six (6) hours for thesis in a 30 credit hour program) or six (6) additional credit hours of 600-level courses for non-thesis. Interdisciplinary students must enroll in GS 699 for thesis credit.
- At least one-half of the non-thesis, non-practicum, non-internship credit hours must be at the 600 level.
- A minimum of six (6) credit hours of 600-level course work must be taken in each of at least two departments or programs offering degrees through the Graduate School.
- No single department or program may offer more than half the total number of credit hours required by the program.
- Exclusive of thesis credit, no more than six (6) credit hours may be taken in courses of the independent-study or practicum type; such course work may not be counted toward criteria specified in 3 or 4.
- Courses designated as fulfilling degree requirements must be offered with sufficient frequency to permit the student to complete degree

requirements within a reasonable time (two years for a 30 credit hour program).

- h. If a thesis is required, the student's primary mentor must meet their unit's minimum graduate faculty guidelines for directing theses.

Interdisciplinary Studies (MS)

Interdisciplinary Studies (MS) and (MA)

Faculty may propose interdisciplinary tracks of study that will form the basis for suitable areas of concentration to train students. The track must meet the criteria outlined above in terms of minimum credit hours and the distribution of coursework across disciplinary lines. Proposed areas of concentration and interdisciplinary tracks of study will be subject to approval by the following academic bodies:

- a. Unit Curriculum and Budget Committees
- b. Graduate Council
- c. Faculty Senate
- d. Provost

The development of an interdisciplinary track is the responsibility of the faculty, but the Associate Dean for Interdisciplinary Studies will provide assistance and guidance. Participating faculty must have the consent of their departmental chair or dean to participate in an Interdisciplinary Track.

Requests for further information or assistance should be addressed to:

Associate Dean for Interdisciplinary Studies
Graduate School
Houchens Building, Suite 105
University of Louisville
Louisville, Kentucky 40292
Phone: (502) 852-6495
Email: graduate@louisville.edu

Admission Requirements

Applicants for tracks within the interdisciplinary master's program must present complete admission credentials in to be admitted. Admission must be recommended by the Director of Graduate Studies for the track on the recommendation of the track's admissions committee. The required credentials are:

- a. The application for admission;
- b. Transcripts showing all undergraduate and graduate course work and all degrees earned;
- c. Scores on the Graduate Record Examination General Test; if required for admission;
- d. Three letters of recommendation;
- e. TOEFL, IELTS or Duolingo score if the applicant's native language is not English and he/she has not earned a degree from a university or college in the U.S.;
- f. A written statement of career objectives and rationale for obtaining an advanced degree..

All these credentials must be sent to the Graduate School, Graduate Admissions, University of Louisville, for distribution to the appropriate offices.

Program Requirements

Curriculum will be determined during the development of each individual student's program proposal for the individually-designed programs. For an Interdisciplinary Track program, a core of faculty may propose a curriculum that will form the basis for an area of concentration.

In addition to the above stipulations regarding admissions, each interdisciplinary master's degree program track must meet specific criteria as follow

- a. An overall minimum of 30 credit hours at 500 or 600 level.
- b. A thesis (maximum of six (6) hours for thesis in a 30 credit hour program) or six (6) additional credit hours of 600-level courses for non-thesis. Interdisciplinary students must enroll in GS 699 for thesis credit.
- c. At least one-half of the non-thesis, non-practicum, non-internship credit hours must be at the 600 level.
- d. A minimum of six (6) credit hours of 600-level course work must be taken in each of at least two departments or programs offering degrees through the Graduate School.
- e. No single department or program may offer more than half the total number of credit hours required by the program.
- f. Exclusive of thesis credit, no more than six (6) credit hours may be taken in courses of the independent-study or practicum type; such course work may not be counted toward criteria specified in 3 or 4.
- g. Courses designated as fulfilling degree requirements must be offered with sufficient frequency to permit the student to complete degree requirements within a reasonable time (two years for a 30 credit hour program).
- h. If a thesis is required, the student's primary mentor must meet their unit's minimum graduate faculty guidelines for directing theses.

Interdisciplinary Studies (PhD)

Interdisciplinary Studies (PhD)

Faculty may propose interdisciplinary programs of study that will form the basis for suitable areas of specialization to train students. The specialization must meet the criteria outlined above in terms of minimum credit hours and the distribution of coursework across disciplinary lines. Proposed areas of specialization will be subject to approval by the following academic bodies:

- a. Unit Curriculum and Budget Committees
- b. Graduate Council
- c. Faculty Senate
- d. Provost

The development of an interdisciplinary specialization is the responsibility of the faculty, but the Associate Dean for Interdisciplinary Studies will provide assistance and guidance. Participating faculty must have the consent of their departmental Chair or Dean to participate in an Interdisciplinary specialization. Students must choose a primary mentor, but may have co-mentors.

Requests for further information or assistance should be addressed to:

Associate Dean for Interdisciplinary Studies
Graduate School
Houchens Building, Suite 105
University of Louisville

Louisville, Kentucky 40292
Phone: (502) 852-6495
Email: graduate@louisville.edu

Admission Requirements

Applicants for interdisciplinary doctoral programs must present complete admission credentials in order to be formally admitted by the Graduate School.

The required credentials are:

- a. A 3.25 grade point average.
- b. Scores on the Graduate Record Exam General Test, if required by one of the programs for admissions.
- c. Proof of a Baccalaureate Degree and official transcripts of all undergraduate and graduate course work.
- d. International students for whom English is not their primary language must show English language proficiency by one of the following:
 - i. TOEFL examination score at or above (5.0 on the TWE test), 213 (computer-based test),79 (internet-based test)
 - ii. IELTS test score of 6.5 or higher
 - iii. Duolingo score of 105 or higher
 - iv. Demonstration of a degree awarded by an acceptable English-language institution.
- e. Three letters of recommendation from individuals who are able to comment on the student's academic abilities and potential for success in graduate studies.

Program Requirements

In addition to established Graduate School policies and requirements, each Interdisciplinary PhD Program Track will be required to meet specific criteria as follows:

- a. The curriculum must include coursework representing each of the disciplinary areas in the interdisciplinary degree program. An overall minimum of 36 credit hours of graduate level coursework is required, but may be higher to reflect the standards for doctoral study in the disciplines represented in the interdisciplinary degree program.
- b. Each program must be designed so that it is not dominated by a single department's offerings. A minimum of six (6) credit hours of 600-level course work must be taken in each of at least two different departments or programs offering graduate degrees.
- c. The curriculum plan must include coursework that provides training in research methodology deemed suitable to the interdisciplinary nature of the program.
- d. A dissertation involving original research that crosses established disciplinary lines is required.
- e. Faculty serving on committees and as mentors in the Interdisciplinary Studies PhD program must have a doctorate degree or substantial evidence of relevant experience and must hold membership in the Graduate Faculty of a unit.
- f. A student's primary mentor must meet their unit's minimum graduate faculty guidelines for directing doctoral dissertations. If a student's mentor has not directed a dissertation in the past, the student must also have a co-mentor who has previous experience directing dissertations and be currently eligible to serve as a dissertation committee chair for per the graduate faculty guidelines.

Interdisciplinary Studies: Concentration in Sustainability (MA/ MS)

Master of Arts/Master of Science in Interdisciplinary Studies, concentration in Sustainability

Unit: Graduate School (<https://louisville.edu/graduate/>) (GI)

Program Website (<https://louisville.edu/upa/programs/master-of-interdisciplinary-studies-in-sustainability/>)

Academic Plan Code(s): IS_MA_SUS, IS_MS_SUS

Program Information

The large-scale goal of the Master of Interdisciplinary Studies in Sustainability Degree programs (both MA and MS degree programs are available) is to prepare students to address complex regional, state, national and global challenges posed by the intersection of human exponential growth and increasingly limited resources that support society. Students seeking a career involving research or doctoral program should consider pursuing the Master of Science option.

The exponentially rising demands that human populations make on natural resources and ecological systems that supply us with energy, food, water, and many other ecosystem services will be further threatened by climate change and the pollution of air, soil, and water. Continued reliance on a "business as usual" approach to the economic production and consumption of goods and services, often characterized by the stresses it places on The Commons and by a disregard for environmental and social justice, now threatens the ability of the natural world to absorb our collective impact, erodes our collective security, and polarizes our societies. Substantial changes in social contracts, economic systems, as well as individual and institutional behaviors will be needed to provide more sustainable, healthy and secure societies. National, regional and local experimentation is needed to find solutions to societal challenges.

This Master of Interdisciplinary Studies in Sustainability program is an initiative of the University of Louisville's Sustainability Council which seeks to integrate sustainability into everything that goes on at UofL. Students in the program are encouraged to contribute to the Sustainability Council's efforts to explore sustainable solutions for UofL and our community.

More information about the UofL Sustainability Council can be found on their website (<http://louisville.edu/sustainability/>).

Admission Requirements

Applicants must have a bachelor's degree (any major is acceptable), and provide a completed application form, a transcript of all undergraduate course work, and letters of recommendation.

Admission is competitive. The minimum requirements for unconditional admission are the baccalaureate degree or its equivalent from an accredited institution, an undergraduate grade point average of 3.0 on a 4.0 scale.

Those applicants whose native language is not English and who do not hold a degree from a university where the language of instruction is English, must complete the Test of English as a Foreign Language (TOEFL) with a score of at least 79 on the internet-based test, the International English Language Testing System (IELTS), with a minimum score of 6.5 or Duolingo score of 105.

Application Deadlines

The program maintains a rolling admissions policy. Target dates include:

- Fall semester:** July 15
- Spring semester:** November 15
- Summer semester:** April 15

Application Materials

The following materials must be submitted via the Graduate School website (<http://graduate.louisville.edu/apply/>):

- a. Graduate Application**
- b. Application Fee**
- c. Transcript(s):** Transcripts of your college records from all of the schools you have attended must be submitted to the Graduate School, Graduate Admissions. Students must have earned an undergraduate degree from an accredited college or university.*
- d.** Those for whom English is not their native language must also submit TOEFL scores, International English Language Testing System (IELTS) or Duolingo.*
- e. Three Recommendation Letters:** Three letters of recommendation from academic sources are required and must be submitted online to the Graduate School, Graduate Admissions.

The committee for reviewing student applications will consist of faculty currently serving on the Sustainability Council's Education Committee.

For answers to commonly asked questions by applicants, please review the Frequently Asked Questions (<https://louisville.edu/graduate/futurestudents/admissions-faq-for-prospective-graduate-students/>) page of the Graduate School website.

*There are additional requirements for international students. These requirements are listed at louisville.edu/graduate/futurestudents/international-applicants/international-students (<https://louisville.edu/graduate/futurestudents/international-applicants/international-students/>).

Accelerated Degree Admissions Process

Students should apply to these programs in their junior year. Advising to ensure the requirements are met without extraneous credit hours is imperative and strongly recommended for timely degree completion and financial considerations for the accelerated degrees. Please be sure to consult with advisors and the director of the master's program.

Special Requirements for Accelerated Master's Degree Program Admission

- a. An undergraduate GPA of 3.0 or better
- b. Completion of SUST 101, 201, 202, 301, 302 and 303 with a minimum GPA of 3.0

The accelerated degree program allows a student to complete the Bachelor of Arts in Sustainability and the Master of Arts or Master of Science in Interdisciplinary Studies: Concentration in Sustainability over a five year period. The first four years consist of undergraduate studies, including three core sustainability graduate level courses taken

during the senior year, culminating in the award of the Bachelors of Arts in Sustainability degree. Core courses should include PLAN 675, SUST 602, and research methods.

The fifth year consists of graduate coursework leading to completion of the Master of Arts or Master of Science in Interdisciplinary Studies:

Concentration in Sustainability. The accelerated curriculum allows students to apply 9 credit hours of graduate core course work taken during their undergraduate studies towards the completion of both the BA and Master's degrees. An additional semester of research may be required to complete a thesis for the Master of Science degree.

Program Requirements for a Master of Arts Degree

Code	Title	Hours
Required Course		3
PLAN 675	Introduction to Sustainability	
Core Courses		
Students are required to take one course in each Core Area:		
Sustainability and the Built Environment		3
PLAN 670	Sustainable Development and Planning	
UPA 679	Environmental Policy	
Sustainability and the Natural Environment		3
SUST 602	Sustainability and the Natural Environment	
Sustainability and the Social Environment		3
ANTH 522	Ecology, Politics and Culture	
PLAN/PADM 673		
UPA 673		
UPA 606	Research Design	
Research Methods or Statistics course in the student's selected Core Area		3
Seminar		3
Capstone		3
Guided Electives within Core Areas (see below)		9
Minimum Total Hours		30

Program Requirements for a Master of Science Degree

Code	Title	Hours
Required Course		3
PLAN 675	Introduction to Sustainability	
Core Courses		
Students are required to take one course in each Core Area:		
Sustainability and the Built Environment		3
PLAN 670	Sustainable Development and Planning	
UPA 679	Environmental Policy	
Sustainability and the Natural Environment		3
SUST 602	Sustainability and the Natural Environment	
Sustainability and the Social Environment		3
ANTH 522	Ecology, Politics and Culture	

PLAN/PADM 673	
UPA 673	
UPA 606	Research Design
Research Methods or Statistics course in the student's selected Core Area	3
Seminar	3
Thesis	6
Guided Electives within Core Areas (see below)	9
Minimum Total Hours	33

Students will work with their academic committees to select the core and elective courses needed. It is strongly recommended that a student's committee distribute elective courses such that at least three (3) or four (4) credit hours are in an area other than that of the student's home department. Other courses may be acceptable with the program director's approval.

Built Environment

Code	Title	Hours
CEE 660	Transportation Planning and Urban Development	3
CEE 661	Environmental Analysis of Transportation Systems	3
CEE 681	Green Engineering & Sustainable Design	3
GEOG 536	Sustainable Transportation	3
LAW 902	Real Estate Transactions	2-3
PLAN 670	Sustainable Development and Planning	3
PLAN 607	Land Use Planning	3
PLAN 622	Urban Design	3
PLAN 623		3
PLAN 625	Historic Preservation and Sustainable Practice	3
PLAN 636	Site Planning	3
PLAN 650	Capstone Studio	6
UPA 648	Housing and Community Development	3
UPA 672	Public Management	3
UPA 679	Environmental Policy	3
UPA 680	Special Topics in Urban and Public Affairs	1-6

Natural Environment

Code	Title	Hours
ANTH 528	Animals and Humans	3
ANTH 531	Anthropology of Water	3
ANTH 535	Nutritional Anthropology	3
BIOL 567	Conservation Biology	3
BIOL 644	Global Change Ecology	4
BIOL 660	Advanced Ecology of Urban and Suburban Landscapes	4
BIOL 663	Advanced Population and Community Ecology	4
BIOL 667	Advanced Conservation Biology	4
ENVS 663	Climate and Environmental Change	3

LAW 903/ SUST 703	Land and Ecosystem Conservation	2-3
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Social Environment

Code	Title	Hours
ANTH 530	Human Impacts on Past Environments	3
ANTH 540	Health and Civilization	3
ANTH 626	Food Justice	3
ART 692	Art, Thinking & Social Change	3
GEOG 500	Globalization Seminar	3
HIST 610	Introduction to Historic Preservation	3
HIST 611	Studies in American History	3
HSS 675	Health Promotion and Disease Prevention at the Individual Level	3
HSS 676	Community Health Promotion and Disease Prevention	3
HSS 697	Special Topics in Health and Sport Sciences	1-3
LAW 931	Environmental Law	2-3
LAW 939	First Amendment Law	2
PHEH 620	Global Issues in Environmental and Occupational Health	3
PHEH 651	Advanced Environmental Health Services	3
PHPB 612	Health Communication: Theory and Practice	3
PHPB 722	Health Risk Communication	3
PLAN 673		3
PLAN 674		3
PLAN 676	Sustainable Social-Ecological Systems	3
POLS 639	Seminar in International Relations	3
SOC 710	Statistics II	3

Interdisciplinary Studies: Specialization in Bioinformatics (PhD)

Doctor of Philosophy in Interdisciplinary Studies, specialization in Bioinformatics

Unit: Graduate School (<http://louisville.edu/graduate/>) (GI)

Program Website (<https://louisville.edu/graduate/futurestudents/degree-programs-1/igp/>)

Academic Plan Code(s): IS_ _PHDINF

Program Information

The Interdisciplinary PhD Program in Bioinformatics (the Bioinformatics Program) trains students in bioinformatics for careers in research, education, and industry. Bioinformatics is a broad and diverse domain, ranging from management of biological research databases to computational approaches to biomedical modeling and data analysis.

The Bioinformatics Program focuses on those aspects of bioinformatics that reflect the research interests and experience of the Program's faculty. These include basic research in biostatistical methodology, computer science and mathematical modeling with applications to biochemistry, cell biology, and molecular biology. The following areas

have been identified and named by the Bioinformatics Program faculty to represent the focus application areas of the Program:

- Biomedical and Natural Sciences
- Computational Sciences
- Mathematics and Statistics

Students in the Bioinformatics Program specialize in one of the three focus application areas and graduate with cutting-edge expertise in this area and working knowledge in the other two focus application areas.

To earn the Doctor of Philosophy in Interdisciplinary Studies, specialization in Bioinformatics, a student is required to successfully complete the following:

- Core coursework in the focus application areas
- Required coursework in the student's area of specialization
- Elective courses in the student's area of specialization
- Qualifying examination
- Dissertation
- Presentation and defense of a dissertation

Upon successful completion of the written and oral portions of the qualifying examination, the examination committee will recommend acceptance into PhD candidacy. Successful completion of the dissertation and its presentation and defense is established by the approval of the student's dissertation committee and the approval of the chair of the sponsoring department and the program chair.

Admission Requirements

Applicants for interdisciplinary doctoral programs must present complete admission credentials and have an approved program of study in order to be formally admitted by the Graduate School (<http://louisville.edu/graduate/>).

- Complete graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>).
- A 3.25 grade point average.
- Competitive scores on the Quantitative, Verbal, Critical Thinking and Analytical portions of the Graduate Record Exam (GRE).
- Proof of a Baccalaureate Degree and official transcripts of all undergraduate and graduate course work.
- International students for whom English is not their primary language must show English language proficiency by one of the following:
 - TOEFL examination score 213 (computer-based test) or 79 (internet-based test)
 - IELTS test score of 6.5 or higher
 - Duolingo score of 105.
 - Demonstration of a degree awarded from an acceptable English language institution.
- Three letters of recommendation from individuals who are able to comment on the student's academic abilities and a potential for success in graduate studies.

Programs of Study

Course requirements for the Interdisciplinary PhD Degree Program in Bioinformatics consist of 16 core credit hours (that will be conditional based upon focus area) and 21 credit hours derived from a combination of required courses from a chosen focus area and electives from each of the three focus areas. Students with an appropriate background in

the biomedical and natural sciences may petition to substitute a course in either the Computational Sciences or Mathematics and Statistics focus for the core course BIOC 545 and a corresponding course in either the Computational Sciences or Mathematics and Statistics, thus maintaining 16 core credit hours. Following acceptance into a focus area, students will be required to complete three courses totaling at least nine hours from the declared focus area. At least four additional elective courses (12 credit hours) will be selected from available elective courses, with the provision that two elective courses must be selected in each of the other two focus areas. The Program of Study will be determined by the student and approved by both an advisor residing in a declared focus area department and the Executive Committee. The following tables list the required courses for the core as well as the required and elective courses in each of the focus areas. Students must accumulate at least nine (9) credit hours of dissertation.

Good standing requires that the student maintain a minimum 3.0 grade point average. Upon successful completion of the written and oral portions of the qualifying examination, the examination committee will recommend acceptance into PhD candidacy. Successful completion of the dissertation and its presentation and defense is established by the approval of the student's dissertation committee and the approval of the chair of the sponsoring department and the program chair.

Code	Title	Hours
Core Course Work		16
BIOC 545	Biochemistry I ^{1,2,3}	
	or BIOC 667 Cell Biology	
BIOC 667	Cell Biology ^{1,2,3}	
BIOC 630	Responsible Conduct of Research: Survival Skills and Research Ethics ¹	
CSE 619	Design and Analysis of Computer Algorithms	
	or CSE 632 Data Mining	
CSE 660	Introduction to Bioinformatics ¹	
PHST 750	Statistics for Bioinformatics	
Focus Area & Electives (see lists below)		21
Focus Area (minimum three courses) ⁴		
Electives (minimum four courses) ⁴		
Dissertation		9
Minimum Total Hours		46

¹ All courses are required.

² CHEM 645 may be substituted. Students may take either the BIOC 545/BIOC 547 or CHEM 645/CHEM 647 sequence but are not allowed to take the sequence BIOC 545/CHEM 647 or CHEM 645/BIOC 547.

³ Students with an appropriate background in the biomedical and natural sciences may petition to substitute a course in either the Computational Sciences or Mathematics and Statistics focus.

⁴ Courses selected with approval of advisor and the Executive Committee

⁵ At least one elective course must be selected from each of the other two focus areas other than the student's primary focus area.

Focus Area Electives

Code	Title	Hours
Elective Courses in Mathematics and Statistics		
MATH 505	Introduction to Partial Differential Equations	3
MATH 561	Probability ¹	3
PHYS 565	Advanced Computational and Numerical Methods in Physics	3
PHYS 625	Statistical Mechanics	3
MATH 636	Mathematical Modeling II	3
PHST 661	Probability ¹	3
PHST 662	Mathematical Statistics ¹	3
MATH 562	Mathematical Statistics ¹	3
MATH 681	Combinatorics and Graph Theory I	3
MATH 682	Combinatorics and Graph Theory II	3
PHST 682	Multivariate Statistical Analysis	3
PHST 691	Bayesian Inference and Decision	3
PHST 710	Advanced Statistical Computing I	3
PHST 724	Advanced Clinical Trials	3
PHST 762	Advanced Statistical Inference	3
PHST 751	High-throughput Data Analysis	3
PHST 752	Statistical Genetics	3
PHST 780	Advanced Nonparametrics	3
PHST 781	Advanced Linear Models	3
PHST 782	Generalized Linear Models	3

¹ Credit only for one: MATH 561/PHST 661; MATH 562/PHST 662

Code	Title	Hours
Elective Courses in Biomedical and Natural Sciences		
BIOL 542	Gene Structure and Function - WR (http://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
BIOL 569	Evolution	3
BIOC 680	Biomolecular Interactions	2
BIOC 611	Techniques in Biomolecular Interactions	4
ASNB 614	Molecular Neuroscience	4
BIOC 647	Advanced Biochemistry II ¹	4
CHEM 647	Advanced Biochemistry II	4
BIOC 661	Molecular Mechanisms of Toxicology	3
BIOC 668	Molecular Biology	4

¹ Credit only for one: CHEM 645/BIOC 645, CHEM 647/BIOC 647. Students may take either the BIOC 545/BIOC 547 or CHEM 645/CHEM 647 sequence but are not allowed to take the sequence BIOC 545/CHEM 647 or CHEM 645/BIOC 547.

Code	Title	Hours
Elective Courses in Computational Sciences		
CSE 625	Parallel Programming	3
CSE 619	Design and Analysis of Computer Algorithms	3
CSE 622	Simulation and Modeling of Discrete Systems	3
CSE 627	Digital Image Processing	3
CSE 628	Computer Graphics	3

CSE 629	Distributed System Design	3
CSE 630	Advanced Databases	3
CSE 632	Data Mining	3
CSE 641	Medical Imaging Systems	3

Interdisciplinary Studies: Specialization in Translational Bioengineering (PhD)

Doctor of Philosophy in Interdisciplinary Studies, specialization in Translational Bioengineering

Unit: Graduate School (<http://louisville.edu/graduate/>) (GI)

Program Webpage (<https://louisville.edu/translational-bioengineering/>)

Academic Plan Code(s): IS_PHDTBE

Program Information

The Interdisciplinary Studies in Translational Bioengineering (ISSTBE) PhD program is designed to provide multidisciplinary training in translational bioengineering preparing students to lead research and development in academia, industry and governmental agencies and/or to advance bioengineering technologies through start-up companies as entrepreneurs or within established biomedical companies. This program is a collaborative effort between J.B. Speed School of Engineering, the School of Medicine, the School of Dentistry, and the College of Business.

In this PhD program, students will have the opportunity to pursue graduate-level training in one of three tracks:

- Traditional Bioengineering Research
- Clinical Translational Research
- Advancement of Bioengineering Technologies through Entrepreneurship

Students must also choose one of the following concentration areas:

- Bioelectronics and Biomedical Devices
- Bioimaging and Biocomputational Modeling
- Biomechanics and Rehabilitation
- Molecular and Tissue Engineering

Students will initially be assigned an advisor to aid in course selection, to identify a primary research mentor and to choose a laboratory where they will conduct their research. Dissertation committee members will be assembled from participating faculty in the Schools of Engineering, Dentistry or Medicine, or the College of Business, representing opportunities to conduct research within a broad range of bioengineering topics and/or develop technology for a wide variety of clinical applications. Students who successfully complete the program will demonstrate excellence in designing and conducting research leading to an intellectual contribution to the field, demonstrate in-depth knowledge of their concentration area and associated scientific literature, have an understanding of the clinical relevance and ethical implications of their research, have the ability to critically analyze, evaluate and interpret research methods and findings, and have the ability to effectively communicate knowledge of their concentration area.

Admission Requirements

The Graduate School has rigorous standards for admission into doctoral programs, and those standards apply to the ISSTBE PhD program as well. Applicants must meet Graduate School admission requirements along with additional program requirements.

Applicants must, as a minimum, have completed a bachelor's degree in Engineering or Medical Physics from an accredited program with a 3.25 cumulative grade point average to be considered for admission. The ideal applicant will have completed a master's degree in engineering (MS or MEng) at the time of application.

Applicants must submit the following:

- Graduate Application (<http://louisville.edu/graduate/apply/>)
- Official transcripts of all college-level courses
- Three letters of recommendation
- A written statement by the applicant describing previous experience related to bioengineering
- A statement as to how the PhD ISSTBE will allow them to fulfill their career goals as identified by their focus area of interest
- Students whose native language is non-English or degree is from a non-US accredited institution are required to submit TOEFL scores (administered by the Educational Testing Service). A minimum TOEFL score of 79 or higher on the internet-based test is required. Alternatively, a minimum of 6.5 on the International English Language Testing System will be accepted or a Duolingo score of 105.
- Resume/CV required
- Optional Graduate Record Exam (GRE).

Program Requirements

To earn the Doctor of Philosophy in Interdisciplinary Studies with a specialization in Translational Bioengineering (ISSTBE), students are required to successfully complete the following:

- 47 credit hours of course work beyond their bachelor's degree (18 Core credit hours, nine (9) Concentration credit hours, 20 Specialization credit hours)
- Participate in the Bioengineering Seminar Series (75 percent attendance rate and one presentation/year as a Doctoral Candidate)
- Pass the Preliminary Examination
- Pass the Comprehensive Examination
- Successfully defend a dissertation
- Submit three or more peer-reviewed journal papers representing their original dissertation research

Coursework

Code	Title	Hours
Core Requirements		18
BE 601	Bioengineering Seminar	
BE 603	Bioengineering Research Ethics	
BE 621	Bioinstrumentation	
BE 654	Advanced Physiology for Engineers	
BE 695	Bioengineering Research Design & Methods	
ME 565	Advanced Engineering Mathematics I	
Concentration Area - nine (9) credit hours in one of the following areas		9

Molecular and Tissue Engineering

BE 553	Nanoscale Bioengineering: Application and Methodology of Nanobiomaterials in Bioengineering
BE 552	Introduction to Tissue Engineering
BE 605	Tissue and Molecular Biology Techniques Laboratory
BE 650	Advanced Biomaterials
BIOC 611	Techniques in Biomolecular Interactions
BIOC 668	Molecular Biology
BIOC 680	Biomolecular Interactions

Bioimaging and Biocomputational Modeling

BE 542	Medical Image Computing
BE 540	Machine Learning in Medicine
BE 685	Modeling of Biological Phenomena
BE 640	Computational Methods for Medical Image Analysis
CSE 622	Simulation and Modeling of Discrete Systems
CSE 627	Digital Image Processing

Bioelectrical and Biomedical Devices

BE 524	LabVIEW for Bioengineers
BE 581	Advanced Computer-Aided Design and Manufacturing for Bioengineers
BE 611	Cardiovascular Dynamics
BE 650	Advanced Biomaterials
BE 683	Artificial Organs
ECE 543	Fundamentals of Microfabrication and MEMS
ME 640	Optimum Design Methods
ME 647	Advanced Design Methods

Biomechanics and Rehabilitation

BE 630	Biomechanical Computer Modeling and Simulation of Human Movement
ME 651	Kinematics and Kinetics of Human Movement
BE 611	Cardiovascular Dynamics
BE 639	Injury Biomechanics
BE 658	Rehabilitation Engineering and Assistive Technology
ME 650	Biofluid Mechanics
ME 652	Advanced Human Biodynamics
ME 638	Computational Methods in Fluid Flow and Heat Transfer

Specialization Area Elective Coursework (see below)	20
Minimum Total Hours	47

Specialization Area Guided Electives

Courses in Specialization must be unique from those taken to fulfill the Concentration Requirement, and must follow either Track A, B or C below. Students must work with their advisor to establish a Plan of Study for Specialization Courses. All Specialization courses must be approved by the student's advisor prior to registration.

Track A

Traditional Bioengineering Research PhD: 18 credit hours from those listed below with a minimum of six (6) credit hours in engineering courses + Teaching Practicum (two (2) credit hours)

Track B

Clinical-Translation Research PhD: 12 credit hours from list below designated as BIOC, ASNB, PSYC, BIOL, MBIO, OBIO, OBIO or EXP; remaining six (6) credit hours from BE, CECS, ECE, IE, or ME + Clinical Practicum (two (2) credit hours).

Track C

Advancing Bioengineering Technologies through Entrepreneurship PhD: 12 credit hours from list below designated as ENTR or IMBA; remaining six (6) credit hours from BE, CECS, ECE, IE, ME + Teaching Practicum (two (2) credit hours).

Code	Title	Hours
Guided Electives		20
ASNB 602	Fundamentals of Neuroscience	4
ASNB 614	Molecular Neuroscience	4
ASNB 617	Seminar on Developmental Neurobiology	3
ASNB 671	General and Oral Histology	5
BE 522	Biomedical Acoustics	3
BE 524	LabVIEW for Bioengineers	3
BE 540	Machine Learning in Medicine	3
BE 542	Medical Image Computing	3
BE 552	Introduction to Tissue Engineering	3
BE 553	Nanoscale Bioengineering: Application and Methodology of Nanobiomaterials in Bioengineering	3
BE 581	Advanced Computer-Aided Design and Manufacturing for Bioengineers	3
BE 600	Advanced Topics in Bioengineering	1-6
BE 605	Tissue and Molecular Biology Techniques Laboratory	3
BE 611	Cardiovascular Dynamics	3
BE 630	Biomechanical Computer Modeling and Simulation of Human Movement	3
BE 639	Injury Biomechanics	3
BE 640	Computational Methods for Medical Image Analysis	3
BE 650	Advanced Biomaterials	3
BE 658	Rehabilitation Engineering and Assistive Technology	3
BE 683	Artificial Organs	3
BE 692	Bioengineering Clinical Rotation	2
BE 693	Independent Study in Bioengineering	1-6
BIOC 611	Techniques in Biomolecular Interactions	4
BIOC 645	Advanced Biochemistry I	4
BIOC 668	Molecular Biology	3-4
BIOC 680	Biomolecular Interactions	2
CSE 535	Database Systems	3
CSE 545	Artificial Intelligence	3
CSE 619	Design and Analysis of Computer Algorithms	3
CSE 622	Simulation and Modeling of Discrete Systems	3
CSE 627	Digital Image Processing	3
CSE 628	Computer Graphics	3
CSE 632	Data Mining	3
CSE 633	Computer Vision	3
CSE 635	Data Mining with Linear Models	3

CSE 660	Introduction to Bioinformatics	3
ECE 520	Digital Signal Processing	3
ECE 521	Digital Signal Processing Laboratory	1
ECE 523	Introduction to Biometrics	3
ECE 543	Fundamentals of Microfabrication and MEMS	3
ECE 544	Microfabrications/MEMS Laboratory	1
ECE 564	Fundamentals of Autonomous Robots	3
ECE 565	Fundamentals of Autonomous Robots Lab	1
ECE 614	Deep Learning	3
ECE 661	Sampled-Data Control Systems	3
ECE 662	Introduction to Optimum Control	3
ECE 676	Foundations of Polymer MEMS	3
ENTR 600	Introduction to Entrepreneurship	3
IE 563	Experimental Design in Engineering	3
IMBA 652	Venture Accelerator I	3
IMBA 654	Venture Accelerator II	3
IMBA 664	Venture Accelerator III	3
MBIO 601	Molecular Microbiology	2
MBIO 602	Immunology	3
MBIO 610	Methods and Analysis in the Biomedical Sciences	2
MBIO 618	Topics in Advanced Microbiology	1-3
ME 566	Advanced Engineering Mathematics II	3
ME 638	Computational Methods in Fluid Flow and Heat Transfer	3
ME 640	Optimum Design Methods	3
ME 647	Advanced Design Methods	3
ME 650	Biofluid Mechanics	3
ME 651	Kinematics and Kinetics of Human Movement	3
ME 652	Advanced Human Biodynamics	3
ME 671	Advanced Fluid Mechanics	3
ME 675	Advanced Topics in Mechanical Engineering	1-6
OBIO 611	Craniofacial Osteology	1-3
OBIO 612	Cranioaxillofacial Diagnostic Imaging	2-4
OBIO 617	Advanced Oral Pathology	1
OIID 604	Oral Microbiology	3

Dissertation Committee

By the end of the first semester, it is expected that the student has identified their Dissertation Chair. The student (under the guidance of his or her advisor) must select a Dissertation Committee of five or more persons, for approval by the Program Director. The committee must consist of the student's advisor from the Department of Bioengineering (who will act as the Dissertation Committee Chair), at least two additional faculty members from within the Department of Bioengineering, at least one faculty member from a partnering School or College, and at least one additional faculty member from outside the Department of Bioengineering.

Preliminary Examination

The PhD Preliminary Examination will be offered once per year and is to be taken by students upon completion of Core courses (with the exception of Bioengineering Seminar credits) and Concentration Area courses. The Preliminary Examination includes written and oral components. The written portion of the exam gauges student competency in fundamental bioengineering topics covered in their

courses. ISSTBE affiliated faculty will submit and grade questions in their respective areas of expertise for the written portion of the Preliminary Examination. The oral portion of the examination is a formal presentation comprised of the student's critique of a peer-reviewed journal paper selected from the student's area of concentration, delivered to the ISSTBE Program Director and a subset of faculty with expertise in the respective concentration having Graduate Faculty status. Students are allowed no more than two opportunities to take the Preliminary Examination (oral or written components).

Comprehensive Examination

To qualify for candidacy, students must pass the Preliminary Examination, maintain a minimum GPA of 3.0 and pass the Comprehensive Examination. The Comprehensive Examination requires the student to prepare a written dissertation research proposal (following an external funding agency format) that is presented, defended and approved by their Dissertation Committee. The Dissertation Committee approval constitutes passing both the written and oral portions of the Comprehensive Examination. The written portion is comprised of the student's dissertation proposal document and the oral portion consists of the student's presentation and defense of their dissertation proposal, including response to questions posed by their Dissertation Committee. The Dissertation Committee will evaluate written and oral performance on the Comprehensive Examination separately as a Pass, Conditional Pass, or Fail. Students receiving a Conditional Pass must satisfactorily meet conditions set forth by the Dissertation Committee in order to Pass. Students failing either or both portions of the Comprehensive Examination will be permitted to repeat the respective portion(s) once.

Students must meet with their Dissertation Committee at least once per year during the remainder of their PhD program, culminating in the Dissertation Defense.

Interdisciplinary Studies: Specialization in Translational Neuroscience (PhD)

Doctor of Philosophy in Interdisciplinary Studies, specialization in Translational Neuroscience

Unit: Graduate School (<http://louisville.edu/graduate/>) (GI)

Program Webpage (<https://louisville.edu/translational-neuroscience/>)

Academic Plan Code(s): IS_ _PHDSTN

Program Information

The Interdisciplinary Program in Translational Neuroscience is a PhD program designed to provide broad training in neuroscience to prepare students for careers in academic, clinical and translational research involving the nervous system including disease, trauma, and developmental disorders.

Students will be assigned advisors initially to help them with course selection, choosing laboratories to rotate in and finding research mentors. Committee members will be assembled from the participating professors/lecturers representing a broad range of both basic and clinical Neuroscience. Individualized curricula will emphasize basic genetic, molecular, cellular, and/or systems mechanisms that underlie a wide range of neurological and neuropsychiatric diseases and disorders.

Students who successfully complete the program will gain a strong academic background in the neurosciences and intellectual mastery of relevant scientific literature with a major emphasis either in the

system/cognitive or cellular/molecular areas. They will gain a good understanding of the ethical issues involved in conducting translational research and receive outstanding training in how to conduct basic science research and/or clinical research with patients.

Areas of focus include:

- Spinal cord injury, motor systems, and rehabilitation
- Vision, retina, and visual pathways
- Sensory systems, autonomic nervous system, and pain
- Developmental neurobiology
- Behavioral & cognitive neuroscience
- Neuropharmacology and neurochemistry

Admission Requirements

- a. Complete graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) to the Graduate School (apply by December 15)
- b. 3.25 grade point average
- c. Three letters of recommendation from individuals who are able to comment on the student's academic abilities and potential for success in graduate studies
- d. Proof of a Baccalaureate Degree and official transcripts of all undergraduate and graduate course work
- e. International students for whom English is not their primary language must show English language proficiency by one of the following:
 - i. TOEFL examination score of 213 (computer-based test), or 79 (internet-based test/iBT)
 - ii. IELTS test score of 6.5 or higher
 - iii. Duolingo score of 105
 - iv. Demonstration of a degree award from an acceptable English language institution.

Program Requirements

To earn the Doctor of Philosophy in Interdisciplinary Studies: Specialization in Translational Neuroscience, a student is required to successfully complete the following:

- Core Courses
- Other required and elective courses as approved
- Qualifying examination
- Laboratory Rotations
- Original Investigation
- Dissertation and defense

Coursework

Code	Title	Hours
Core Courses		
ASNB 602	Fundamentals of Neuroscience	4
NSCI 600	Translational Neurosciences	3
BIOC 630	Responsible Conduct of Research: Survival Skills and Research Ethics	1
BIOL 650	Advanced Biostatistics	4
ASNB 606	Anatomy Seminar	1
Recommended and Elective Courses		17
<i>Recommended Courses</i>		

ASNB 605	Human Embryology	
ASNB 617	Seminar on Developmental Neurobiology	
ASNB 614	Molecular Neuroscience	
ASNB 666	Synaptic Organization of the Central Nervous System	
Electives		
PSYC 643	Principles of Neuroscience	
BIOL 611	Advanced Behavioral Endocrinology	
PSYC 642	Behavioral Neuroscience	
ASNB 601	Gross Anatomy	
ASNB 605	Human Embryology	
MBIO 602	Immunology	
BIOC 547	Advanced Biochemistry II or CHEM 547: Biochemistry II	
PHYS 605	Theoretical Mechanics	
Laboratory Rotations (at least two recommended, see below)		6
GS 699	Interdisciplinary Research	
Research		
GS 799	Doctoral Exam Prep (see below)	
Dissertation/Defense		
Minimum Total Hours		36

Laboratory Rotations

It is recommended that each student will complete two rotations in different laboratories prior to the start of his/her third semester. The rotations will expose the student to different approaches and areas of research and will help the student to choose a laboratory for his/her dissertation research. Rotations will count as a three (3) credit hour course (GS 699 Interdisciplinary Research). Rotations are graded on a pass/fail basis and a brief written rotation reports will be expected from each host investigator indicating a pass or fail grade.

Mentor and Advisory Committee

Once a student selects a mentor, he or she will form an Advisory Committee consisting of the mentor plus four additional members of the program faculty. The faculty members composing the Advisory Committee will represent a minimum of three different participating departments and include at least one faculty member with primary clinical expertise relevant to the student's research area. The Advisory Committee may be reformulated with the permission of the Executive Committee as the student progresses towards completion of the degree.

Research Hours

Upon completion of the mandatory course work, laboratory rotations and mentor selection, research hours are taken as Original Investigation (GS 699 Interdisciplinary Research) until and after the student enters candidacy by successfully completing his/her Research Proposal and Qualifying exam.

Research Proposal and Qualifying Examination

Upon completion of course work, each student is required to prepare a Research Proposal that will be presented and defended before the end of the fall semester of year three. The Research Proposal will consist of an NIH F31 format grant proposal that describes the student's planned research.

Preparation and defense of the proposal will consist of the following steps:

- Develop a specific aims page and outline of the proposed experiments and present this aims page to the Advisory Committee for approval.
- Based on the approved specific aims page and outline, prepare a Research Proposal in the F31 format.
- Distribute the Research Proposal to the Advisory Committee at least two weeks before the presentation and defense.
- Present the proposal in a 30-40 minute seminar, plus a question and answer period, attended by all the members of the Advisory Committee and other faculty/trainees from representative departments.
- Appropriately answer any questions from the committee members regarding the proposal and defense.
- Appropriately answer one written question from each committee member presented to the student during the question/answer period of the proposal presentation. These questions should be prepared by each committee member prior to the defense and should be designed to explore the various clinical/translational/basic science aspects of the proposed work and the underlying biological concepts. Each committee member will indicate on the document if the student answers the member's question appropriately. If not, the student will be given two weeks to prepare a one-to-two-page written answer that will be submitted, along with the question, to that committee member. The committee member will submit both the question and answer to the mentor indicating whether or not the student's answer was appropriate and sufficient.

Overall success or failure will be determined by majority vote of the committee.

A student who fails the Research Proposal and Qualifying Examination will have two months to prepare for a second presentation with written questions that will be presented to the committee only. Failure on the second attempt will result in a recommendation of dismissal from the program. Upon successful completion, a Proposal Defense/Qualifying Examination form will be filled out by the mentor stating the outcome and will be signed by each member of the Advisory Committee. This evaluation form will become part of the student's permanent academic record.

Annual Presentations

Each student who has completed class work is required to give a research update presentation to either the home department of the mentor or as part of the research update seminar series for the Kentucky Spinal Cord Injury Research Center. Notification of the seminar should be dispersed to the entire Neuroscience community.

Dissertation Defense

The candidate must complete all requirements for the degree of Doctor of Philosophy within four calendar years after passing the qualifying examination. The dissertation should contain data sufficient for approximately three publishable manuscripts. Upon completion of a draft of the student's dissertation and prior to scheduling of his/her defense, the student must distribute a copy to each Advisory Committee member. The committee will have two weeks to read and approve the completed draft of the dissertation or recommend major changes that need to be completed prior to scheduling a defense date.

Once the dissertation is approved by the committee, the student will schedule a Dissertation Defense and distribute an edited copy to each committee member. The Graduate School requires that an announcement of the defense be made at least two weeks prior to the scheduled date. The defense will consist of a public oral presentation (approximately 45 minutes in length) of the research completed during the student's graduate training. Non-committee members in the audience will be allowed to ask questions. The general audience will then be dismissed and the student will defend the dissertation before the committee. Upon completion, a written report stating the outcome of the defense will be completed by each committee member and will become a permanent part of the student's record.

Approval by the majority of Advisory Committee members will signify successful completion of the PhD degree.

Latin American and Latino Studies (CERT)

Graduate Certificate in Latin American and Latino Studies

Unit: College of Arts and Sciences (<http://louisville.edu/artsandsciences/>) (GA)

Program: Latin American and Latino Studies (<http://louisville.edu/latinamericanstudies/>)

Academic Plan Code(s): LAS_CLA

Program Information

The Graduate Certificate in Latin American and Latino Studies (LALS) is an interdisciplinary program, involving multiple departments within the College of Arts and Sciences, which provides a specialized concentration focusing on Latin America and Latinos in the United States. This program, housed within the College of Arts and Sciences, offers students a wide range of course options that examine Latin American societies from the perspective of their history, social structure, economic and political structures, literature, art, and culture.

The 15 credit hour program may be completed as a stand-alone program or in conjunction with other graduate programs.

Admissions Requirements

Applicants need to have completed an undergraduate baccalaureate degree granted by a United States institution of higher education or its equivalent in another country. To be accepted into the LALS Graduate Certificate Program, students must meet the standard criteria for general admission to the University of Louisville Graduate School, and supply all standard documentation required for admission.

Students wishing to pursue the graduate certificate in conjunction with a graduate degree program in another University of Louisville department should first apply and be admitted to the degree program before applying for admission to the LALS Graduate Certificate Program. The Director of the Latin American and Latino Studies Program will interview each student as part of the application process and an Admissions Committee will review applications and decide if a student may be recommended to the LALS Graduate Certificate Program.

Potential students should complete an online application for graduate programs (<http://louisville.edu/graduate/apply/>) at the University of Louisville.

Program Requirements

The graduate certificate in Latin American and Latino Studies requires at least 15 credit hours of graduate level coursework. Three of the five required courses must be taken at the 600 level. Coursework toward the graduate certificate in LALS may also count toward the student's graduate degree.

Students also must meet a minimum language requirement of three hours of previous coursework in Spanish or Portuguese at the 200 level or above, or demonstrate equivalent language proficiency.

Code	Title	Hours
At least one of the following:		
LALS 680	Issues in Latin American and Latino Studies	3
SPAN 670	Special Topics	
POLS 647	Seminar in Latin America	
HIST 503	Advanced Studies in History	
PAS 510	Advanced Topics in Afro-American and African Studies	

Four courses with a substantial Latin American content from at least three different disciplines 12

These may include the following disciplines but could include others if a course is offered with a substantial Latin American content: Anthropology, Art History, History, Humanities, Linguistics, Modern Languages, Pan-African Studies, Political Science, Portuguese, and Spanish, and Women's and Gender Studies.^{1,2}

Minimum Total Hours

15

¹ Students may not apply 500-level courses taken for undergraduate credit to the LALS graduate certificate.

² Substitutions may be made at the discretion of the Director of Latin American and Latino Studies. Additional courses with substantial Latin American content, which are not listed below, may also be taken to fulfill the requirements for the LALS Graduate Certificate. This list is updated regularly on the LALS website (<http://louisville.edu/latinamericanstudies/>).

Managerial Analytics (CERT)

Graduate Certificate in Managerial Analytics

Unit: College of Business (<https://business.louisville.edu>)

Program Website (<http://louisville.edu/online/programs/certificate-programs/online-managerial-analytics-certificate/>)

Academic Plan Code(s): MAN_CGR, MAN_CGRO

Program Information

This program can be completed entirely online (<http://louisville.edu/online/programs/certificate-programs/online-managerial-analytics-certificate/>).

The Managerial Analytics Certificate is a twelve (12) credit hour certificate that provides business professionals with the skills to thrive in a data-driven environment. The need for skilled professionals in the area of managerial analytics has become very acute. This certificate offers an efficient and effective way to address the need for analytics talent by allowing current employees to retool themselves without having to obtain a graduate degree.

Students completing the stand-alone Managerial Analytics Certificate may count the twelve (12) credit hours toward their MBA degree.

Students in the full-time, professional, innovation, and online MBA degree programs are able to complete the certificate within their cohort flight plan at no additional tuition charge or program credit hour requirements.

Admission Requirements

Students must have a bachelor's degree from an accredited university and a minimum undergraduate GPA of 2.5 to be admitted to the Managerial Analytics certificate program.

GMAT/GRE scores are not required for admission to the program.

Complete a graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>).

Program Requirements

Code	Title	Hours
Students must take three (3) credit hours from the list below:		
MBA 631	Introduction to Statistics and Data Analytics (3 credit hours)	3
or ANLY 631	Introduction to Statistics and Data Analytics	
MBA 602	Decision Analysis (1.5 credit hours)	
MBA 651	Introduction to Business Analytics (1.5 credit hours)	
MAC 668	Statistical Analysis (3 credit hours)	
Students must take nine (9) credit hours from the list below:		
ANLY 610	Database	1.5
ANLY 615	Artificial Intelligence	1.5
ANLY 620	Advanced Business Analytics	1.5
ANLY 625	Spreadsheet Modeling for Analytics	1.5
ANLY 630	Blockchain	1.5
ANLY 635	Storytelling with Data	1.5
Minimum Total Hours		12

Materials and Energy Science and Engineering (MS)

Master of Science in Materials and Energy Science & Engineering

Unit: Speed School of Engineering (<https://engineering.louisville.edu/>) (GS)

Program Website (<https://engineering.louisville.edu/academics/areasofstudy/materials-and-energy-science/>)

Academic Plan Code: MESEMS, MESEMS_O

Program Information

This program can be completed in a traditional classroom format or entirely online (<http://louisville.edu/online/programs/masters/master-of-science-in-materials-and-energy-science-engineering/>).

The Master of Science in Materials and Energy Science & Engineering will offer advanced level training to provide students with in-depth knowledge of materials and energy science and engineering in areas such as materials science and engineering, materials chemistry and physics, processing, energy conversion and storage devices, and systems-level engineering. Student educational experiences will be enhanced by research opportunities in laboratories conducting basic and translational research on solar energy conversion, energy storage, biofuels and biomass conversion, solar fuels, materials characterization,

and advanced energy materials. The MS in MESE will prepare students for career tracks in industry such as semiconductor/opto-electronics, catalysts and energy. This degree track will allow students to pursue entrepreneurialism and join government and corporate labs and provides a strong foundation for those wishing to pursue doctoral studies in their respective disciplines.

Degree Requirements

The program of study must be completed with a 3.00 GPA or better for all graduate courses used to satisfy degree requirements. Additionally, the program of study must be completed with a 3.00 GPA or better for all academic work attempted in graduate studies.

The requirements for the Master of Science degree are discussed in more detail in the Degree Requirements (<http://catalog.louisville.edu/archive/2023-2024/graduate/general-policies-procedures-requirements/degree-requirements/>) section of this catalog.

Admission Standards

The admission standards for the Master of Science program in Materials and Energy Science & Engineering are as follows:

- a. All admission applications for the program shall include:
 - i. A completed graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) for the Graduate School,
 - ii. An application fee,
 - iii. A current resume,
 - iv. Written interest statement describing what motivated you to apply to the MESE program, including previous experience in the field and how this degree will help you fulfill your career goals.
 - v. At least two letters of recommendation, and
 - vi. Official transcript(s) for all previous post-secondary coursework. All transcripts not in English must be certified as authentic and translated verbatim into English.
- b. The minimum requirement for admission is the Bachelor's degree in Engineering from an ABET-accredited program or an equivalent bachelor's degree in Physics or Chemistry from an accredited university
- c. The successful applicant will typically have an undergraduate grade point average of 3.0 or above (on a 4.00 scale).
- d. International students whose primary language is not English must show English language proficiency by either TOEFL/IELTS/Duolingo score or demonstration of a degree awarded from an acceptable English language institution. The successful applicant will typically have a TOEFL score of 80 or higher or overall IELTS score of 6.5 or higher or a Duolingo score of 105 or higher.

Program Requirements

Remedial work may be specified for those applicants who, in the opinion of the faculty, do not have a sufficient background. Remedial courses do not count towards the degree.

The minimum curricular requirements for the master's program are:

Code	Title	Hours
MS in Materials and Energy Science & Engineering		
Program Courses		
MESE 600	Energy Science and Engineering	6

MESE 601	Materials Science and Engineering	
Choose 3 of the following Fundamental MESE Courses:		9
MESE 610	Materials Characterization: Microscopy & Diffraction	
or ME 675	Advanced Topics in Mechanical Engineering	
CHEM 659	Materials Chemistry and Methods	
PHYS 575	Solid State Physics	
or ECE 542	Semiconductor Device Fundamentals	
CHEM 621	Electroanalytical Chemistry	
ME 675	Advanced Topics in Mechanical Engineering (Computational Modeling of Nanomaterials)	
Choose 2 of the following Energy Processing Courses:		6
CHE 581	Chemical Vapor Deposition and Processing	
MESE 622	Roll to Roll Processing	
CHE 655	Processing for Additive Manufacturing	
or IE 600	Additive Manufacturing Processes	
ECE 543	Fundamentals of Microfabrication and MEMS	
Choose 2 of the following Energy Conversion Courses:		6
MESE 612	Photovoltaics and Solar Fuels	
MESE 614	Biomass Processing and Biofuels	
MESE 616	Energy Storage Systems	
or ME 572	Energy Storage Systems	
MESE 618 or ECE 531	Power Electronics	
MESE 619	Industrial Catalysis	
Choose 1 of the following Systems Engineering Courses:		3
MESE 640	Entrepreneurship in Renewable Energy	
MESE 642	Techno-Economic Analysis and Energy Policy	
MESE 644	Smart Manufacturing	
MESE 690	Master's Project	

Minimum Total Hours **30**

The Master of Science degree must be completed with a 3.00 GPA or better for all graduate courses used to satisfy degree requirements. Additionally, the master of science degree must be completed with a 3.00 GPA or better for all academic work attempted in graduate studies.

¹ The project can be replaced with an external internship or practicum opportunity. Faculty advisors will assist in developing plans for MESE 690 completion.

² Courses must be chosen so that at least one-half of the credits counted toward the degree are 600-level.

Mathematics (MA)

Master of Arts in Mathematics

Unit: College of Arts and Sciences (<http://louisville.edu/artsandsciences/intro/>) (GA)

Department: Mathematics (<https://louisville.edu/math/>)

Program Webpage (<https://louisville.edu/math/graduate/>)

Academic Plan Code(s): MATHMA, MATHMA_ACC

Program Information

The University of Louisville Department of Mathematics is a research-oriented department that prides itself on delivering first-rate graduate instruction. There is a broad range of courses and ample opportunities to interact with faculty. The Department also maintains an active colloquium

series with talks given by visiting mathematicians, statisticians and scientists.

Appropriate preparation for a Master of Arts in Mathematics is undergraduate coursework equivalent to a major in mathematics from an accredited university. This should include a one-year course in either analysis or abstract algebra, equivalent to MATH 501-MATH 502 and MATH 521-MATH 522 at the University of Louisville. Candidates who have not taken both must complete them by the end of the second year of their MA program.

Accelerated BA/BS-MA Option in Mathematics

Students must apply for admission to the program no later than the end of their junior year to be eligible enroll in graduate coursework in their final year of the program and must have completed MATH 205, MATH 206, MATH 301, and MATH 325, or equivalent courses, prior to application.

Applicants must have a minimum overall GPA of 3.5, and minimum GPA of 3.66 in mathematics courses. As part of the combined degree, students must complete MATH 405 and at least four of the following: MATH 501, MATH 502, MATH 521, MATH 522, MATH 561, MATH 562, or MATH 581, including at least one sequence from among these courses.

The student may take a maximum of nine (9) credit hours for graduate credit, which will also apply to the requirements for the baccalaureate degree in Mathematics. All 600-level courses numbered 689 or below qualify, as do 500-level courses when completed in accord with the stipulations for graduate credit outlined in the syllabus.

Admission Requirements

Apply online (<http://louisville.edu/graduate/apply/>) via the Graduate School.

Complete applications require the following:

- Complete online application form (<http://louisville.edu/graduate/apply/>) along with paid application fee.
- Cover letter to math department including any information you believe will help process your application. **Please indicate in this letter whether you are interested in a GTA position**, for example.
- Transcripts (an official copy for each undergraduate institution attended. UofL transcripts are automatically submitted).
- Letters of recommendation (<https://louisville.app.box.com/s/w9jkkbu3cg10q7jtbwxo5rdkn2d1mjaa/>) (at least two, preferably three; electronic recommendations preferred).
- Recent** (within three years) GRE scores (only the general exam is required).
- All applicants for whom English is a second language must also submit official TOEFL scores of 79 or higher on the internet-based test, 213 or higher on the computer-based test for verification of English proficiency. English proficiency can also be met by submitting official IELTS scores of at least 6.5 overall band score from the academic module exam or Duolingo score of 105.

Degree Requirements

- Candidates must complete a program of study approved by the department. All courses (maximum of twelve (12) credit hours total)

taken outside the Department of Mathematics must have prior departmental approval.

- b. All students must complete a minimum of 30 credit hours of non-thesis graduate credit, including at least 15 credit hours in Mathematics (MATH) courses numbered 601-689. Non-Thesis Option students must complete at least one full-year sequence in Mathematics (MATH) courses numbered 601-689; Thesis Option students are required to complete at least two full-year sequences in Mathematics (MATH) courses numbered 601-689.
- c. Students must satisfy one of the following three requirements:
- **Master's Level Examination Option:** Pass written examination in three areas of mathematics chosen from a list prepared by the department. At most, two attempts are allowed. Examinations will be approved and administered by the departmental Graduate Studies Committee.
 - **Thesis Option:** Write a thesis on an advanced topic in the mathematical sciences. A total of two full-year sequences among courses numbered 601 through 689 must be completed.
 - **PhD Qualifier Option:** Pass two qualifier examinations for the departmental PhD Program. These examinations need not be taken together and each may be attempted at most twice.
- d. Students choosing the Thesis Option must pass a final oral examination described under Requirements for the Master's Degree (<http://catalog.louisville.edu/archive/2023-2024/graduate/general-policies-procedures-requirements/degree-requirements/>).

Thesis Option Coursework

Code	Title	Hours
Core Courses		12
Choose two full-year sequences from the following:		
MATH 601 & MATH 602	Real Analysis I Real Analysis II	
MATH 621 & MATH 622	Algebra I Algebra II	
MATH 681 & MATH 682	Combinatorics and Graph Theory I Combinatorics and Graph Theory II	
MATH 635 & MATH 636	Mathematical Modeling I Mathematical Modeling II	
MATH 663 & MATH 664	Theory of Probability I Theory of Probability II	
MATH 667 & MATH 668	Statistical Inference Linear Statistical Modeling	
Non-Thesis Elective Courses ^{1,2}		18
Thesis Coursework (optional)		0-6
MATH 695	Thesis Guidance	
Minimum Total Hours		30-36

¹ All courses taken outside the Department of Mathematics must have prior departmental approval.

² Must include at least three (3) credit hours of Mathematics (MATH) coursework numbered 601-689 (see list below). May include up to twelve (12) credit hours of approved coursework outside of the department.

Non-Thesis Option Coursework

Code	Title	Hours
Core Courses		6
Choose one full-year sequences from the following:		
MATH 601 & MATH 602	Real Analysis I Real Analysis II	
MATH 621 & MATH 622	Algebra I Algebra II	
MATH 681 & MATH 682	Combinatorics and Graph Theory I Combinatorics and Graph Theory II	
MATH 635 & MATH 636	Mathematical Modeling I Mathematical Modeling II	
MATH 663 & MATH 664	Theory of Probability I Theory of Probability II	
MATH 667 & MATH 668	Statistical Inference Linear Statistical Modeling	
Elective Courses ^{4,5}		24
Minimum Total Hours		30

⁴ All courses taken outside the Department of Mathematics must have prior departmental approval.

⁵ Must include at least nine (9) credit hours of Mathematics (MATH) coursework numbered 601-689 (see list below). May include up to twelve (12) credit hours of approved coursework outside of the department.

MATH 601-689 Courses

Code	Title	Hours
Graduate Course List		
MATH 601	Real Analysis I	
MATH 602	Real Analysis II	
MATH 605	Functional Equations I	
MATH 606	Functional Equations II	
MATH 607	Seminar on Applied Analysis	
MATH 611	Complex Variables I	
MATH 612	Complex Variables II	
MATH 621	Algebra I	
MATH 622	Algebra II	
MATH 631	Group Theory	
MATH 633	Rings and Ideals	
MATH 635	Mathematical Modeling I	
MATH 636	Mathematical Modeling II	
MATH 641	Topology I	
MATH 642	Topology II	
MATH 663	Theory of Probability I	
MATH 664	Theory of Probability II	
MATH 667	Statistical Inference	
MATH 668	Linear Statistical Modeling	
MATH 670	Introduction to the Stochastic Calculus	
MATH 673	Actuarial Models I	
MATH 674	Actuarial Models II	
MATH 676	Actuarial Modeling I	

MATH 677	Actuarial Modeling II
MATH 681	Combinatorics and Graph Theory I
MATH 682	Combinatorics and Graph Theory II
MATH 683	Advanced Combinatorics and Graph Theory I
MATH 684	Advanced Combinatorics and Graph Theory II
MATH 687	Seminar on Discrete Mathematics

Mathematics, Applied and Industrial (PhD)

Doctor of Philosophy in Applied and Industrial Mathematics

Unit: College of Arts and Sciences (<http://louisville.edu/artsandsciences/intro/>) (GA)

Department: Mathematics (<https://louisville.edu/math/>)

Program Website (<https://louisville.edu/math/graduate/>)

Academic Plan Code(s): MATHPHD

Program Information

The University of Louisville Department of Mathematics is a research-oriented department that prides itself on delivering first-rate graduate instruction. There are a broad range of courses and ample opportunities to interact with faculty. The Department also maintains an active colloquium series with talks given by visiting mathematicians, statisticians and scientists.

The PhD program in Applied and Industrial Mathematics offers a blend of advanced mathematical and statistical knowledge with the experience to apply that knowledge. Students completing the program have a unique perspective from which they can see the whole of mathematics integrated with applied and industrial needs. A broad and rigorous mathematical core combined with customized application electives and an industrial internship prepares students with life-long career skills in teaching, research, and industry.

Prerequisites

Undergraduate coursework equivalent to a major in mathematics from an accredited university. This should include at least a one-year course in either analysis or abstract algebra, equivalent to MATH 501-MATH 502 and MATH 521-MATH 522 at the University of Louisville.

Candidates who have not taken both must complete the second in their program.

Dual Degree Program in Applied and Industrial Mathematics (PhD) and Biostatistics (MS)

Dual degrees in Biostatistics and Applied and Industrial Mathematics are offered by the College of Arts and Sciences and the School of Public Health and Information Sciences. Upon completion of the program, students will receive a PhD in Applied and Industrial Mathematics and a Master of Science in Biostatistics.

Admission Requirements

Interested applicants should have completed undergraduate coursework equivalent to a major in mathematics from an accredited university. This should include at least a one-year course in either analysis or abstract

algebra, equivalent to MATH 501-MATH 502 and MATH 521-MATH 522 at the University of Louisville.

Candidates who have not taken both sequences must complete the second in their program.

Prospective students can apply online (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>). Complete applications require the following:

- Graduate Application form along with paid application fee
- Cover letter to Mathematics department including any information you believe will help process your application. Please indicate in this letter whether you are interested in a GTA position, for example
- Transcripts (an official copy for each undergraduate institution attended. University of Louisville transcripts are automatically submitted)
- At least two letters of recommendation
- Recent (within three years) GRE scores (only the general exam is required)
- All applicants for whom English is a second language must also submit official TOEFL scores of 79 or higher on the internet-based test, 213 or higher on the computer-based test. English proficiency can also be met by submitting official IELTS scores of at least 6.5 overall band score from the academic module exam or official Duolingo overall score of 105. Students holding a bachelor's or advanced degree from an accredited institution in the United States may be exempt from this requirement.

For full consideration please submit complete applications by:

Spring admission deadline: November 1

Fall admission deadline: March 1

Late applications will be considered.

Dual Degree Program in Applied and Industrial Mathematics and Biostatistics Application Procedure

To be admitted to the program, the student is required to apply to and be accepted by both the Department of Mathematics and the Department of Bioinformatics and Biostatistics. A student seeking admission into this program must submit letters to both the Department of Mathematics and the Department of Bioinformatics and Biostatistics stating the intent to take advantage of the dual degree program, as well as their choice of the thesis or non-thesis option for the MS in Biostatistics. Students must submit two recent letters of recommendation with their letter of intent. Applicants will receive written notification stating whether their admission request has been approved or disapproved.

Students currently enrolled in the PhD in Applied and Industrial Mathematics program will need to submit complete application materials to the Department of Bioinformatics and Biostatistics for admission to the MS component of the dual degree, as well as notify his/her advisor in the Department of Mathematics of the intention to enter into the dual degree program. Letters of recommendation for admission to the MS program can be taken from the letters of recommendation written for admission to the PhD program, provided they have been written sufficiently recently.

Program Requirements

Doctor of Philosophy in Applied and Industrial Mathematics

All students admitted to the program must complete the following coursework (or their approved equivalent) and other degree requirements:

Code	Title	Hours
Core Courses		
Select two sequences from the following:		12
MATH 621 & MATH 622	Algebra I Algebra II	
MATH 681 & MATH 682	Combinatorics and Graph Theory I Combinatorics and Graph Theory II	
MATH 601 & MATH 602	Real Analysis I Real Analysis II	
Select two sequences from the following:		12
MATH 635 & MATH 636	Mathematical Modeling I Mathematical Modeling II	
MATH 667 & MATH 668	Statistical Inference Linear Statistical Modeling	
MATH 663 & MATH 664	Theory of Probability I Theory of Probability II	
Area of Specialization (see note below)		18
Dissertation		12-18
MATH 700	Doctoral Research	
MATH 710	Doctoral Dissertation	
Minimum Total Hours		54-60

Additional Topics and Area of Specialization

In addition to the core, an application area of 18 credit hours will be required. The courses may be in a department outside Mathematics. They will be chosen in consultation with the student's advisory committee.

Qualifying Examinations

Students must pass three written examinations. Two of these will be chosen from the areas of Algebra, Combinatorics and Real Analysis. The third will be chosen from the areas of Mathematical Modeling, Mathematical Statistics and Probability. Normally, these will be taken within a year of completion of the core coursework. These examinations need not be taken together and each may be attempted at most twice.

Industrial Internship

Each student, with prior approval of the Graduate Studies Director, has to complete an internship in an appropriate industrial or governmental setting, or have equivalent experience.

Computing Project

Each student must complete an approved computer project related to the student's area of concentration.

Candidacy Examination

Each student must pass an oral examination in the chosen area of concentration. Usually, at most two attempts at passing this examination will be permitted. Students who wish to make a third attempt must petition the Graduate Studies Committee of the department for permissions to do so.

Dissertation

12 to 18 credit hours: A doctoral dissertation is required of each student.

Dual Degree Program in Applied and Industrial Mathematics (PhD) and Biostatistics (MS)

Required Courses

The required courses for the dual degree program consist of all non-overlapping core courses for both the PhD in Applied and Industrial Mathematics, as well as the course requirements for the MS in Biostatistics. Courses taken to satisfy the Biostatistics component of the dual degree program can be applied to these 18 credit hours of electives which are required for the PhD in Applied and Industrial Mathematics.

Students currently enrolled in the PhD in Applied and Industrial Mathematics program will need to submit complete application materials to the Department of Bioinformatics and Biostatistics for admission to the MS component of the dual degree, as well as notify his/her advisor in the Department of Mathematics of the intention to enter into the dual degree program (see Admissions tab).

Requirements for the PhD in Applied and Industrial Mathematics

Code	Title	Hours
Core Courses		
Select two sequences from the following:		12
MATH 621 & MATH 622	Algebra I Algebra II	
MATH 681 & MATH 682	Combinatorics and Graph Theory I Combinatorics and Graph Theory II	
MATH 601 & MATH 602	Real Analysis I Real Analysis II	
Select two sequences from the following:		12
MATH 635 & MATH 636	Mathematical Modeling I Mathematical Modeling II	
MATH 667 & MATH 668	Statistical Inference Linear Statistical Modeling	
MATH 663 & MATH 664	Theory of Probability I Theory of Probability II	
Application Area Courses (see note below)		18
Dissertation		12-18
MATH 700	Doctoral Research	
MATH 710	Doctoral Dissertation	
Minimum Total Hours		54-60

Elective/Application Area Courses

18 credit hours of Application Area courses are chosen in consultation with a student's advisory committee. These courses can be outside of the Department of Mathematics. Courses taken to satisfy the Biostatistics component of the dual degree program can be approved to satisfy these 18 credit hours.

Industrial Internship

Each student, with prior approval of the Graduate Studies Director and the Industrial Internship Director, has to complete an internship in an appropriate industrial or governmental setting, or have equivalent experience. The Industrial Internship required by the Department of Mathematics and the Master's Project or Thesis required for the MS can be satisfied by a single internship and technical report which simultaneously satisfies the requirements for both degrees. Specifically, the internship must both focus on biostatistics so that it satisfies the Project or Thesis, and contain advanced mathematical content so that it satisfies the Industrial Internship. Likewise, the technical report must meet two requirements: it must satisfy the requirements for a Master's Project report or Master's Thesis for the MS degree and it must be written at an advanced mathematical level expected Industrial Internship. Students should enroll in the Master's Project (PHST 675) or Master's Thesis (PHST 666) courses during or shortly after completion of the Industrial Internship to take advantage of the combined Industrial Internship and Master's Project/Thesis.

Dual-degree students will not be permitted to enroll in the Master's Project (PHST 675) or Master's Thesis (PHST 666) courses until at least two qualifying examinations toward the PhD in Applied and Industrial Mathematics have been completed.

Other Requirements

Students must pass qualifying examinations, complete an approved computing project, and pass a candidacy examination as detailed in the catalog entry for the PhD in Applied and Industrial Mathematics.

Dissertation

In order for the student to fulfill the PhD requirements, the student must satisfy both the qualifying examination and dissertation requirements (12-18 credit hours) for the PhD in Applied and Industrial Mathematics. Failure to complete these requirements will not jeopardize the MS degree if all its requirements have been satisfactorily completed.

MS in Biostatistics

Code	Title	Hours
Core Course Requirements		
Select one of the following sequences: ¹		6
PHST 661 & PHST 662	Probability Mathematical Statistics	
MATH 561 & MATH 562	Probability Mathematical Statistics	
PHST 680 & PHST 681	Biostatistical Methods I Biostatistical Methods II ²	6
PHPH 523	Public Health in the United States ³	3
PHST 624	Clinical Trials I: Planning and Design	2
PHST 625	Clinical Trials II	2
PHST 683	Survival Analysis	3
PHST 684	Categorical Data Analysis	3
Various Biostatistics Electives ⁴		8
Additional Requirements - Option Thesis		
PHST 666	Master's Thesis Research ⁵	6
Minimum Total Hours		39

¹ The PHST 661-PHST 662/MATH 561-MATH 562 requirement is waived if the student takes MATH 663 and MATH 667. The PHST 681-PHST 682 requirement is waived if the

- student takes MATH 667-MATH 668. Both requirements (PHST 661-PHST 662/MATH 561-MATH 562 and PHST 681-PHST 682) are waived **only if** the student completes both the MATH 663-MATH 664 and MATH 667-MATH 668 sequences.
- ² Courses taken to satisfy the Biostatistics component of the dual degree program can be applied to the 18 credit hours of electives which are required for the PhD in Applied and Industrial Mathematics.
- ³ A course in public health is a requirement for any student graduating with the MS degree from the Department of Bioinformatics and Biostatistics. These credit hours are not applied to the MS degree.
- ⁴ Electives are chosen in consultation with an advisor, typically from PHST 603, PHST 620, PHST 640, PHST 675, and PHST 682.
- ⁵ To be completed in accordance with the guidelines written in the catalog entry for the MS in Bioinformatics and Biostatistics Degree.

Combined Industrial Internship, Practicum and Master's Thesis [six - eight (6-8) credit hours]

The Industrial Internship required by the Department of Mathematics and the Master's Project or Thesis required for the MS can be satisfied by a single internship and technical report which simultaneously satisfies the requirements for both degrees. Specifically, the internship must both focus on biostatistics so that it satisfies the Project or Thesis, and contain advanced mathematical content so that it satisfies the Industrial Internship. Likewise, the technical report must meet two requirements: it must satisfy the requirements for a Master's Project report or Master's Thesis for the MS degree and it must be written at an advanced mathematical level expected Industrial Internship. Students should enroll in the Master's Project (PHST 675) or Master's Thesis (PHST 666) courses during or shortly after completion of the Industrial Internship to take advantage of the combined Industrial Internship and Master's Project/Thesis.

Students will not be permitted to enroll in the Master's Project (PHST 675) or Thesis (PHST 666) courses until at least two qualifying examinations toward the PhD in Applied and Industrial Mathematics have been completed.

Special Considerations: Students who have already completed a master's degree in the Department of Mathematics

To preserve the spirit of a dual degree, such students need to complete 36 credit hours of courses as required for the MS in Biostatistics. Six (6) credit hours of the previous master's degree coursework can be applied to this requirement. The remaining credit hours must be chosen from the list of not covered by core courses approved electives for the Department of Bioinformatics and Biostatistics, with preference given to courses in the Departments of Mathematics and Bioinformatics and Biostatistics. Combined Industrial Internship, Practicum and Master's Thesis cannot be replaced by a previous master's thesis. This requirement must be satisfied as previously described, meeting the specifications of both departments.

Mechanical Engineering (MEng)

Master of Engineering in Mechanical Engineering (ME MEN)
Unit: Speed School of Engineering (<http://engineering.louisville.edu>) (SP)

Department: Mechanical Engineering (<https://engineering.louisville.edu/academics/departments/mechanical/>)
Academic Plan Code(s): ME_ _MEN

Program Information

General Information

The Bachelor of Science in Mechanical Engineering degree will provide a student with the basis to be able to complete the Master of Engineering (MEng) in Mechanical Engineering degree. The Master of Engineering in Mechanical Engineering degree program is accredited by the Engineering Accreditation Commission (EAC) of ABET, www.abet.org (<http://www.abet.org>). (<https://www.abet.org>)

Since the Mechanical Engineering MEng is accredited as part of a five-year program with one-year of co-op experience, it is only available for students who have matriculated through the Mechanical Engineering bachelor degree program at J.B. Speed School of Engineering. Therefore, students who earn an undergraduate degree at a school or university other than the University of Louisville pursue the MS degree instead of the MEng degree.

Master of Engineering Program Educational Objectives

The purpose of the five-year Master of Engineering Program is to bring together the faculty, staff, and capital resources to meet the following program educational objectives:

- Succeed as practicing mechanical engineers in government, industry, academia, and other economic sectors.
- Use their knowledge and skills in mathematics, science, engineering, and other disciplines to identify, define, and solve problems, and to anticipate the global, societal, and environmental impact of their solutions.
- Understand the importance of professional licensure, and act upon that understanding by pursuing registration.
- Comply with professional ethics codes, practice sustainable engineering, undertake professional development, and engage in life-long technical learning.
- Display skills in teamwork, communication, critical thinking, and leadership.
- Demonstrate an engineering knowledge base of greater depth and breadth than that expected of baccalaureate-only graduates, helping them understand and influence contemporary technological issues as engineering innovators and managers.

Master of Engineering Student Outcomes

In order to achieve these objectives, the Master of Engineering has developed an outcomes set for its graduates.

Graduates will demonstrate:

- an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
- an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
- an ability to communicate effectively with a range of audiences
- an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts

- an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
- an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
- an ability to acquire and apply new knowledge as needed, using appropriate learning strategies
- An ability to apply masters-level knowledge in a specialized area related to mechanical engineering

Residency

All graduate students are expected to make steady and satisfactory progress toward the completion of degrees. A candidate for the Master of Engineering degree who does not register for credit hours must maintain active registration by paying a fee each semester for MEng residency until the degree is awarded (i.e., the candidate must maintain continuous registration, including summer terms, in Graduate Studies). Failure to pay the MEng residency fee will be cause to cancel a student's residency. Students who are not enrolled for a period of more than 12 months will be considered to have withdrawn from the program. In order to be restored to residency, the student must submit a new application, have the recommendation of the department chair, receive the approval of the Associate Dean and pay the fee for each of the semesters during which the residency was void.

Academic Performance

The J.B. Speed School of Engineering has established the following performance policies:

- The minimum grade point average requirement for good standing is 3.00 for all academic work completed while in graduate studies.
- Any student with a cumulative graduate GPA below 3.00 will be placed on academic warning. Students on academic warning are limited to enrollment for thirteen (13) credit hours in a fall or spring semester and seven (7) credit hours for summer terms.

Students who do not bring their cumulative graduate GPA back at or above a 3.00 in the semester immediately following Academic Warning, will be placed on Academic Probation for the next semester of enrollment. Students on probation are limited to enrollment for thirteen (13) credit hours in a fall or spring semester and seven (7) credit hours for summer terms. Any student who remains in academic probation for two consecutive terms may be considered for dismissal from the program.

- Students receiving graduate assistantships (teaching, research or service) shall be provided adequate training and shall be required to understand and adhere to University policies related to these areas. The performance of teaching, research and service duties by such students shall be periodically evaluated. Students with teaching assistantships shall be evaluated annually.
- Students who fail to meet performance goals or who do not meet other requirements as outlined in the admission letter, program requirements or the university catalog may be subject to academic dismissal from their programs.
- A maximum of eight (8) credit hours of graduate level courses taken as an undergraduate may be used to satisfy MEng degree requirements; these courses cannot have been used to also satisfy BS degree requirements.

Degree Requirements

The following degree requirements are mandatory of all master of engineering candidates:

- The program of study must be completed with a 3.00 GPA or better for all graduate courses used to satisfy degree requirements. Additionally, the program of study must be completed with a 3.00 GPA or better for all academic work attempted in graduate studies.
- Master's degree students must take at least 24 credit hours of coursework at the University of Louisville to satisfy the residency requirement for the master's degree. A maximum of six (6) credit hours of graduate credit may be transferred from accredited institutions.
- Students following the thesis option must follow the Procedures and Standards for Master of Engineering Theses.
- The total requirements must be completed within six years after admission into graduate studies. The time limit imposed by the rule may be extended in individual cases upon recommendation of the department chair and approval of the associate dean for academic and student affairs.
- The MEng degree cannot be conferred prior to the BS degree.

Admission Standards

Since the Mechanical Engineering MEng is accredited as part of a five-year program with one-year of co-op experience, it is only available for students who have matriculated through the Mechanical Engineering bachelor degree program at J.B. Speed School of Engineering.

The application form is available online (<https://engineering.louisville.edu/meng-graduate-application-form/>).

The requirements for admission or readmission to a master of engineering program are:

- Submission of a completed MEng application for the field of specialization in which the student is earning a bachelor degree from the J.B. Speed School of Engineering. Students can be admitted to the MEng program with fewer than thirteen (13) credit hours of BS degree requirements remaining and no later than two years post conferral of their baccalaureate degree;
- Recommendation by the faculty and chair of the student's department for admission or readmission to graduate studies;
- Cumulative baccalaureate grade point average of 2.75. However, those students with cumulative baccalaureate grade-point averages from 2.50 to 2.75 may be admitted upon petition and approval of the chair and faculty of the department.

A student becomes a candidate for the master of engineering degree upon admission to graduate studies and initial registration as a graduate student.

Students are only permitted to enter the MEng ME program with a maximum of one D grade in ME prefixed courses from the BS ME curriculum. A student who accumulates more than one D in ME courses during the BS ME program must repeat courses for which grades of D were earned until only one D grade in an ME prefixed course remains.

Program Requirements

The Master of Engineering in Mechanical Engineering degree requires the following over and above the Bachelor of Science in Mechanical Engineering Degree.

Code	Title	Hours
ME Electives ^{1,2}		18
Technical Electives ^{1,3}		6
Select one of the following:		6
<i>Thesis Option:</i>		
ME 697	Master of Engineering Thesis or Paper in Mechanical Engineering ⁴	
<i>Non-Thesis Option:</i>		
ME 645	Mechanical Engineering Structured Research Project	
ME Elective ^{1,2}		
Minimum Total Hours		30

The Master of Engineering degree must be completed with a 3.00 GPA or better for all graduate courses used to satisfy degree requirements. Additionally, the Master of Engineering degree must be completed with a 3.00 GPA or better for all academic work attempted in graduate studies.

A maximum of eight (8) credit hours of graduate level courses taken as an undergraduate may be used to satisfy MEng degree requirements; these courses cannot have been used to also satisfy BS degree requirements.

¹ Electives must be chosen so that at least one-half of the total credits counted toward the degree, exclusive of thesis, are 600-level

² ME Electives must be approved by the department.

³ Technical Electives can be ME or non-ME courses. Technical Electives must be approved by the student's research advisor or the ME Director of Graduate Studies.

⁴ For the thesis option, a student is required to select both an approved MEng thesis topic and the director and members of the thesis committee during the first term of Graduate Studies. The thesis director must give approval for enrollment in ME 697.

Mechanical Engineering (MS)

Master of Science in Mechanical Engineering

Unit: Speed School of Engineering (<http://engineering.louisville.edu>) (GS)

Department: Mechanical Engineering (<https://engineering.louisville.edu/academics/departments/mechanical/>)

Academic Plan Code(s): ME_ _MS

Program Information

The Master of Science (MS) degree program is intended for persons having an accredited baccalaureate degree in mechanical engineering but is available to those with other backgrounds. Applicants with other backgrounds should plan on taking some undergraduate background coursework. Students interested in the MS degree program should consult the Director of Graduate Studies in the Department of Mechanical Engineering.

Degree Requirements

The program of study must be completed with a 3.00 GPA or better for all graduate courses used to satisfy degree requirements. Additionally, the program of study must be completed with a 3.00 GPA or better for all academic work attempted in graduate studies.

The requirements for the Master of Science degree are discussed in more detail in the Degree Requirements (<http://catalog.louisville.edu/archive/2023-2024/graduate/general-policies-procedures-requirements/degree-requirements/>) section of this catalog.

Admission Standards

The admission standards for the master of science program in mechanical engineering are as follows:

- a. All admission applications for the program shall include:
 - i. A completed graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) for the Graduate School,
 - ii. An application fee,
 - iii. At least two letters of recommendation, and
 - iv. Official transcript(s) for all previous post-secondary coursework. All transcripts not in English must be certified as authentic and translated verbatim into English.
- b. The minimum requirement for admission is the baccalaureate degree or its equivalent from an accredited institution.
- c. The successful applicant will typically have an undergraduate grade point average of 2.75 or above (on a 4.00 scale).
- d. International students whose primary language is not English must show English language proficiency by either TOEFL/IELTS/Duolingo score or demonstration of a degree awarded from an acceptable English language institution. The successful applicant will typically have a TOEFL score of 80 or higher or overall IELTS score of 6.5 or higher or a Duolingo score of 105 or higher.

Program Requirements

Remedial work may be specified for those applicants who, in the opinion of the faculty, do not have a sufficient background.

The minimum curricular requirements for the master's degree program are:

Code	Title	Hours
ME Electives ¹		15
Technical Electives ^{1,2}		9
Select one of the following:		6
<i>Thesis Option</i>		
ME 690	Master of Science Thesis or Paper in Mechanical Engineering ³	
<i>Non-Thesis Option</i>		
ME Electives ¹		
Minimum Total Hours		30

The master of science degree must be completed with a 3.00 GPA or better for all graduate courses used to satisfy degree requirements. Additionally, the master of science degree must be completed with a 3.00 GPA or better for all academic work attempted in graduate studies.

- ¹ Electives must be chosen so that at least one-half of the credits counted toward the degree, exclusive of thesis, are 600-level; at least fifteen (15) credit hours of coursework must be in ME.
- ² Technical Electives can be ME or non-ME courses. Technical Electives must be approved by the department.
- ³ For the thesis option, a student is required to select both an approved MS thesis topic and the director and members of the thesis committee during the first term of Graduate Studies. The thesis director must give approval for enrollment in ME 690.

Mechanical Engineering (PhD)

Doctor of Philosophy in Mechanical Engineering

Unit: Speed School of Engineering (<http://engineering.louisville.edu>) (GS)

Department: Mechanical Engineering (<https://engineering.louisville.edu/academics/departments/mechanical/>)

Academic Plan Code(s): ME_ _PHD

Program Information

The PhD degree program is intended for persons having an accredited master's and/or baccalaureate degree in mechanical engineering but is available to those with other backgrounds. Applicants with other backgrounds should plan on taking some undergraduate background coursework. Students interested in the PhD degree program should consult the Director of Graduate Studies in the Department of Mechanical Engineering.

Degree Requirements

The award of a Doctor of Philosophy degree indicates that a student has attained mastery of a field and has demonstrated the capacity to perform independent scholarly research. Candidates for the Doctor of Philosophy degree must have a minimum final cumulative grade point average of 3.00 for all academic coursework attempted in Graduate Studies.

The requirements for the Doctor of Philosophy degree are explained in more detail in the Degree Requirements section (<http://catalog.louisville.edu/archive/2023-2024/graduate/general-policies-procedures-requirements/degree-requirements/>) of this catalog.

Admission Standards

The admission standards for the PhD program in mechanical engineering are as follows:

- a. All admission applications for the program shall include:
 - i. A completed graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) for the Graduate School,
 - ii. An application fee,
 - iii. Results from the Graduate Record Examination (GRE),
 - iv. At least two letters of recommendation, and
 - v. Official transcript(s) for all previous post-secondary coursework. All transcripts not in English must be certified as authentic and translated verbatim into English.
- b. The minimum requirement for admission is a baccalaureate degree or its equivalent from an accredited institution or current enrollment in an undergraduate Speed School program.

- c. The successful applicant will typically have an undergraduate grade point average of 3.00 or above and a graduate grade point average of 3.25 or above (on a 4.0 scale)
- d. The successful applicant will typically have a GRE Combined Verbal and Quantitative Reasoning score of 302 or above.
- e. International students whose primary language is not English must show English language proficiency by either TOEFL/IELTS/Duolingo score or demonstration of a degree awarded from an acceptable English language institution. The successful applicant will typically have a TOEFL score of 80 or higher or overall IELTS score of 6.5 or higher or a Duolingo score of 105 or higher.

Program Requirements

Normally, it is expected that the student will complete a master's degree before being admitted to the PhD program. However, qualified applicants may be admitted directly to the doctoral program after receiving a baccalaureate degree. These students will be required to complete an additional 30 credit hours of coursework at the 500 and 600 level under an individual plan developed in conjunction with the department's Director of Graduate Studies. Also, remedial work may be specified for those applicants who, in the opinion of the faculty, do not have a sufficient background.

The minimum curricular requirements for the doctoral program are:

Code	Title	Hours
Master's Degree or Approved Master's-Level Course Work		30
Technical Electives ¹		15
ME 700	Dissertation Research in Mechanical Engineering	15
Minimum Total Hours		60

Candidates for the doctor of philosophy degree must have a minimum final cumulative grade point average of 3.00 for all academic work attempted in graduate studies.

¹ Technical Electives can be ME or non-ME courses. Technical Electives must be approved by the department. Students are allowed to take at most six (6) credit hours of Independent Study (ME 588/ME 688) as part of the 30 credit hours of coursework

Medieval and Renaissance Studies (CERT)

Graduate Certificate of Medieval and Renaissance Studies

Unit: College of Arts and Sciences (<https://louisville.edu/artsandsciences/>) (GA)

Department: History (<https://louisville.edu/history/>)

Program Website (<http://louisville.edu/medieval/the-graduate-certificate-in-medieval-and-renaissance-studies/>)

Academic Plan Code(s): MRSTCMR

Program Information

The Graduate Certificate in Medieval and Renaissance Studies is designed for students who wish to pursue their interest in pre-modern and early modern culture in a supportive, interdisciplinary, and intellectually stimulating environment.

Admission Requirements

Language Proficiency

Demonstration of language proficiency by completing a graduate level language course or passing a language competency exam while enrolled in the program (the latter typically involves translating an intermediate 350-500 word passage using a dictionary over three hours).

The Graduate Certificate in Medieval and Renaissance Studies can be completed on its own OR in conjunction with another graduate degree.

- Hold a bachelor's degree from an accredited college or university;
- Complete the University of Louisville, Graduate School, Graduate Admissions application (<http://louisville.edu/graduate/apply/>).
- Schedule an interview with the program director, Dr. Andrew Rabin (andrew.rabin@louisville.edu), Department of English, University of Louisville, Louisville, KY 40292 (502) 852-1722

Program Requirements

- a. **A total of 18 credit hours** in courses approved for graduate credit in accordance with the policies of the Graduate School.
- b. Nine (9) credit hours from the list of "Approved Medieval and Renaissance Courses" must be taken in the student's home department. These credit hours may also count towards the student's graduate degree. In cases where the student's home department does not offer a sufficient number of medieval and renaissance courses, the student may develop an alternative course of study with the approval of the program director.
- c. Nine (9) credit hours from the list of "Approved Medieval and Renaissance Courses" must be taken outside of the student's home department. These credits must be distributed as follows: three (3) credit hours from the list of courses designated by the program as "History and Culture Courses"; three (3) credit hours from the list of courses designated by the program as "Textual Studies Courses"; three (3) credit hours from the list of courses designated by the program as "Arts and Music Courses." Substitutions must be approved by the program director.
- d. Attendance at lectures and participation in workshops conducted each semester by visiting faculty selected by the graduate programs committee.
- e. Student must demonstrate reading knowledge at the Master's level in one of the following: Latin, Greek, French, Italian, Hebrew, German, Spanish, Portuguese, or Arabic. Reading knowledge in other languages may be used to fulfill this requirement at the discretion of the program director. Reading knowledge may be demonstrated either by taking a language exam or by earning a B or above in a graduate level language course. Fulfillment of this requirement may overlap with the completion of a language requirement in the student's home department.
- f. At least nine (9) credit hours must be at the 600 level.
- g. A single course may fulfill more than one of these requirements.
- h. Independent studies may not count towards the fulfillment of these requirements.
- i. 500-level courses taken for undergraduate credit may not count towards the fulfillment of these requirements. As is standard practice, those students enrolled in 500-level courses for credit towards the certificate must complete the requirements for graduate-level work specified by the instructor.

j. Coursework towards the graduate certificate in medieval and renaissance studies may count towards the student's graduate degree.

Code	Title	Hours
Approved Medieval and Renaissance Courses		9
History and Culture		3
HIST 551	Studies in Medieval History - WR (http://catalog.louisville.edu/undergraduate/general-education-requirements/), CUE (http://catalog.louisville.edu/undergraduate/general-education-requirements/)	
HIST 555		
HIST 571		
HIST 572		
HIST 591		
HIST 651	Studies in Medieval History	
HIST 662	Seminar in Early Modern European History	
HUM 590	ST: Interdisciplinary Perspectives on the Humanities - WR (http://catalog.louisville.edu/undergraduate/general-education-requirements/) ¹	
Textual Studies		3
ENGL 515	Introduction to Old English	
ENGL 523	History of the English Language	
ENGL 541	Studies in Old and Middle English Literature - CUE (http://catalog.louisville.edu/undergraduate/general-education-requirements/)	
ENGL 542	Studies in Tudor and Elizabethan Literature - CUE (http://catalog.louisville.edu/undergraduate/general-education-requirements/)	
ENGL 561	Chaucer - CUE (http://catalog.louisville.edu/undergraduate/general-education-requirements/)	
ENGL 562	Shakespeare - CUE (http://catalog.louisville.edu/undergraduate/general-education-requirements/)	
ENGL 563	Milton - CUE (http://catalog.louisville.edu/undergraduate/general-education-requirements/)	
ENGL 591	History of Criticism: Plato to the New Criticism - CUE (http://catalog.louisville.edu/undergraduate/general-education-requirements/)	
ENGL 624	Old English and Middle English Language and Literature	
ENGL 631	Renaissance Drama	
ENGL 632	Shakespeare	
ENGL 633	Renaissance Poetry and Prose	
ENGL 671	History of Rhetoric I	
HUM 581	Dante	
HUM 661	Historical Perspectives on Arts & Culture I	
LAT 551	Introduction to Medieval Latin	
LAT 552	Readings in Medieval Latin	
SPAN 511	Studies in Spanish Medieval Literature	
SPAN 513	Studies in Spanish Golden Age Literature	
SPAN 621	History of the Spanish Language	
LING 523	History of the English Language	
Arts and Music		3
ARTH 561	Studies in Medieval Art	

ARTH 661	Topics in Medieval Art
ARTH 671	Topics in Renaissance Art
ARTH 571	Studies in Renaissance Art
MUS 549	Renaissance Counterpoint
MUS 652	Foundations of Music Theory
MUS 681	Music Notation to c. 1550: History, Transcription, Editing

Minimum Total Hours **18**

¹ HUM 590 is a special topics course and may be used to satisfy this requirement when its subject matter is appropriate. Please consult with your advisor.

Microbiology and Immunology (MS)

Master of Science in Microbiology and Immunology (MBIOMS)

Unit: School of Medicine (<http://louisville.edu/medicine/>) (GM)
 Department: Microbiology and Immunology (<http://louisville.edu/medicine/departments/microbiology/>)
 Program Website (<http://louisville.edu/medicine/departments/microbiology/degrees/>)
 Academic Plan Code(s): MBIOMS

Program Information

The Department of Microbiology and Immunology, in the School of Medicine, offers a program of study leading to the degree of Master of Science. The MS program includes training in a broad range of research areas using state-of-the-art immunological, microbiological, and molecular technologies.

Diversity and Inclusion Statement

Our Department strives to foster and sustain an environment of inclusiveness that empowers us all to achieve our highest potential without fear of prejudice or bias. We commit ourselves to building an exemplary educational community that offers a nurturing and challenging intellectual climate, a respect for the spectrum of human diversity, and a genuine understanding of the many differences- including race, ethnicity, gender, socio-economic status, national origin, sexual orientation, disability, and religion that enrich a vibrant metropolitan research university. We expect every member of our academic family to embrace the underlying values of this vision and to demonstrate a strong commitment to attracting, retaining, and supporting students, faculty, and staff who reflect the diversity of our larger society.

Admission Requirements

For admission to the MS program, the applicant must have attained a BS or BA degree with a minimum grade-point average of 3.0 (on a 4.0 point scale). All applicants accepted into the master's program must be self-supporting, as financial assistance is not available.

In addition, the following should be submitted online (<http://louisville.edu/graduate/apply/>) directly to the Graduate School, Graduate Admissions:

- A completed application form and application fee
- The TOEFL/IELTS/Duolingo (when applicable)
- Three letters of recommendation
- A brief statement of purpose describing interests and career goals

- A current resume or curriculum vitae
- A letter of scientific support from a Department of Microbiology and Immunology faculty member (faculty agreement to mentor student in lab)
- Official transcripts of all undergraduate and graduate course work (submitted to the Graduate School)

The applicant must meet the other general requirements of the Graduate School as outlined in the Application and Admission section (<http://catalog.louisville.edu/archive/2023-2024/graduate/application-admission/>) of this catalog. The application deadline is March 1 each year. Submission prior to March 1 is strongly encouraged in order to ensure that all required materials (especially letters of reference) are received by the deadline.

The applicant is expected to have completed the following undergraduate courses prior to admission to the graduate program: Introductory biology, Organic chemistry, Physics, introductory calculus, and Biochemistry.

Prospective students may be invited for a personal interview with members of the admissions committee and departmental faculty as part of the application process.

Program Requirements

Thesis Option

Code	Title	Hours
Coursework Requirements		
MBIO 601 or MBIO 602	Molecular Microbiology (2 credits) ¹ Immunology	3
MBIO 606	Seminar	1
MBIO 610	Methods and Analysis in the Biomedical Sciences	2
MBIO 619	Research	1-12
BIOC 630	Responsible Conduct of Research: Survival Skills and Research Ethics	1
BIOC 662	Biomedical Research Data Analysis Methods	1
BIOC 667	Cell Biology	3
BIOC 668	Molecular Biology	4
Electives²		
MBIO 601	Molecular Microbiology ¹	2
MBIO 602	Immunology ¹	3
MBIO 604	General Virology	1
MBIO 611	Learning Theories & Instructional Strategies in Science Education	2
MBIO 621	Advanced Immunology: Innate and Adaptive Immunity	2
MBIO 622	Advanced Immunology of Disease	2
MBIO 632	Basic Immunology	1
MBIO 687	Microbial Pathogenesis	2
BIOC 663	High-Throughput Sequencing Data Analysis	3
BIOC 670	Biomedical Genetics and Genomics	3-5
Minimum Total Hours		34-36

¹ If MBIO 601 is taken as a Required Course then MBIO 602 can be taken as an elective. Likewise, if MBIO 602 is taken as a Required Course then MBIO 601 can be taken as an elective.

² A minimum of three courses is required and must be a scientific course from the list below with at least two being MBIO. Additional

courses outside of the department can be taken in consultation with the research advisor and director of graduate studies.

Research Advisor and Project

Students in the MS thesis option program are required to obtain a Research Advisor before being admitted to the program. Students should form a Thesis Committee and decide upon a research project early in the second semester of graduate study. The student, in consultation with her/his Advisor, should form a Thesis Committee of at least three faculty members. The Thesis Committee will consist of two graduate faculty members with primary appointments in the Department of Microbiology and Immunology and a third graduate faculty member with primary status in another department. One of the two faculty members with primary appointments in the Department of Microbiology and Immunology will serve as Co-Advisor if the Research Advisor does not have a primary appointment in the Department of Microbiology and Immunology. The Thesis Committee may consist of more than three faculty members, however, a majority of the faculty on the Thesis Committee must have primary appointments in the Department of Microbiology and Immunology. Selection of the Research Advisor and formation of the Thesis Committee must be approved by the Associate Dean for Graduate Education in the School of Medicine.

Evaluation of Student's Progress

The Thesis Committee will meet at least annually to evaluate the student's progress. Students are expected to maintain satisfactory progress in his/her research project each semester. Students may proceed to degree candidacy provided they have successfully maintained an overall and program GPA of 3.0 or higher (with a grade no lower than a B-minus in any MBIO course), Pass grades in all required courses with Pass/Fail (P/F) grading, and successful completion of all required coursework. It is anticipated the student will complete the degree program at the end of the second year of study.

Master's Thesis Examination

Students pursuing the thesis option are required to write and defend a master's degree thesis. The thesis must be a work of sufficient quality to demonstrate the student's ability to participate effectively on a research project. Following preliminary review and approval by the Research Advisor, the thesis should be distributed to the Thesis Committee members, and a written request submitted to the Graduate School, at least two weeks prior to the scheduled date of the final oral exam. The final oral defense/exam will be preceded by a research seminar open to all graduate faculty members, students, and other interested persons. The oral exam will be administered by the Thesis Committee. The final copy of the thesis must be submitted as advised by the Graduate School through the ThinkIR repository. The directions on submission will be provided upon review of the thesis by the Graduate School. The signature page within the electronic version must have the names of your committee members typed under the signature line; the signatures cannot be scanned into the document. Submit a signed signature page on white paper, with original signatures, or complete the digital/electronic signed signature page, to the Graduate School. Please find the published deadline dates (<https://louisville.edu/graduate/current-students/thesis-dissertation-information/>) by the Graduate School. To satisfactorily pass the thesis defense, a majority of the committee members must approve it.

Guidelines and requirements concerning the thesis and final oral examination are set forth on the Graduate School website (<https://>

louisville.edu/graduate/current-students/thesis-dissertation-information/).

Non-Thesis Option

Code	Title	Hours
Coursework Requirements		
MBIO 601 or MBIO 602	Molecular Microbiology ¹ Immunology	2-3
MBIO 606	Seminar (Fall and Spring - 1 Credit Hour each semester)	2
MBIO 610	Methods and Analysis in the Biomedical Sciences	2
BIOC 667	Cell Biology	3
BIOC 668	Molecular Biology	4
Electives ²		
Select Courses to Total 18-19 Credit Hours:		
MBIO 601	Molecular Microbiology ¹	2
MBIO 602	Immunology ¹	3
MBIO 604	General Virology	1
MBIO 611	Learning Theories & Instructional Strategies in Science Education	2
MBIO 619	Research	1-12
MBIO 621	Advanced Immunology: Innate and Adaptive Immunity	2
MBIO 622	Advanced Immunology of Disease	2
MBIO 623	Scientific Writing and Hypothesis Testing	1
MBIO 632	Basic Immunology	1
MBIO 687	Microbial Pathogenesis	2
BIOC 630	Responsible Conduct of Research: Survival Skills and Research Ethics	1
BIOC 662	Biomedical Research Data Analysis Methods	1
BIOC 663	High-Throughput Sequencing Data Analysis	3
BIOC 670	Biomedical Genetics and Genomics	3
Minimum Total Hours		35

¹ If MBIO 601 is taken as a Required Course then MBIO 602 can be taken as an elective. Likewise, if MBIO 602 is taken as a Required Course then MBIO 601 can be taken as an elective.

² A minimum of three courses is required and must be a scientific course from the list below with at least two being MBIO. Additional courses outside of the department can be taken in consultation with the research advisor and director of graduate studies.

If the student has satisfactorily completed the required courses and total credit hour requirements with an overall and program GPA of 3.0, then the student may register in master's candidacy.

Evaluation of Student's Progress

Students will meet with the associate director of graduate studies at the conclusion of the Year 1 Fall and Year 1 Spring semesters. Students are required to identify a faculty advisor by completion of Year 1. The faculty advisor will provide mentorship through completion of the Program, in particular, completion of the master's final oral examination. Students are expected to maintain satisfactory progress in her/his coursework. Students may proceed to degree candidacy provided they

have successfully maintained an overall and program GPA of 3.0 or higher (with a grade no lower than a B-minus in any MBIO course), Pass grades in all required courses with Pass/Fail grading, and successful completion of all required coursework.

Master's Final Oral Examination

Students are required to write either a literature-based research proposal or a literature review and orally defend it to their master's final examination committee. The decision to write a research proposal or literature review will be made between the student and their faculty advisor. The Department of Microbiology and Immunology curriculum committee chair will name the master's final examination committee, which will be comprised of at least three graduate faculty members with at least two members with primary appointments in the Department of Microbiology and Immunology. To satisfactorily pass the master's final exam, a majority of the committee members must approve.

Microbiology and Immunology (PhD)

Doctor of Philosophy in Microbiology and Immunology

Unit: School of Medicine (<http://louisville.edu/medicine/>) (GM)

Department: Microbiology & Immunology (<http://louisville.edu/medicine/departments/microbiology/>)

Program Website (<http://louisville.edu/medicine/departments/microbiology/degrees/phd-mi/>)

Academic Plan Code(s): MBIOPHD

Program Information

The Department of Microbiology and Immunology, in the School of Medicine, offers a program of study leading to the degree of Doctor of Philosophy. The PhD program includes training in a broad range of research areas using state-of-the-art immunological, microbiological, and molecular technologies. A competitive stipend, health care benefits, a full waiver of tuition and fees are provided to all applicants accepted into the PhD Program.

Diversity and Inclusion Statement

Our department strives to foster and sustain an environment of inclusiveness that empowers us all to achieve our highest potential without fear of prejudice or bias. We commit ourselves to building an exemplary educational community that offers a nurturing and challenging intellectual climate, a respect for the spectrum of human diversity, and a genuine understanding of the many differences-including race, ethnicity, gender, socio-economic status, national origin, sexual orientation, disability, and religion that enrich a vibrant metropolitan research university. We expect every member of our academic family to embrace the underlying values of this vision and to demonstrate a strong commitment to attracting, retaining, and supporting students, faculty, and staff who reflect the diversity of our larger society.

Admission Requirements

For admission to the PhD program, the applicant must have attained a BS or BA degree with a minimum grade-point average of 3.0 (on a 4.0 point scale). In addition, the following should be submitted online (<http://www.louisville.edu/graduate/futurestudents/apply-materials/>) directly to the Graduate School, Graduate Admissions.

- A completed application form and application fee
- The TOEFL, IELTS or Duolingo (when applicable)
- Three letters of recommendation

- A brief statement of purpose describing interests and career goals
- A current resume or curriculum vitae
- Official transcripts of all undergraduate and graduate coursework (submitted to the Graduate School, Graduate Admissions)

The applicant must meet the other general requirements of the Graduate School as outlined in the General Information section of this catalog. The application deadline is March 1 each year. Submission prior to March 1 is strongly encouraged in order to ensure that all required materials (especially letters of reference) are received by the deadline.

The applicant is expected to have completed the following undergraduate courses prior to admission to the PhD program (one semester of each):

- Introductory biology
- Organic chemistry
- Introductory calculus
- Biochemistry

Prospective students may be invited for a personal interview with members of the admissions committee and departmental faculty as part of the application process.

Student Financial Support

Students accepted into the PhD program will be considered for an IPIBS graduate student fellowship. The fellowship pays an annual stipend in addition to payment of student tuition and health insurance. The Department also houses a NIAIH-funded T32 Inflammation and pathogenesis training program (louisville.edu/medicine/departments/microbiology/research/inflammation-and-pathogenesis-t32-training-grant) (<http://louisville.edu/medicine/departments/microbiology/research/inflammation-and-pathogenesis-t32-training-grant/>) which provides stipend support for selected students.

Program Requirements

Coursework

Code	Title	Hours
Required Courses (minimum grade of B-is required for all)		
MBIO 600	Lab Rotations (Fall & Spring)	1
MBIO 601	Molecular Microbiology (Fall)	2
MBIO 602	Immunology (Fall)	3
MBIO 604	General Virology (Fall)	1
MBIO 606	Seminar (Fall & Spring)	1
MBIO 610	Methods and Analysis in the Biomedical Sciences (Fall)	2
MBIO 619	Research (Fall, Spring & Summer)	1-12
MBIO 623	Scientific Writing and Hypothesis Testing (Summer)	1
BIOC 630	Responsible Conduct of Research: Survival Skills and Research Ethics (Spring)	1
BIOC 662	Biomedical Research Data Analysis Methods (Summer)	1
BIOC 667	Cell Biology (Spring)	3
BIOC 668	Molecular Biology (Fall)	4
Elective Courses		

A minimum of three elective courses is required and must be a scientific course from the list below (at least two must be MBIO):

MBIO 611	Learning Theories & Instructional Strategies in Science Education	2
MBIO 621	Advanced Immunology: Innate and Adaptive Immunity (Spring)	2
MBIO 622	Advanced Immunology of Disease (Fall)	2
MBIO 687	Microbial Pathogenesis (Spring)	2
<i>Other Approved Graduate Courses</i>		
BIOC 663	High-Throughput Sequencing Data Analysis	3
BIOC 670	Biomedical Genetics and Genomics (Fall)	3-5
BIOC 675	Cancer Biology (Spring)	4
Minimum Total Hours		35-37

Note: Students enrolled in the MD/PhD Joint Degree Program, who have completed step I of NBME, will have satisfied all of the required course requirements except seminar, Research Ethics, Research Methods, Scientific writing, and research. Three electives will be required. They will be required to satisfactorily complete the Qualifying Exam and successfully defend a dissertation research project, in addition to attending all journal club sessions and seminars.

Qualifying Examination

Upon successful completion of the required course work, maintaining a minimum 3.0 GPA, and upon the recommendation of the advisor or chair, the student may take the PhD Qualifying Examination. The Qualifying Examination will consist of a written research proposal related to the area of primary research and an oral defense of the project, both prepared independently without help from their mentor. Three to five faculty with expertise in the area of the proposal will be selected by the Curriculum Committee to serve as the Examining Committee. The student may enter degree candidacy upon receipt of satisfactory judgment from the Examining Committee and successful completion of the final semester of coursework.

Selection of a Research Advisor, Dissertation Committee, and Research Proposal

Selection of the Research Advisor and specific research area is one of the most important decisions of the student's entire graduate training program and is a joint decision by the student and faculty member. Students must select a Research Advisor for their dissertation research by the end of their first year. Selection of the Research Advisor and formation of the Dissertation Committee must be approved by the Department Chair and the Dean of the School of Medicine (or their designees). The potential advisor must agree, in writing, to provide stipend and candidacy fee support from his/her research funds, following fellowship support. Upon approval of the Research Advisor, the student will formally decide upon a dissertation research project. The student and Research Advisor will form a Dissertation Committee with five graduate faculty members. The committee will be composed of the advisor, three faculty members of the Department of Microbiology and Immunology, and one additional graduate faculty member from another department. If the advisor does not have a primary appointment in the Department of Microbiology and Immunology, one of the three other departmental members with a primary appointment in the department must serve as Co-Advisor. The Chairman of the Department may serve as an ex-officio member of the committee.

The committee will meet regularly to evaluate the progress of the research (at least once per year). The student will also be required to present a research seminar to the department annually on this progress. When the dissertation research is completed, the committee will conduct

the final oral examination in accordance with the guidelines in the General Information section of this catalog.

Middle Grades Education (RANK1)

Rank 1 Program in Middle Grades Education Advanced Practitioner

Unit: College of Education and Human Development (<https://louisville.edu/education/>) (ED)

Department: Elementary, Middle and Secondary Teacher Education (<https://louisville.edu/education/departments/mise/>)

Program Website (<https://louisville.edu/education/degrees/rank1/>)

Academic Plan Code(s): MSED RK1MAP

Program Information

Rank 1 programs are not degree programs.

Rank 1 programs are planned graduate level programs designed for Kentucky teachers seeking rank change for salary purposes. They are recognized only in the state of Kentucky. By state regulation, Rank 1 status is 60 credit hours of approved graduate credit including a master's degree.

Teachers who complete a Rank 1 program may obtain a Rank change for salary purposes in Kentucky. Through a Rank 1 program, teachers may increase their depth of knowledge in their teaching areas or in additional areas of certification, as appropriate.

Admissions Requirements

Students may apply to the program by first going to the Graduate School (<http://louisville.edu/graduate/apply/>) website. Admission requirements include the following credentials:

- Graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>).
- Official transcripts with a GPA of 2.75 in the Bachelor's degree and a GPA of 3.0 in the master's degree.
- Applicants who have attended a college or university outside of the United States are also required to submit an evaluation of their transcript through either World Education Services (<https://www.wes.org/>) (WES) (<https://www.wes.org/>) or Educational Credential Evaluators (<https://www.ece.org/ECE/>) (ECE) (<https://www.ece.org/ECE/>). Please note that transcript evaluations can sometimes take several weeks.
- All applicants for whom English is a second language must also submit official TOEFL scores of 79 or higher on the internet-based test, 213 or higher on the computer-based test. English proficiency can also be met by submitting official IELTS scores of at least 6.5 overall band score from the academic module exam or official Duolingo overall score of 105. Students holding a bachelor's or advanced degree from an accredited institution in the United States may be exempt from this requirement.
- Teaching certificate in Middle Grades Education and a master's degree/Rank II
- Signed Professional Code of Ethics/Technology User Agreement

Please have transcripts sent to:

University of Louisville
Graduate School, Admissions
Houchens Building, Suite 105
Louisville, KY 40292

If transcripts are sent electronically, please have them sent to the following e-mail: gradadm@louisville.edu.

Rank 1 Requirements

(For teachers who have earned a master's degree)

Code	Title	Hours
Inquiry		3
Select one of the following:		
EDAP 639	Education Research in P-12 Setting	
LEAD 601	Applied Statistics	
Advocacy (Professional Leader)		
Leadership		3
Select one of the following:		
EDAP 624	Curriculum Theory	
EDAP 637	Using Assessment to Improve Student Achievement	
EDAP 677	Developing Collaborative Groups: Facilitating, Coaching and Mentoring	
LEAD 636	Creating Equitable & Reliable Learning Environments	
Diversity		3
Select one of the following:		
EDAP 521	Teaching English Learners in the Classroom	
EDAP 638	Instructional Strategies for Diverse Learners	
EDAP 642	Literacy Learning and Cultural Differences	
EDTP 503	Developing Cross-Cultural Competence: Teaching Students from Diverse Backgrounds	
Area of Emphasis		12-18
Electives		0-6
Action (Problem Solver)		3
EDAP 681	Teacher Leadership in Practice *	
Minimum Total Hours		30

Minimum of fifteen (15) credit hours in 600-level courses is required.

Up to fifteen (15) credit hours of graduate credit may be transferred to the Rank 1 program, as long as the student will have completed 60 credit hours of approved graduate credit including a masters degree at the end of the Rank 1 program. Transfer credit must be officially accepted by the advisor and final acceptance is dependent upon receipt of official transcripts.

In the Rank 1 program, at least fifteen (15) credit hours of new graduate coursework must be taken at the University of Louisville.

To complete the program, students must have minimum 3.0 cumulative grade point average. No grade lower than B-minus will be accepted.

Midpoint Requirement

Candidates are required to submit a mid-point performance assessment to their faculty advisor at the completion of fifteen (15) credit hours of coursework. The faculty advisor will assess the candidate's performance assessment, which must be at the Exemplary or Target level. The performance assessment must address content, classroom environment, teaching, assessing, and reflection, using an artifact (such as a video), to document professional learning.

Exit Requirements: Hallmark Assessment Task for EDAP 681 or equivalent project that demonstrates proficiency in the Kentucky Teacher Performance Standards.

* Course project must address all of the Kentucky Academic Standards.

Middle School Education (MAT)

Master of Arts in Teaching in Middle School Education

Unit: College of Education and Human Development (<http://louisville.edu/education/>) ([GE](#))

Department: Elementary, Middle, and Secondary Education (<https://louisville.edu/education/departments/mise/>)

Program Website (<https://louisville.edu/education/degrees/mat-mse/>)

Academic Plan Code(s): MSEDMAT

Program Information

The MAT in Middle School Education enables graduate students to earn their initial teaching certification for Kentucky in the content areas of English, Mathematics, Science or Social Studies, grades 5-9. Teacher candidates learn to teach through instruction in pedagogy, child development, special education, technology, and diversity. The program integrates field experiences that align both with program studies and professional education career goal.

Early Start Program

The Master of Arts in Teaching program in conjunction with the undergraduate programs in Chemistry, Biology, and Mathematics offers a comprehensive and professionally-focused program leading to an additional degree of MAT Middle or Secondary Education. This early start program enables superior students to receive two degrees within five years. A total of 149-152 credits are required for the dual degrees: 122-125 credits of coursework devoted toward the baccalaureate degree and 36 credit hours toward the MAT, with nine (9) credit hours double-counted. This program will be available for students who are entering their junior year. They may take graduate level courses in the College of Education and Human Development in their 4th year of study.

The current qualifications for the joint degree program have been agreed upon by discipline faculty from the College of Arts and Sciences and the College of Education and Human Development. The criteria vary by discipline. Students enrolling in the accelerated program will be non-thesis students and must adhere to all policies pertaining to Graduate Students. All interested students must submit an application to the College of Education and Human Development MAT program and meet the admission criteria.

Admission Requirements

Candidates who meet the following criteria may be eligible to apply to the Master of Arts in Teaching program. Candidates considering application to the MAT program should contact the Education Advising and Student Services office (teacher@louisville.edu (<http://louisville.edu/cgi-bin/uofl.mail?teacher>)) prior to applying for admission.

Admission is competitive. Candidates who meet minimum academic requirements are not guaranteed admission to the program.

Applicants must complete/satisfy the following:

- Application to Graduate School (<http://louisville.edu/graduate/apply/>). This should be completed three to four weeks prior to the application deadline.
- Praxis II (<http://louisville.edu/education/degrees/info/mat-mse-praxis-ii/>) Content Exam registration and/or scores
- Bachelor's degree from Accredited College or University (<http://louisville.edu/education/degrees/info/bachelors/>) with major in content area or appropriate prerequisite courses and a minimum 2.75 Grade Point Average (official transcripts (<http://louisville.edu/education/degrees/info/transcripts/>) required)
- Grade of C or higher in ENGL 102 (or equivalent)
- C or higher in oral communication course
- TOEFL (<http://louisville.edu/education/degrees/info/toefl/>)/IELTS (<https://www.ielts.org/>)/Duolingo (<https://www.duolingo.com/>)
- Professional Writing Requirements (<https://louisville.edu/education/degrees/info/mat-mse-professional-statement/>)
- Three Letters of Recommendation (<http://louisville.edu/education/degrees/info/lor/>)
- Signed Professional Code of Ethics/Technology User Agreement/Statement of Understanding of Admissions Guidelines
- Acceptable interview

Program Requirements

Single Content Area Certification

Code	Title	Hours
EDTP 631	Integrated Teaching and Learning I	3
EDTP 633	Integrated Teaching and Learning III	3
<i>The above courses must be completed prior to the content methods course(s).</i>		
Choose one from the following courses:		3
EDTP 607	Middle School Language Arts Methods	
EDTP 608	Middle School Math Methods	
EDTP 609	Middle School Science Methods	
EDTP 610	Middle School Social Studies Methods	
EDTP 617	Student Teaching: Middle School	9
EDTP 503	Developing Cross-Cultural Competence: Teaching Students from Diverse Backgrounds ¹	3
EDTP 541	Teaching Middle School	3
EDTP 620	Reading and Writing Across the Curriculum ¹	3
Choose the technology course appropriate for your content certification area: ¹		3
EDTP 580	Digital Citizenship: Technology and Teaching	
EDTP 581	Technology Applications for Mathematics Teaching	
EDTP 582	Technology Applications for Science Teachers	
Minimum Total Hours		30

¹ Can be taken at any point in the program.

Mid-point Assessment: Prior to Student Teaching

Satisfactory dispositions assessment; no lower than a "C" in content methods class; within three (3) credits of meeting content requirements; all course(s) passed; electronic documentation of 200 hours of diverse

and approved field experiences; satisfactory performance on all Hallmark Assessment Tasks; Target performance or better on all rubrics.

Certification Assessment: After Student Teaching

Satisfactory dispositions assessment; passing scores on required PRAXIS exams; completion of degree requirements.

Degree Assessment

All certification and degree course work completed with 3.0 cumulative GPA (no more than two "C's" in degree courses); 2.5 cumulative GPA in content course requirements; a "C" or higher in student teaching; satisfactory performance on all Hallmark Assessment Tasks; Target performance or better on all rubrics.

Degree Candidacy: Students not enrolled during the semester in which they intend to graduate must register for degree candidacy as outlined in the Graduate Catalog (<http://catalog.louisville.edu/archive/2023-2024/graduate/general-policies-procedures-requirements/>).

Praxis Disclaimer: Teacher certification requirements are subject to change. Before registering for certification test(s), please refer to the Education Professional Standards Board (EPSB) website at [epsb.ky.gov](http://www.epsb.ky.gov) (<http://www.epsb.ky.gov/>) or ets.org/praxis/ky (<http://www.ets.org/praxis/ky/>) for current requirements.

Dual Content Area Certification

Code	Title	Hours
EDTP 631	Integrated Teaching and Learning I	3
EDTP 633	Integrated Teaching and Learning III	3
<i>The above courses must be completed prior to the content methods course(s).</i>		
Choose two from the following courses		6
EDTP 607	Middle School Language Arts Methods	
EDTP 608	Middle School Math Methods	
EDTP 609	Middle School Science Methods	
EDTP 610	Middle School Social Studies Methods	
EDTP 617	Student Teaching: Middle School	9
EDTP 503	Developing Cross-Cultural Competence: Teaching Students from Diverse Backgrounds ¹	3
EDTP 541	Teaching Middle School	3
EDTP 620	Reading and Writing Across the Curriculum ¹	3
Choose the technology course appropriate for your content certification area ¹		3
EDTP 580	Digital Citizenship: Technology and Teaching	
EDTP 581	Technology Applications for Mathematics Teaching	
EDTP 582	Technology Applications for Science Teachers	
Minimum Total Hours		33

¹ Can be taken at any point in the program.

Mid-point Assessment: Prior to Student Teaching

Satisfactory dispositions assessment; no lower than 2.0 GPA in content methods classes; within three (3) credit hours of meeting content requirements; all courses passed; satisfactory mid-point teacher

performance assessment (TPA); positive recommendation from Middle/Secondary Program Committee; electronic documentation of 200 hours of diverse and approved field experiences.

Certification Assessment: After Student Teaching

Satisfactory dispositions assessment; all certification and degree course work completed with 3.0 cumulative GPA; 2.5 cumulative GPA in content course requirements; 2.0 or higher in student teaching; satisfactory certification teacher performance assessment (TPA); passing scores on PRAXIS content and PLT exams; positive recommendation from Middle/Secondary Program Committee.

Degree Assessment

All program coursework completed with 3.0 cumulative GPA (and no more than a total of two grades of C (six credit hours) in degree courses).

Degree Candidacy: Students not enrolled during the semester in which they intend to graduate must register for degree candidacy as outlined in the Graduate Catalog (<http://catalog.louisville.edu/archive/2023-2024/graduate/general-policies-procedures-requirements/>).

Praxis Disclaimer: Teacher certification requirements are subject to change. Before registering for certification test(s), please refer to the Education Professional Standards Board (EPSB) website at [epsb.ky.gov](http://www.epsb.ky.gov) (<http://www.epsb.ky.gov/>) or ets.org/praxis/ky (<http://www.ets.org/praxis/ky/>) for current requirements.

The Master of Arts in Teaching in Middle School Education program prepares students to meet the requirements for certification and/or licensure. If you plan to pursue professional licensure or certification you should first determine your state's criteria for examination and licensure to see how/if our program meets those requirements prior to enrollment. We recommend that you also contact your state's licensing board directly to verify that the requirements have not changed recently and to answer any questions especially those regarding additional requirements beyond the degree.

More information about certification or licensure is available at the following website: louisville.edu/oapa/licensure-information (<https://louisville.edu/oapa/licensure-information/>) (you may search by school or by the name of the program then click on 'View Details' to display the information).

For programs with an online option, more information about certification or licensure is available here: [https://louisville.edu/online/About-Us/?tab=disclosures](https://louisville.edu/online/About-Us?tab=disclosures) (<https://louisville.edu/online/About-Us/?tab=disclosures>)

Middle School Education - Alternative Certification 5-9 (MAT)

Master of Arts in Teaching in Middle School Education, Alternative Route to 5-9 Certification

Unit: College of Education and Human Development (<https://louisville.edu/education/>) (GE)
 Department: Elementary, Middle and Secondary Teacher Education (<https://louisville.edu/education/departments/mise/>)
 Program Website (<https://louisville.edu/education/degrees/mat-ac/>)
 Academic Plan Code(s): MSEDMATENG, MSEDMATMAT, MSEDMATSCI, MSEDMATSSST

Program Information

The Alternative Certification program is designed to assist local school districts in meeting the demand for qualified teachers in high need content areas. The program provides candidates with an opportunity to pursue initial teacher certification while working as a full-time teacher on a temporary provisional license.

Employment is not required for initial acceptance to the program. However, candidates must be employed in a Kentucky-accredited school by the start of the school year in order to continue in the program. This program is a two-year, 30 credit hour program resulting in initial teacher certification and a Master of Arts in Teaching (MAT) degree.

Admission Requirements

Candidates who meet the following criteria may be eligible to apply to the Master of Arts in Teaching, Alternative Certification program:

- Application to Graduate School (<http://louisville.edu/graduate/apply/>). This should be completed three to four weeks prior to the application deadline.
- Passing scores on content Praxis II Exam(s) (<http://louisville.edu/education/degrees/info/mat-ac-praxis-ii/>)
- Bachelor's Degree (<http://louisville.edu/education/degrees/info/bachelors/>) from Accredited College or University with major in content area and a minimum 2.75 Grade Point Average (official transcripts (<http://louisville.edu/education/degrees/info/transcripts/>) required)
- Prerequisite Course Requirements (<http://louisville.edu/education/degrees/info/mat-mse-prereq/>) – Applicants may apply to the program with up to six (6) credit hours of content remaining to complete.
- Grade of C or higher in ENGL 102 (or equivalent)
- Grade of C or higher in oral communication course
- TOEFL (<http://louisville.edu/education/degrees/info/toefl/>)/IELTS (<https://www.ielts.org/>)/Duolingo (<https://www.duolingo.com/>)
- Professional Writing Requirements (<https://louisville.edu/education/degrees/info/mat-mse-professional-statement/>)
- Three Letters of Recommendation (<http://louisville.edu/education/degrees/info/lor/>)
- Experience working with diverse groups of children/adolescents
- Acceptable interview

Candidates considering application to the MAT program should contact the Education Advising and Student Services office (teacher@louisville.edu) prior to applying for admission.

Admission is competitive. Candidates who meet minimum academic requirements are not guaranteed admission to the program.

Program Requirements

Code	Title	Hours
EDTP 631	Integrated Teaching and Learning I	3
EDTP 632	Integrated Teaching and Learning II	3
Choose one from the following courses:		3
EDTP 607	Middle School Language Arts Methods	
EDTP 608	Middle School Math Methods	
EDTP 609	Middle School Science Methods	

EDTP 610	Middle School Social Studies Methods	
EDTP 633	Integrated Teaching and Learning III	3
EDTP 627	Practicum for Alternative Certification Program (two semesters)	3
Mid-Point Assessment ¹		
EDTP 503	Developing Cross-Cultural Competence: Teaching Students from Diverse Backgrounds	3
Choose the technology course appropriate for your content certification area:		3
EDTP 581	Technology Applications for Mathematics Teaching	
EDTP 582	Technology Applications for Science Teachers	
EDTP 580	Digital Citizenship: Technology and Teaching	
EDTP 620	Reading and Writing Across the Curriculum	3
EDTP 678	Supporting the Second Year Alternative Certification Teacher I	1-3
EDTP 679	Supporting the Second Year Alternative Certification Teacher II	1-3
Minimum Total Hours		30

To maintain your Temporary Provisional Certificate, you MUST be enrolled in Alternative certification coursework.

¹ **Mid-Point Assessment:** Completion of all courses listed above; satisfactory dispositions assessment; no lower than 2.0 GPA in content methods class(es); 2.0 or higher GPA in Practicum for Alternative Certification. 2.50 cumulative GPA in content course requirements; satisfactory performance on all Hallmark Assessment Tasks; Target performance or better on all rubrics.

Certification Assessment: Satisfactory dispositions assessment; passing scores on PRAXIS content and PLT exams; completion of degree requirements.

Degree Assessment: All program course work with 3.0 cumulative GPA (and no more than a total of two "C"s" in degree courses); satisfactory performance on all Hallmark Assessment Tasks; Target performance or better on all rubrics.

Degree Candidacy: If not enrolled during the semester in which you are graduating, you will need to register for a degree candidacy as outlined in the Graduate Catalog (<http://catalog.louisville.edu/archive/2023-2024/graduate/general-policies-procedures-requirements/>).

Praxis Disclaimer: Teacher certification requirements are subject to change. Before registering for the test(s), please refer to the Education Professional Standards Board (EPSB) website at www.epsb.ky.gov/ (<http://www.epsb.ky.gov/>) for current requirements.

The Master of Arts in Teaching in Middle School Education and all related content areas prepares students to meet the requirements for certification and/or licensure. If you plan to pursue professional licensure or certification you should first determine your state's criteria for examination and licensure to see how/if our program meets those requirements prior to enrollment. We recommend that you also contact your state's licensing board directly to verify that the requirements have not changed recently and to answer any questions especially those regarding additional requirements beyond the degree.

More information about certification or licensure is available at the following website: <https://louisville.edu/oapa/licensure-information>

(<https://louisville.edu/oapa/licensure-information/>) (you may search by school or by the name of the program then click on 'View Details' to display the information).

For programs with an online option, more information about certification or licensure is available here: <https://louisville.edu/online/About-Us?tab=disclosures> (<https://louisville.edu/online/About-Us/?tab=disclosures>)

Music Composition (MM)



Master of Music in Music Composition

Unit: School of Music (<https://louisville.edu/music/>) (GU)

Program: Music Composition (<http://louisville.edu/music/academics/areas-of-study/music-composition/>)

Academic Plan Code(s): COMPMM

Program Information

The Master of Music Composition (MM) degree (<http://louisville.edu/music/academics/degrees-majors/master-of-music-degrees/>) is a two-year program of study designed to further the expertise and experience of students who have already completed an undergraduate degree in music composition (or its equivalent). While most students who are admitted into the MM Composition program have received undergraduate degrees in music composition, students without an undergraduate degree in music composition may be accepted in the MM composition program if they 1) demonstrate compositional skills and experience approximately equivalent to an undergraduate degree in composition, and 2) hold a Bachelor of Music degree or its equivalent.

General Information Regarding Academic Policies

- a. Detailed curricular and program offerings, including specific requirements and provisions for degree programs, are published in the university catalog. Students will be provided with copies of the "Handbook for Graduate Studies in Music", the "Guidelines for Preparation for the Graduate Music History Entrance Examination," and "Guidelines for Preparation for the Graduate Music Theory Entrance Examination." These documents are also available on the School of Music website (<http://louisville.edu/music/>).
- b. Students will be required to address any deficiencies revealed by entrance examinations in courses taken within the first two semesters of study. Credit toward the degree is not granted for review coursework.
- c. All students are required to complete Bibliography and Research Methods (MUS 607) by the end of the second semester of study (part-time students by the completion of 15 credit hours of graduate study). Upon satisfactory completion of requirements stated in Handbook sections B.2 and B.3, students will be considered in good standing.
- d. Students will complete a project appropriate to the field of study as defined by the faculty of their program. The completion of this project (public recital, thesis, professional paper) normally takes place in the last semester of graduate study. Preparation and presentation of a recital must follow the guidelines in the "Handbook for Graduate Studies in Music" and the preparation of a thesis must follow the "Guidelines for the Preparation and Processing of Theses (<http://louisville.edu/graduate/current-students/thesis-dissertation-information/>)" issued by the Graduate School. The preparation of a thesis in music composition must also follow the "School of Music Thesis Formatting Guidelines for MM in Composition (<http://louisville.edu/music/academics/areas-of-study/music-composition/documents/ULCompThesisGuidelines.pdf>)".
- e. In order to graduate, a student must be in good standing with a minimum cumulative grade point average of 3.0. No more than six (6) credit hours with any C or C+ grade will be accepted toward a degree, and no grade below a B-minus will be accepted for a course in the student's major subject area. Hours earned beyond the minimum in any curricular areas apply only to that area and cannot be assigned to another area in order to satisfy required credit. At least one-half of the total hours in graduate courses must be at the 600 level. Any exceptions to the program of study must be approved by the Graduate Studies Committee. A student whose cumulative GPA falls below 3.0, or who fails to satisfy the published performance criteria, will be placed on probation. Students are ordinarily not permitted to continue on probation for more than one semester.
- f. When all coursework and projects have been satisfactorily completed, the student becomes a candidate for the degree and is approved to take the graduate oral examination. A candidate who fails the oral examination at the end of one semester may not be given a second one before the end of the following semester. A candidate who fails the second oral examination will not be granted the degree of MM or MME from the University of Louisville.
- g. Upon request, a maximum of six (6) credit hours of earned graduate credit with a minimum grade of B may be transferred from accredited institutions that offer advanced degrees. Credit for applied music will not be transferred, but advanced standing may be awarded at a jury. Ensemble credits appropriate to the student's degree program may be considered for transfer, but not to exceed one (1) credit hour per semester. Music history and music theory credits will be evaluated for transfer by the Director of Graduate Studies and the respective faculty. Transfer of more than six (6) credit hours may be requested provided that they are not earned by extension, or as thesis or practicum hours, and that the residency requirement of 24 credit hours is maintained by the addition of the University of Louisville credits to the total program. Transfer of graduate credit hours within the University of Louisville toward a graduate degree in music may be requested provided that the minimum residence requirement of 24 credit hours is maintained.
- h. Students receiving a graduate assistantship (teaching, research, or service) will be provided with adequate training and will be required to adhere to university policies. Performance of duties in research and service by graduate assistants will be periodically evaluated. Students with teaching assistantships will be evaluated each semester.
- i. Part-time students (with the exception of those in the MME degree program) must participate in one ensemble for every 18 credit hours

of completed coursework. If part-time study precludes completing ensemble degree requirements, other coursework may be substituted.

Admission Requirements

- a. Applications for admission to a graduate program require the following:
 - i. Completed graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) and application fee
 - ii. Official transcripts for all previous post-secondary course work (all transcripts not in English must be certified as authentic and translated verbatim into English)
 - iii. At least two letters of recommendation
- b. Applications to specific degree programs require evidence of preparation for advanced study as follows:
 - i. In performance, an acceptable audition
 - ii. In academic specializations (music composition, music history, music theory), a portfolio of work appropriate to the field of study
 - iii. In music education, evidence of classroom teaching experience
- c. Applicants whose primary language is not English must show English language proficiency in one of the following ways:
 - i. Minimum TOEFL examination score of 213 on the computer-based test, or 79-80 on the internet based test, IELTS scores of at least 6.5 overall band score from the academic module exam or official Duolingo overall score of 105.
 - ii. Documentation of the award of a degree from a recognized English language institution.
- d. Applicants must possess a baccalaureate degree from an accredited institution in the area to be pursued in advanced studies, or they must present evidence of equivalent preparation.
- e. Applicants must have a minimum cumulative undergraduate grade point average of 2.75 on a 4-point scale.

Applicants who meet the requirements listed in items 1-5 will be considered for conditional admission for graduate study at the School of Music. For additional entrance requirements specific to the degree of interest, consult the section relevant to the degree program below. Entrance examinations in music history, theory and, if appropriate, jazz, will be administered before the first term of study. The School of Music provides guidelines to assist in preparing for the entrance examinations.

Any exception to the above expectations will be evaluated individually and will require a statement indicating criteria to be met in a specified time frame with provisions for monitoring progress and performance. Justification must be provided in writing and must be accepted by the faculty of the student's proposed program, the Director of Graduate Studies, and the Dean of the School of Music. Students who fail to meet performance standards or who do not meet other requirements as outlined in the letter of admission, program of study, or the catalog of the University of Louisville are subject to dismissal from their programs.

Prerequisites

- a. Bachelor of Music degree or equivalent.
- b. A demonstration, by examination, of skills and capacities in the following fields:
 - i. Written, aural, and keyboard harmony
 - ii. Melodic, harmonic, and rhythmic dictation
 - iii. Elementary counterpoint
 - iv. History and literature of music, and analytic understanding of musical forms and genres

- c. Evidence of preparation for advanced work in the area, as follows:
 - i. Applicants for the track in Music Composition must submit original works to indicate ability and technical facility in the field of composition.
 - ii. Students should have a thorough and practical knowledge of piano, as well as a thorough knowledge in the areas of string, brass, woodwind, and percussion instruments.

Program Requirements

Coursework

Code	Title	Hours
MUS 500	Music History Review ¹	0
MUS 400	Theory Review ¹	0
MUS 600	Graduate Oral Exam Preparation	0
MUS 607	Bibliography and Research Methods	3
	Music History Seminar (600 level)	3
	Music Theory ²	4
	Additional Music Theory or Music History Seminar (500 or 600 level) ³	3
	Select one of the following:	3
	MUS 647 Advanced Chromatic Harmony and Analysis	
	MUS 648 Advanced Post-Tonal Theory and Analysis	
	MUS 651 Schenkerian Analysis	
	MUS 653 Advanced Analysis	
	Ensemble ⁴	3
	Concentration Requirements (see tab)	13
	Thesis	4
Minimum Total Hours		36

Other Requirements

All students must pass an oral examination after all coursework is completed.

- ¹ These courses may be satisfied by passing the entrance examinations in these areas
- ² Students should take MUS 667 Introduction to Electronic and Computer Music and MUS 668 Advanced Topics in Computer Music.
- ³ Students in Electronic Music Composition Track should take AUDI 606 offered by Heuser Hearing Institute and Audiology Department in lieu of an additional Theory or History Seminar.
- ⁴ Three semesters of major ensemble or MUS 551 Studies in Improvisation (two (2) credit hours) and one (1) elective credit hour, which can be satisfied by a major ensemble or two semesters of minor ensemble, but may also be satisfied by an academic or applied elective at the 500 or 600 level.

Concentration Requirements

Music Composition Concentration

Code	Title	Hours
MUS 643	Advanced Private Instruction in Composition and Orchestration I ¹	3
MUS 644	Advanced Composition and Orchestration II ¹	3
MUS 645	Advanced Composition and Orchestration III ¹	3
MUS 669	Graduate Composition Seminar ²	0
	Applied Music ³	4

Total Credit Hours (Concentration)	13
Minimum Total Hours (Degree)	36

- ¹ Graduate composition majors are required to present public performances of their works within at least two semesters of their enrollment, for a total of at least 20 minutes of music. The graduate thesis will not be granted final approval until this requirement is met.
- ² Four semesters required (Co-requisite for MUS 643, MUS 644, MUS 645, or MUS 646).
- ³ 500 level or above# minimum of two semesters# may include Conducting or Seminar in Conducting MUS 659/MUS 660 (sections designated for students who are not conducting majors); may include Composition for Digital Media (MUS 683); but excludes additional semesters of Applied Composition.

Electronic Music Composition Concentration

Code	Title	Hours
MUS 688	Applied Acoustic Composition	2
MUS 683	Composition for Digital Media I ¹	2
MUS 684	Composition for Digital Media II ¹	2
MUS 685	Composition for Digital Media III	2
MUS 669	Graduate Composition Seminar ²	0
Applied Music ³		2
Computer Music or New Media Elective ⁴		2
Electives		1
Total Credit Hours (Concentration)		13
Minimum Total Hours (Degree)		36

- ¹ Graduate composition majors are required to present public performances of their works within at least two semesters of their enrollment, for a total of at least 20 minutes of music. The graduate thesis will not be granted final approval until this requirement is met.
- ² Co-requisite for MUS 643.
- ³ 500 level or above; minimum of two semesters# may include Conducting or Seminar in Conducting MUS 659/MUS 660 (sections designated for students who are not conducting majors); may include additional semester of Applied Composition.
- ⁴ Must be approved by the Director of Computer Music Studies.

Music Education (MAT)

Master of Arts in Teaching in Music Education

Unit: School of Music (<https://louisville.edu/music/>); College of Education and Human Development (<http://louisville.edu/education/>) (GE)

Department: Elementary, Middle, and Secondary Education (<https://louisville.edu/education/departments/mise/>)

Program Webpage (<https://louisville.edu/education/degrees/mat-me/>)
Academic Plan Code(s): EDMUMAT

Program Information

The MAT in Music Education program enables graduate students to earn their initial teaching certification for Kentucky, grades P-12. The teacher candidates learn to teach through instruction in pedagogy, child development, special education, technology, and diversity.

The Department of Teaching and Learning is committed to the highest standards of professional preparation. Our programs have sought and received national accreditation from the National Council for Accreditation of Teacher Education.

Graduates of initial teacher certification programs at the University of Louisville begin their teaching careers secure in the knowledge that they have been prepared for the real world of classrooms through a rigorous teacher preparation program.

The School of Music provides each student with a copy of the "Handbook for Graduate Music Students." Students are expected to read the Music Handbook and the Graduate Catalog and to follow regulations and procedures regarding their specific degree program at the University of Louisville.

Admission Requirements

Candidates to initial teacher certification programs are required to submit credentials supporting their academic ability, creativity and collaboration, communication and critical thinking skills, positive disposition, and commitment to the teaching profession. These credentials include test scores, transcripts, writing samples, and letters of recommendation which support the candidate's ability to succeed in a rigorous teacher education program. Competitive candidates will be invited to a formal, faculty interview (<http://louisville.edu/education/degrees/info/interview/>).

Candidates for admission should review the following which outlines the expectations of the teaching profession:

- Professional Code of Ethics for Kentucky School Personnel [PDF] (<http://louisville.edu/education/degrees/forms/Ethics%20Technology%20Forms%20August%202008.pdf>)
- CEHD Acceptable Use of Technology Agreement [PDF] (<http://louisville.edu/education/degrees/forms/Ethics%20Technology%20Forms%20August%202008.pdf>)
- Character and Fitness Questionnaire [PDF] (<http://louisville.edu/education/degrees/forms/character-fitness-questionnaire.pdf>)
- Professional Dispositions Rubric [PDF] (<http://louisville.edu/education/degrees/forms/dispositions-rubric.pdf>)
- Diversity Rubric [PDF] (<http://louisville.edu/education/degrees/forms/diversity-rubric.pdf>)
- Effective Written Communication Rubric [PDF] (<http://louisville.edu/education/degrees/forms/effective-written-communication-rubric.pdf>)

Application

Questions about the application should be directed to teacher@louisville.edu (<http://louisville.edu/cgi-bin/uofl.mail?teacher>). Candidates will be notified via e-mail regarding the admission decision no later than six weeks after the application deadline. Applicants who are selected for admission will receive information about a mandatory orientation session.

Application Deadlines

University of Louisville Music Education students applying for the MAT program should have already applied and been accepted, to the College of Education and Human Development teacher education program.

The teacher education admission deadline occurs February 1 each year and the application is typically submitted in the Spring semester of the sophomore year. For more information about this process, please click on

the "how to apply" tab at louisville.edu/education/degrees/bme (<http://louisville.edu/education/degrees/bme/>).

All students must be admitted to teacher education to enroll in MUED coursework.

University of Louisville undergraduate students who plan to pursue the MAT program will submit an online graduate application during the last semester of their senior year. Please see Admission Criteria below. Application deadline: March 1st for Fall admission

Admission Criteria for application to the MAT program

Candidates who meet the following criteria may be eligible to apply to the Master of Arts in Teaching program. Candidates considering applying to the MAT program should contact their Music Education faculty advisor prior to applying for admission. Admission is competitive. Candidates who meet minimum academic requirements are not guaranteed admission to the program.

- Application to Graduate School (<http://graduate.louisville.edu/apply/>)
- PRAXIS II exams (official scores or registration ticket) (<http://louisville.edu/education/degrees/info/mat-mse-praxis-ii/>)
- Bachelor's Degree from Accredited College or University (<http://louisville.edu/education/degrees/info/bachelors/>) with a minimum 2.75 Grade Point Average (University of Louisville students are not required to submit a UofL transcript)
- Prerequisite Course Requirements (<http://louisville.edu/education/degrees/info/mat-me-prereq/>)
- Letters of Recommendation (<http://louisville.edu/education/degrees/info/lor/>) (Letters submitted previously with teacher education application may be used.)
- Professional Writing Requirements (<http://louisville.edu/education/degrees/info/mat-mse-professional-statement/>)(Professional Writing Requirements submitted previously with teacher education application may be used.)

Program Requirements

Prerequisites

Completion of the pre-teacher education courses:

- ECPY 507/ECPY 607 Learning Theory and Human Growth and Development,
- EDTP 502/EDTP 602 Exploring Teaching in the Sociopolitical Contexts of P-12 Schools, and
- MUED 556 Special Methods in Secondary Teaching.

Appropriate bachelor's degree or specific music education content required. For specific admission requirements, contact the School of Music.

Professional Education Requirements

Code	Title	Hours
MUED 628	Qualitative Research Methods	2
MUED 629	Foundations of Music Education	2
MUED 630	Quantitative Research Methods & Materials in Music Education	2
MUED 639	Learning Theories in Music Education	2
MUS 511 or MUS 611	Principal Applied Study Applied Music	2

or MUS 659	Seminar in Conducting I	
MUS 512	Principal Applied Study	2
or MUS 612	Applied Music	
or MUS 660	Seminar in Conducting II	

Exit Requirements

MUED 607	Student Teaching Seminar I	3
MUED 609	Capstone Seminar (Second semester of student teaching) ¹	3
MUED 610	Music Student Teaching in the Elementary/Secondary Schools I (CE) ¹	6
MUED 611	Music Student Teaching in the Elementary/Secondary Schools II (CE) ¹	6

Minimum Total Hours **30**

¹ Electronic documentation of 200 hours of diverse and approved field experiences required prior to student teaching.

Certification Exit Assessment

B-minus or better in student teaching; satisfactory portfolio; passing score on Praxis, all certification and degree coursework completed with a 3.0 cumulative GPA; 2.5 GPA in the content area.

Degree Exit Assessment

B-minus or better in each student teaching placement, certification exit requirements plus a satisfactorily updated portfolio, and a 3.0 GPA overall.

Degree Candidacy

If not enrolled during the semester in which you are graduating, you must register for degree candidacy as outlined in the graduate catalog (see General Policies, Procedures and Requirements (<http://catalog.louisville.edu/archive/2023-2024/graduate/general-policies-procedures-requirements/>)).

Praxis Disclaimer

"Teacher certification requirements are subject to change. Before registering for certification test(s), please refer to the Education Professional Standards Board (EPSB) website at www.epsb.ky.gov (<http://www.epsb.ky.gov>) or ets.org/praxis/ky (<http://www.ets.org/praxis/ky/>) for current requirements."

The Master of Arts in Teaching in Music Education program prepares students to meet the requirements for certification and/or licensure. If you plan to pursue professional licensure or certification you should first determine your state's criteria for examination and licensure to see how/if our program meets those requirements prior to enrollment. We recommend that you also contact your state's licensing board directly to verify that the requirements have not changed recently and to answer any questions especially those regarding additional requirements beyond the degree.

More information about certification or licensure is available at the following website: <https://louisville.edu/oapa/licensure-information> (<https://louisville.edu/oapa/licensure-information/>) (you may search by school or by the name of the program then click on 'View Details' to display the information).

For programs with an online option, more information about certification or licensure is available here: <https://louisville.edu/online/About-Us?tab=disclosures> (<https://louisville.edu/online/About-Us/?tab=disclosures>)

Music Education (MME)

Master of Music Education in Music Education

Unit: School of Music (<http://louisville.edu/music/>) (GU)

Program Website (<https://louisville.edu/music/academics/areas-of-study/music-education/>)

Academic Plan Code(s): MUEDMME

Program Information

The Master of Music Education program allows an applied music minor in an instrument, voice, or conducting. Each degree program has specific prerequisites, entrance requirements, and programmatic expectations that are described in the relevant section of the catalog.

General Information Regarding Academic Policies

- a. Detailed curricular and program offerings, including specific requirements and provisions for degree programs, are published in the university catalog. Students will be provided with copies of the "Handbook for Graduate Studies in Music", the "Guidelines for Preparation for the Graduate Music History Entrance Examination," and "Guidelines for Preparation for the Graduate Music Theory Entrance Examination." These documents are also available on the School of Music website (<http://louisville.edu/music/>).
- b. Students will be required to address any deficiencies revealed by entrance examinations in courses taken within the first two semesters of study. Credit toward the degree is not granted for review coursework.
- c. All students are required to complete Bibliography and Research Methods (MUS 607) by the end of the second semester of study (part-time students by the completion of 15 credit hours of graduate study). Upon satisfactory completion of requirements stated in Handbook sections B.2 and B.3, students will be considered in good standing.
- d. Students will complete a project appropriate to the field of study as defined by the faculty of their program. The completion of this project (public recital, thesis, professional paper) normally takes place in the last semester of graduate study. Preparation and presentation of a recital must follow the guidelines in the "Handbook for Graduate Studies in Music" and the preparation of a thesis must follow the "Guidelines for the Preparation and Processing of Theses (<https://louisville.edu/graduate/current-students/thesis-dissertation-information/thesis-dissertation-information/>)" issued by the Graduate School. The preparation of a thesis in music composition must also follow the "School of Music Thesis Formatting Guidelines for MM in Composition (<http://louisville.edu/music/academics/areas-of-study/music-composition/documents/ULCompThesisGuidelines.pdf>)".
- e. In order to graduate, a student must be in good standing with a minimum cumulative grade point average of 3.0. No more than six (6) credit hours with any C or C+ grade will be accepted toward a degree, and no grade below a B-minus will be accepted for a course in the student's major subject area. Hours earned beyond the minimum in any curricular areas apply only to that area and cannot be assigned to another area in order to satisfy required credit. At least one-half of the total credit hours in graduate courses must be at the 600 level. Any exceptions to the program of study must be approved by the

Graduate Studies Committee. A student whose cumulative GPA falls below 3.0, or who fails to satisfy the published performance criteria, will be placed on probation. Students are ordinarily not permitted to continue on probation for more than one semester.

- f. When all coursework and projects have been satisfactorily completed, the student becomes a candidate for the degree and is approved to take the graduate oral examination. A candidate who fails the oral examination at the end of one semester may not be given a second one before the end of the following semester. A candidate who fails the second oral examination will not be granted the degree of MM or MME from the University of Louisville.
- g. Upon request, a maximum of six (6) credit hours of earned graduate credit with a minimum grade of B may be transferred from accredited institutions that offer advanced degrees. Credit for applied music will not be transferred, but advanced standing may be awarded at a jury. Ensemble credits appropriate to the student's degree program may be considered for transfer, but not to exceed one (1) credit hour per semester. Music history and music theory credits will be evaluated for transfer by the Director of Graduate Studies and the respective faculty. Transfer of more than six (6) credit hours may be requested provided that they are not earned by extension, or as thesis or practicum hours, and that the residency requirement of 24 credit hours is maintained by the addition of University of Louisville credits to the total program. Transfer of graduate hours within the University of Louisville toward a graduate degree in music may be requested provided that the minimum residence requirement of 24 credit hours is maintained.
- h. Students receiving a graduate assistantship (teaching, research, or service) will be provided with adequate training and will be required to adhere to university policies. Performance of duties in research and service by graduate assistants will be periodically evaluated. Students with teaching assistantships will be evaluated each semester.
- i. Part-time students (with the exception of those in the MME degree program) must participate in one ensemble for every 18 credit hours of completed coursework. If part-time study precludes completing ensemble degree requirements, other coursework may be substituted.

Admission Requirements

- a. Applications for admission to a graduate program require the following:
 - i. A completed graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>);
 - ii. An application fee;
 - iii. Official transcripts for all previous post-secondary course work (all transcripts not in English must be certified as authentic and translated verbatim into English); and
 - iv. At least two letters of recommendation.
- b. Applications to specific degree programs require evidence of preparation for advanced study as follows:
 - i. In performance, an acceptable audition;
 - ii. In academic specializations (music composition, music history, music theory), a portfolio of work appropriate to the field of study; and
 - iii. In music education, evidence of classroom teaching experience.
- c. Applicants whose primary language is not English must show English language proficiency in one of the following ways:
 - i. A minimum TOEFL examination score of 213 on the computer-based test, or 79-80 on the internet-based [test](#); [IELTS scores of at](#)

least 6.5 overall band score from the academic module exam or official Duolingo overall score of 105.

- ii. Documentation of the award of a degree from a recognized English language institution.
- d. Applicants must possess a baccalaureate degree from an accredited institution in the area to be pursued in advanced studies, or they must present evidence of equivalent preparation.
- e. Applicants must have a minimum cumulative undergraduate grade point average of 2.75 on a 4-point scale.

Applicants who meet the requirements listed in items 1-5 will be considered for conditional admission for graduate study at the School of Music. For additional entrance requirements specific to the degree of interest, see below.

Entrance examinations in music history, theory and, if appropriate, jazz, will be administered before the first term of study. The School of Music provides guidelines to assist in preparing for the entrance examinations.

Any exception to the above expectations will be evaluated individually and will require a statement indicating criteria to be met in a specified time frame with provisions for monitoring progress and performance. Justification must be provided in writing and must be accepted by the faculty of the student's proposed program, the Director of Graduate Studies, and the Dean of the School of Music.

Students who fail to meet performance standards or who do not meet other requirements as outlined in the letter of admission, program of study, or the catalog of the University of Louisville are subject to dismissal from their programs.

Prerequisites

- a. Bachelor of Music degree or equivalent
- b. Classroom teaching experience (exclusive of practice teaching and prior to, or concurrent with, graduate study)
- c. Demonstration, by examination, of skills and capacities in the following fields:
 - Written, aural, and keyboard harmony
 - Melodic, harmonic, and rhythmic dictation
 - Elementary counterpoint
 - History and literature of music, and analytic understanding of musical forms and genres

Program Requirements

Coursework

Code	Title	Hours
MUS 500	Music History Review ¹	0
MUS 400	Theory Review ¹	0
MUS 600	Graduate Oral Exam Preparation	0
MUS 607	Bibliography and Research Methods	3
MUED 628	Qualitative Research Methods	2
MUED 629	Foundations of Music Education	2
MUED 630	Quantitative Research Methods & Materials in Music Education	2
MUED 639	Learning Theories in Music Education	2
Music Education and Related Courses		5-6
Applied Music (chosen from major or minor performance fields, including Conducting)		4

Music History (500 or 600 level)	3
Music Theory (500 or 600 level)	2-3
Thesis ²	4
Minimum Total Hours	30

Other Requirements

It is recommended that full-time MME students enroll in ensembles during their degree program.

All students must pass an oral examination after all course work is completed.

¹ These course may be satisfied by passing the entrance examinations in these areas.

² Students are required to prepare either a thesis (four (4) credit hours) or a professional paper (without credit). In the latter case, four (4) credit hours of coursework will be determined by the student and graduate advisor in order to achieve the 30 credit hour minimum requirement.

Music History and Literature (MM)

Master of Music in Music History and Literature

Unit: School of Music (<http://louisville.edu/music/>) (GU)

Program Webpage (<https://louisville.edu/music/academics/areas-of-study/music-history/>)

Academic Plan Code(s): MUSIMM_MUH

Program Information

The School of Music offers training toward two specific graduate degrees in music: Master of Music requiring a minimum of 36 credit hours of graduate credit, and Master of Music Education requiring 30 credit hours. All programs require a minimum of 24 credit hours of residence at the University of Louisville. Major subjects in the Master of Music curriculum are music performance with concentrations in choral, wind, or orchestral conducting; instrumental, piano, or vocal performance; jazz performance or jazz composition and arranging; piano, string, or wind band pedagogy; music history; music theory; and music composition. The Master of Music Education program allows an applied music minor in an instrument, voice, or conducting. Each degree program has specific prerequisites, entrance requirements, and programmatic expectations that are described in the relevant section of the catalog.

The MM in Music History program, a two-year course of study, is particularly suitable for those who wish to explore further both the content and the methodologies by which the history of music may be critiqued and investigated. Applicants must have an undergraduate degree in music or its equivalent. Graduate students in music history undertake a series of seminars and complete a thesis under faculty supervision, as well as satisfy a foreign language requirement and a final oral examination. Past graduates in music history from the University of Louisville have made careers as musicologists, music librarians, arts administrators, and music critics.

General Information Regarding Academic Policies

- a. Detailed curricular and program offerings, including specific requirements and provisions for degree programs, are published in the university catalog. Students will be provided with copies of the "Handbook for Graduate Studies in Music", the "Guidelines for Preparation for the Graduate Music History Entrance Examination,"

- and "Guidelines for Preparation for the Graduate Music Theory Entrance Examination." These documents are also available on the School of Music website (<http://louisville.edu/music/>).
- b. Students will be required to address any deficiencies revealed by entrance examinations in courses taken within the first two semesters of study. Credit toward the degree is not granted for review coursework.
 - c. All students are required to complete MUS 607 Bibliography and Research Methods by the end of the second semester of study (part-time students by the completion of 15 credit hours of graduate study). Upon satisfactory completion of requirements stated in Handbook sections B.2 and B.3, students will be considered in good standing.
 - d. Students will complete a project appropriate to the field of study as defined by the faculty of their program. The completion of this project (public recital, thesis, professional paper) normally takes place in the last semester of graduate study. Preparation and presentation of a recital must follow the guidelines in the "Handbook for Graduate Studies in Music" and the preparation of a thesis must follow the "Guidelines for the Preparation and Processing of Theses (<http://louisville.edu/graduate/current-students/thesis-dissertation-information/>)" issued by the Graduate School. The preparation of a thesis in music composition must also follow the "School of Music Thesis Formatting Guidelines for MM in Composition (<http://louisville.edu/music/academics/areas-of-study/music-composition/documents/ULCompThesisGuidelines.pdf>)".
 - e. In order to graduate, a student must be in good standing with a minimum cumulative grade point average of 3.0. No more than six (6) credit hours with any C or C+ grade will be accepted toward a degree, and no grade below a B-minus will be accepted for a course in the student's major subject area. Hours earned beyond the minimum in any curricular areas apply only to that area and cannot be assigned to another area in order to satisfy required credit. At least one-half of the total credit hours in graduate courses must be at the 600 level. Any exceptions to the program of study must be approved by the Graduate Studies Committee. A student whose cumulative GPA falls below 3.0, or who fails to satisfy the published performance criteria, will be placed on probation. Students are ordinarily not permitted to continue on probation for more than one semester.
 - f. When all coursework and projects have been satisfactorily completed, the student becomes a candidate for the degree and is approved to take the graduate oral examination. A candidate who fails the oral examination at the end of one semester may not be given a second one before the end of the following semester. A candidate who fails the second oral examination will not be granted the degree of MM or MME from the University of Louisville.
 - g. Upon request, a maximum of six (6) credit hours of earned graduate credit with a minimum grade of B may be transferred from accredited institutions that offer advanced degrees. Credit for applied music will not be transferred, but advanced standing may be awarded at a jury. Ensemble credits appropriate to the student's degree program may be considered for transfer, but not to exceed one (1) credit hour per semester. Music history and music theory credits will be evaluated for transfer by the Director of Graduate Studies and the respective faculty. Transfer of more than six (6) credit hours may be requested provided that they are not earned by extension, or as thesis or practicum hours, and that the residency requirement of 24 credit hours is maintained by the addition of University of Louisville credits to the total program. Transfer of graduate hours within the University of Louisville toward a graduate degree in music may be requested provided that the minimum residence requirement of 24 credit hours is maintained.
- h. Students receiving a graduate assistantship (teaching, research, or service) will be provided with adequate training and will be required to adhere to university policies. Performance of duties in research and service by graduate assistants will be periodically evaluated. Students with teaching assistantships will be evaluated each semester.
 - i. Part-time students (with the exception of those in the MME degree program) must participate in one ensemble for every 18 credit hours of completed coursework. If part-time study precludes completing ensemble degree requirements, other coursework may be substituted.
- ## Admission Requirements
- a. Applications for admission to a graduate program require the following:
 - i. Completed graduate application (<http://louisville.edu/graduate/apply/>) and application fee
 - ii. Official transcripts for all previous post-secondary course work (all transcripts not in English must be certified as authentic and translated verbatim into English)
 - iii. At least two letters of recommendation
 - b. Applications to specific degree programs require evidence of preparation for advanced study as follows:
 - i. In performance, an acceptable audition
 - ii. In academic specializations (music composition, music history, music theory), a portfolio of work appropriate to the field of study
 - iii. In music education, evidence of classroom teaching experience
 - c. Applicants whose primary language is not English must show English language proficiency in one of the following ways:
 - i. A minimum TOEFL examination score of 213 on the computer-based test, or 79-80 on the internet-based [test; IELTS scores of at least 6.5 overall band score from the academic module exam or official Duolingo overall score of 105.](#)
 - ii. Documentation of the award of a degree from a recognized English language institution.
 - d. Applicants must possess a baccalaureate degree from an accredited institution in the area to be pursued in advanced studies, or they must present evidence of equivalent preparation.
 - e. Applicants must have a minimum cumulative undergraduate grade point average of 2.75 on a 4-point scale.
- Applicants who meet the requirements listed in items 1-5 will be considered for conditional admission for graduate study at the School of Music. For additional entrance requirements specific to the degree of interest, consult the section relevant to the degree program below. Entrance examinations in music history, theory and, if appropriate, jazz, will be administered before the first term of study. The School of Music provides guidelines to assist in preparing for the entrance examinations.
- Any exception to the above expectations will be evaluated individually and will require a statement indicating criteria to be met in a specified time frame with provisions for monitoring progress and performance. Justification must be provided in writing and must be accepted by the faculty of the student's proposed program, the Director of Graduate Studies, and the Dean of the School of Music. Students who fail to meet performance standards or who do not meet other requirements as outlined in the letter of admission, program of study, or the catalog of the University of Louisville are subject to dismissal from their programs.

Program Requirements

Coursework

Code	Title	Hours
MUS 500	Music History Review ¹	0
MUS 400	Theory Review ¹	0
MUS 600	Graduate Oral Exam Preparation	0
MUS 607	Bibliography and Research Methods	3
Music History Seminar (600-level)		3
Music Theory		2
Additional Music Theory or Music History Seminar (500- or 600-level)		3
Select one of the following Analysis courses:		3
MUS 647	Advanced Chromatic Harmony and Analysis	
MUS 648	Advanced Post-Tonal Theory and Analysis	
MUS 651	Schenkerian Analysis	
MUS 653	Advanced Analysis	
Ensemble (3 semesters of major ensemble) ²		3
Thesis		4
Music History and Literature Concentration		
Music History Seminars (600-level)		6
MUS 593	Perspectives and Practices of Ethno/musicology	1
MUS 593	Perspectives and Practices of Ethno/musicology	1
Electives (500-600 level) ³		7
Minimum Total Hours		36

Other Requirements

All students must pass an oral examination after all course work is completed. Students must have or acquire reading proficiency in a language other than English (and that is not their native language). The student can fulfill this requirement either by passing an exam or taking three courses of instruction in that language. Students will choose their foreign language study in consultation with their advisor and should choose a language that will further their studies in musicology/ethnomusicology as well as their own research interests.

¹ These courses may be satisfied by passing the entrance examinations in these areas.

² Ethno/musicology pro-seminar is offered once a year and MM Music History students will need to take MUS 593 once each year for a total of 2 years and 2 credit hours.

³ Students are encouraged to take at least one course outside the School of Music, chosen in consultation with their advisor, to fulfill their elective requirement. Electives should be taken at the appropriate graduate course level(s).

Music Performance (MM)

Master of Music in Music Performance

Unit: School of Music (<https://louisville.edu/music/>) (GU)

Program Website (<https://louisville.edu/music/academics/areas-of-study/instrumental-vocal-performance/>)

Academic Plan Code(s): See Concentration Requirements tab.

Program Information

The School of Music offers training toward two specific graduate degrees in music: Master of Music (MM) requiring a minimum of 36 credit hours of graduate credit, and Master of Music Education (MME) requiring

30 credit hours. All programs require a minimum of 24 credit hours of residence at the University of Louisville. Major subjects in the Master of Music curriculum are music performance with concentrations in choral, wind, or orchestral conducting; instrumental, piano, or vocal performance; jazz performance or jazz composition and arranging; piano, string, or wind band pedagogy; music history; music theory; and music composition. The Master of Music Education program allows an applied music minor in an instrument, voice, or conducting. Each degree program has specific prerequisites, entrance requirements, and programmatic expectations that are described in the relevant section of the catalog.

The Department of Performance Studies is dedicated to the development of the musical and technical abilities of the music student through classical performance training on the individual performance instruments. The department offers training in voice and in the brass, wind, percussion, string and keyboard instruments, as well as conducting. The lessons are presented in a one-on-one, nurturing environment. The faculty members are all active performers. A student's mastery of a major performance instrument is an extremely important component of advanced musical training, and opportunities for performance experience are provided through various venues. The faculty also coach chamber music and teach courses regarding the literature for and pedagogy of their various instruments.

General Information Regarding Academic Policies

- Detailed curricular and program offerings, including specific requirements and provisions for degree programs, are published in the university catalog. Students will be provided with copies of the "Handbook for Graduate Studies in Music," the "Guidelines for Preparation for the Graduate Music History Entrance Examination," and "Guidelines for Preparation for the Graduate Music Theory Entrance Examination." These documents are also available on the School of Music website (<http://louisville.edu/music/>).
- Students will be required to address any deficiencies revealed by entrance examinations in courses taken within the first two semesters of study. Credit toward the degree is not granted for review coursework.
- All students are required to complete Bibliography and Research Methods (MUS 607) by the end of the second semester of study (part-time students by the completion of 15 credit hours of graduate study). Upon satisfactory completion of requirements stated in Handbook sections B.2 and B.3, students will be considered in good standing.
- Students will complete a project appropriate to the field of study as defined by the faculty of their program. The completion of this project (public recital, thesis, professional paper) normally takes place in the last semester of graduate study. Preparation and presentation of a recital must follow the guidelines in the "Handbook for Graduate Studies in Music" and the preparation of a thesis must follow the "Guidelines for the Preparation and Processing of Theses (<https://louisville.edu/graduate/current-students/thesis-dissertation-information/thesis-dissertation-information/>)" issued by the Graduate School. The preparation of a thesis in music composition must also follow the "School of Music Thesis Formatting Guidelines for MM in Composition (<http://louisville.edu/music/academics/areas-of-study/music-composition/documents/ULCompThesisGuidelines.pdf>)".
- In order to graduate, a student must be in good standing with a minimum cumulative grade point average of 3.0. No more than six (6) credit hours with any C or C+ grade will be accepted toward a degree, and no grade below a B-minus will be accepted for a course in the student's major subject area. Hours earned beyond the minimum in

any curricular areas apply only to that area and cannot be assigned to another area in order to satisfy required credit. At least one-half of the total credit hours in graduate courses must be at the 600 level. Any exceptions to the program of study must be approved by the Graduate Studies Committee. A student whose cumulative GPA falls below 3.0, or who fails to satisfy the published performance criteria, will be placed on probation. Students are ordinarily not permitted to continue on probation for more than one semester.

- f. When all coursework and projects have been satisfactorily completed, the student becomes a candidate for the degree and is approved to take the graduate oral examination. A candidate who fails the oral examination at the end of one semester may not be given a second one before the end of the following semester. A candidate who fails the second oral examination will not be granted the degree of MM or MME from the University of Louisville.
- g. Upon request, a maximum of six (6) credit hours of earned graduate credit with a minimum grade of B may be transferred from accredited institutions that offer advanced degrees. Credit for applied music will not be transferred, but advanced standing may be awarded at a jury. Ensemble credits appropriate to the student's degree program may be considered for transfer, but not to exceed one (1) credit hour per semester. Music history and music theory credits will be evaluated for transfer by the Director of Graduate Studies and the respective faculty. Transfer of more than six (6) credit hours may be requested provided that they are not earned by extension, or as thesis or practicum hours, and that the residency requirement of 24 credit hours is maintained by the addition of University of Louisville credits to the total program. Transfer of graduate hours within the University of Louisville toward a graduate degree in music may be requested provided that the minimum residence requirement of 24 credit hours is maintained.
- h. Students receiving a graduate assistantship (teaching, research, or service) will be provided with adequate training and will be required to adhere to university policies. Performance of duties in research and service by graduate assistants will be periodically evaluated. Students with teaching assistantships will be evaluated each semester.
- i. Part-time students (with the exception of those in the MME degree program) must participate in one ensemble for every 18 credit hours of completed coursework. If part-time study precludes completing ensemble degree requirements, other coursework may be substituted.

Admission Requirements

- a. Applications for admission to a graduate program require the following:
 - i. A completed graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>);
 - ii. An application fee;
 - iii. Official transcripts for all previous post-secondary course work (all transcripts not in English must be certified as authentic and translated verbatim into English); and
 - iv. At least two letters of recommendation.
- b. Applications to specific degree programs require evidence of preparation for advanced study as follows:
 - i. In performance, an acceptable audition;
 - ii. In academic specializations (music composition, music history, music theory), a portfolio of work appropriate to the field of study; and
 - iii. In music education, evidence of classroom teaching experience.

- c. Applicants whose primary language is not English must show English language proficiency in one of the following ways:
 - i. A minimum TOEFL examination score of 213 on the computer-based test, or 79-80 on the internet-based test; IELTS scores of at least 6.5 overall band score from the academic module exam or official Duolingo overall score of 105.
 - ii. Documentation of the award of a degree from a recognized English language institution.
- d. Applicants must possess a baccalaureate degree from an accredited institution in the area to be pursued in advanced studies, or they must present evidence of equivalent preparation.
- e. Applicants must have a minimum cumulative undergraduate grade point average of 2.75 on a 4-point scale.

Applicants who meet the requirements listed in items 1-5 will be considered for conditional admission for graduate study at the School of Music. For additional entrance requirements specific to the degree of interest, see below.

Entrance examinations in music history, theory and, if appropriate, jazz, will be administered before the first term of study. The School of Music provides guidelines to assist in preparing for the entrance examinations.

Any exception to the above expectations will be evaluated individually and will require a statement indicating criteria to be met in a specified time frame with provisions for monitoring progress and performance. Justification must be provided in writing and must be accepted by the faculty of the student's proposed program, the Director of Graduate Studies, and the Dean of the School of Music.

Students who fail to meet performance standards or who do not meet other requirements as outlined in the letter of admission, program of study, or the catalog of the University of Louisville are subject to dismissal from their programs.

Program Requirements

Coursework

Code	Title	Hours
Core Curriculum Courses		
MUS 500	Music History Review ¹	0
MUS 400	Theory Review ¹	0
MUS 600	Graduate Oral Exam Preparation	0
MUS 607	Bibliography and Research Methods	3
	Music History Seminar (500 or 600 level)	3
	Music Theory (500 or 600 level) ²	4
	Applied Study (600 level) ³	8
Concentration Coursework (see Concentration Requirements tab)		18
MUS 697	Graduate Recital ⁴	0
Minimum Total Hours		36

Other Requirements

All students must pass an oral examination after all course work is completed.

¹ These courses may be satisfied by passing the entrance examinations in these areas.

² For students in the Concentration in Jazz, Jazz Theory (MUS 539-02) is recommended. For students in the Concentration in Jazz Composition

and Arranging, MUS 654 is required and Jazz Theory (MUS 539-02) is recommended.

³ The applied course numbers for the degree concentrations are as follows: Choral Conducting: MUS 601, MUS 602, MUS 659, MUS 660. (Students may substitute additional semesters of MUS 659 and MUS 660 for MUS 601 and MUS 602 at the discretion of the Director of Choral Activities). Orchestral/Wind Conducting/Wind Band Pedagogy/Piano Pedagogy/String Pedagogy: MUS 601, MUS 602, MUS 611, MUS 612. Jazz Performance: MUS 605, MUS 606, MUS 615, MUS 616. Students enrolled for applied jazz composition and arranging may not also get credit for MUS 656 or MUS 657. Instrumental/Organ/Piano/Vocal Performance: MUS 603, MUS 604.

⁴ Taken concurrently with final semester of applied study. Performance and pedagogy degree recitals are expected to show a performer's musical maturity and versatility. A degree recital program must be approved by the student's applied instructor. Minimum recital lengths will be determined by the appropriate area faculty and indicated on all applied syllabi.

Concentration Requirements

Concentration in Choral Conducting

Academic Plan Code(s): MUSIMM_CCN

Code	Title	Hours
MUS 611	Applied Music ¹	2
MUS 530	Choral Literature I	2
MUS 531	Choral Literature II	2
MUS 559	Instrumental Conducting and Score Reading	2
Ensemble (one per semester)		4
Music Electives ²		6
Minimum Total Hours		18

Concentration in Orchestral Conducting

Academic Plan Code(s): MUSIMM_OCN

Code	Title	Hours
MUS 659	Seminar in Conducting I (Instrumental)	2
MUS 660	Seminar in Conducting II (Instrumental)	2
MUS 659	Seminar in Conducting I (Choral) ³	2
MUS 660	Seminar in Conducting II (Choral) ³	2
MUS 686	Orchestral Literature I	2
MUS 687	Orchestral Literature II	2
Ensemble (two semesters of major ensemble)		2
Music Electives ⁴		4
Minimum Total Hours		18

Concentration in String Pedagogy

Academic Plan Code(s): MUSIMM_STP

Code	Title	Hours
MUS 538	Studies in Pedagogy (MUS 538-06 String Pedagogy)	1
MUS 538	Studies in Pedagogy (Instrument Specific)	1

MUS 678	Advanced Pedagogy (Instrument Specific)	2
MUS 677	Business Aspects of String Studio Teaching	2
MUS 563	Literature (MUS 563-02 String Literature)	1
MUS 563	Literature (Instrument Specific)	1
Major or Minor Ensemble ⁵		4
Music Electives ⁶		6
Minimum Total Hours		18

Concentration in Wind Band Pedagogy

Academic Plan Code(s): MUSIMM_WBP

Code	Title	Hours
MUS 659	Seminar in Conducting I (Instrumental)	2
MUS 660	Seminar in Conducting II (Instrumental)	2
MUS 559	Instrumental Conducting and Score Reading	2
MUS 561	Literature (Band Literature)	2
MUS 663	Graduate Band Pedagogy and Educational Wind Band Literature	2
Select one of the following sequences:		2
Sequence One:		
MUS 533 & MUS 534	Functional Study	2
Sequence Two:		
MUS 521 & MUS 522	Secondary Applied Study	2
Major Ensemble (one per semester)		4
Music Electives ⁷		2
Minimum Total Hours		18

Concentration in Wind Conducting

Academic Plan Code(s): MUSIMM_WCN

Code	Title	Hours
MUS 659	Seminar in Conducting I (either Instrumental or Choral as per advising)	2
MUS 660	Seminar in Conducting II (either Instrumental or Choral as per advising)	2
MUS 559	Instrumental Conducting and Score Reading	2
MUS 561	Literature (Band Literature)	2
Ensemble (one per semester)		4
Music Electives ⁸		6
Minimum Total Hours		18

Concentration in Instrumental Music

Academic Plan Code(s): MUSIMM_INS

Code	Title	Hours
MUS 613	Applied Music	4
MUS 614	Applied Music	4
Ensemble ⁵		4

Music Electives ⁹	6
Minimum Total Hours	18

Other Requirements

Students are expected to present a public recital that comprises no less than sixty minutes of music and follows the guidelines governing public recitals.

Concentration in Jazz Performance

Academic Plan Code(s): MUSIMM_JAZ

Code	Title	Hours
MUS 539	Studies in Jazz (MUS 539-01 Jazz Style and Analysis)	2
MUS 539	Studies in Jazz (MUS 539-03 Standard Jazz Repertoire)	2
MUS 655	Advanced Jazz Improvisation	2
Jazz Combo (one per semester)		2
Jazz Ensemble or Jazz Repertory Ensemble (one per semester) ¹⁰		4
Music Electives ¹¹		6
Minimum Total Hours		18

Concentration in Jazz Composition and Arranging

Academic Plan Code(s): MUSIMM_JAR

Code	Title	Hours
MUS 539	Studies in Jazz (MUS 539-01 Jazz Style and Analysis)	2
MUS 539	Studies in Jazz (MUS 539-03 Standard Jazz Repertoire)	2
MUS 655	Advanced Jazz Improvisation	2
Jazz Combo (one per semester)		2
Jazz Ensemble or Jazz Repertory Ensemble (one per sem) ¹⁰		4
Music Electives ¹¹		6
Minimum Total Hours		18

Concentration in Organ Performance

Academic Plan Code(s): MUSIMM_ORG

Code	Title	Hours
MUS 613	Applied Music	4
MUS 614	Applied Music	4
Ensemble		2
Major Subject and Music Electives ¹²		8
Minimum Total Hours		18

Concentration in Piano Pedagogy

Academic Plan Code(s): MUSIMM_PDG

Code	Title	Hours
MUS 671	Advanced Piano Pedagogy I	2
MUS 672	Advanced Piano Pedagogy II	2
MUS 673	Advanced Piano Pedagogy III	2
MUS 674	Advanced Piano Pedagogy IV	2
MUS 561	Literature (Piano Literature I)	2
MUS 562	Literature (Piano Literature II)	2
Ensemble ¹³		2
Music Electives ¹⁴		4
Minimum Total Hours		18

Other Requirements

Students are required to present a sixty minute lecture-demonstration recital that focuses on pedagogical aspects of selected works, includes a minimum of thirty minutes of memorized solo repertoire, and follows the guidelines governing public recitals.

Concentration in Piano Performance

Academic Plan Code(s): MUSIMM_PNO

Code	Title	Hours
MUS 613	Applied Music	4
MUS 614	Applied Music	4
MUS 561	Literature (Piano Literature I)	2
MUS 562	Literature (Piano Literature II)	2
Piano Pedagogy (500 or 600 level)		2
Ensemble ¹³		2
Music Electives ¹⁴		2
Minimum Total Hours		18

Other Requirements

Students are expected to present a public recital that comprises no less than sixty minutes of music and follows the guidelines governing public recitals.

Concentration in Vocal Performance

Academic Plan Code(s): MUSIMM_VOC

Code	Title	Hours
MUS 613	Applied Music	4
MUS 614	Applied Music	4
Select two of the following:		4
MUS 561	Literature (Vocal Literature I)	
MUS 562	Literature (Vocal Literature II)	
MUS 661	Literature (Graduate Vocal Literature I)	
MUS 662	Literature (Graduate Vocal Literature II)	
MUS 640	Advanced Vocal Pedagogy	2
Ensemble ¹⁵		2
Music Electives ¹⁶		2
Minimum Total Hours		18

Other Requirements

Students are expected to present a public recital that comprises no less than sixty minutes of music and follows the guidelines governing public recitals.

- ¹ Must be taken in the semester of the graduate degree recital.
- ² May include such courses as pedagogy, literature, the student's principal applied instrument, instrumental conducting, or a maximum of two (2) additional ensemble credit hours.
- ³ One two (2) credit hour course required of all orchestral conducting majors, the second two (2) credit hour course optional depending on the individual needs of the student in consultation with their advisor. If the student only needs two (2) credit hours of choral, they will be required to have two additional music electives.
- ⁴ To be chosen from courses in music theory, literature, the student's principal applied instrument, or a maximum of two (2) additional ensemble credit hours.
- ⁵ In comparing degree programs, please note that among universities, many times ensembles are required, but without credit. Our required ensembles are included in the number of required degree hours. New Music Ensemble is acceptable for the concentration in String Pedagogy.
- ⁶ Up to two (2) additional ensemble credit hours are acceptable.
- ⁷ To be chosen from pedagogy, literature, research methods, learning themes, the student's principal applied instrument, a maximum of two semesters of functional applied study, or a maximum of two (2) additional ensemble credit hours if performing on a secondary instrument.
- ⁸ To be chosen from pedagogy, literature, the student's principal applied instrument, a maximum of two semesters of functional applied study, or a maximum of two (2) additional ensemble credit hours.
- ⁹ Students are encouraged to choose courses in literature or pedagogy; up to two (2) additional ensemble credit hours are acceptable.
- ¹⁰ A student may substitute two additional Jazz Combo courses for one of the Jazz Ensemble courses.
- ¹¹ Applied Jazz or Ensemble will not meet this requirement; applied study in a secondary area is acceptable.
- ¹² Must include Organ Literature and Church Music Literature; additional Applied Organ or Ensemble will not meet this requirement. Applied study in a secondary area is acceptable.
- ¹³ At least three semesters of ensemble to be chosen from Piano Ensemble or New Music Ensemble.
- ¹⁴ Additional Applied Piano or Ensemble will not meet this requirement; applied study in a secondary area is acceptable.
- ¹⁵ Suggested ensembles include Opera Theatre and New Music Ensemble.
- ¹⁶ Additional Applied Voice or Ensemble will not meet this requirement; applied study in a secondary area is acceptable.

Music Theory (MM)

Master of Music in Music Theory

Unit: School of Music (<http://louisville.edu/music/>) (GU)

Program Website (<https://louisville.edu/music/academics/areas-of-study/music-theory/>)

Academic Plan Code(s): MUSIMM_MUT

Program Information

The School of Music offers training toward two specific graduate degrees in music: Master of Music requiring a minimum of 36 credit hours of graduate credit, and Master of Music Education requiring 30 credit hours. All programs require a minimum of 24 credit hours of residence at the University of Louisville.

The Music Theory area is committed to the instillment of a core of performative and analytical skills that will serve musical practitioners throughout their careers. In graduate courses, students apply these core skills to the study of a broad musical repertory. Students pursuing a master's degree in music theory work closely with our faculty to develop their interests in research and pedagogy and prepare themselves for careers in teaching and performance.

General Information Regarding Academic Policies

- a. Detailed curricular and program offerings, including specific requirements and provisions for degree programs, are published in the university catalog. Students will be provided with copies of the "Handbook for Graduate Studies in Music", the "Guidelines for Preparation for the Graduate Music History Entrance Examination," and "Guidelines for Preparation for the Graduate Music Theory Entrance Examination." These documents are also available on the School of Music website (<http://louisville.edu/music/>).
- b. Students will be required to address any deficiencies revealed by entrance examinations in courses taken within the first two semesters of study. Credit toward the degree is not granted for review coursework.
- c. All students are required to complete MUS 607 Bibliography and Research Methods by the end of the second semester of study (part-time students by the completion of 15 credit hours of graduate study). Upon satisfactory completion of requirements stated in Handbook sections B.2 and B.3, students will be considered in good standing.
- d. Students will complete a project appropriate to the field of study as defined by the faculty of their program. The completion of this project (public recital, thesis, professional paper) normally takes place in the last semester of graduate study. Preparation and presentation of a recital must follow the guidelines in the "Handbook for Graduate Studies in Music" and the preparation of a thesis must follow the "Guidelines for the Preparation and Processing of Theses (<https://louisville.edu/graduate/current-students/thesis-dissertation-information/thesis-dissertation-information/>)" issued by the Graduate School. The preparation of a thesis in music composition must also follow the "School of Music Thesis Formatting Guidelines for MM in Composition (<http://louisville.edu/music/academics/areas-of-study/music-composition/documents/ULCompThesisGuidelines.pdf>)".
- e. In order to graduate, a student must be in good standing with a minimum cumulative grade point average of 3.0. No more than six (6) credit hours with any C or C+ grade will be accepted toward a degree, and no grade below a B-minus will be accepted for a course in the student's major subject area. Hours earned beyond the minimum in any curricular areas apply only to that area and cannot be assigned to another area in order to satisfy required credit. At least one-half of the total credit hours in graduate courses must be at the 600 level. Any exceptions to the program of study must be approved by the Graduate Studies Committee. A student whose cumulative GPA falls below 3.0, or who fails to satisfy the published performance criteria, will be placed on probation. Students are ordinarily not permitted to continue on probation for more than one semester.

- f. When all coursework and projects have been satisfactorily completed, the student becomes a candidate for the degree and is approved to take the graduate oral examination. A candidate who fails the oral examination at the end of one semester may not be given a second one before the end of the following semester. A candidate who fails the second oral examination will not be granted the degree of MM or MME from the University of Louisville.
- g. Upon request, a maximum of six (6) credit hours of earned graduate credit with a minimum grade of B may be transferred from accredited institutions that offer advanced degrees. Credit for applied music will not be transferred, but advanced standing may be awarded at a jury. Ensemble credits appropriate to the student's degree program may be considered for transfer, but not to exceed one (1) credit hour per semester. Music history and music theory credits will be evaluated for transfer by the Director of Graduate Studies and the respective faculty. Transfer of more than six (6) credit hours may be requested provided that they are not earned by extension, or as thesis or practicum hours, and that the residency requirement of 24 credit hours is maintained by the addition of University of Louisville credits to the total program. Transfer of graduate hours within the University of Louisville toward a graduate degree in music may be requested provided that the minimum residence requirement of 24 credit hours is maintained.
- h. Students receiving a graduate assistantship (teaching, research, or service) will be provided with adequate training and will be required to adhere to university policies. Performance of duties in research and service by graduate assistants will be periodically evaluated. Students with teaching assistantships will be evaluated each semester.
- i. Part-time students (with the exception of those in the MME degree program) must participate in one ensemble for every 18 credit hours of completed coursework. If part-time study precludes completing ensemble degree requirements, other coursework may be substituted.
- d. Applicants must possess a baccalaureate degree from an accredited institution in the area to be pursued in advanced studies, or they must present evidence of equivalent preparation.
- e. Applicants must have a minimum cumulative undergraduate grade point average of 2.75 on a 4-point scale.

Applicants who meet the requirements listed in items 1-5 will be considered for conditional admission for graduate study at the School of Music. For additional entrance requirements specific to the degree of interest, see below.

Entrance examinations in music history, theory and, if appropriate, jazz, will be administered before the first term of study. The School of Music provides guidelines to assist in preparing for the entrance examinations.

Any exception to the above expectations will be evaluated individually and will require a statement indicating criteria to be met in a specified time frame with provisions for monitoring progress and performance. Justification must be provided in writing and must be accepted by the faculty of the student's proposed program, the Director of Graduate Studies, and the Dean of the School of Music.

Students who fail to meet performance standards or who do not meet other requirements as outlined in the letter of admission, program of study, or the catalog of the University of Louisville are subject to dismissal from their programs.

Program Requirements

Coursework

Code	Title	Hours
Core Coursework		
MUS 400	Theory Review ¹	0
MUS 500	Music History Review ¹	0
MUS 509	Major Ensembles (Three Semesters)	3
MUS 600	Graduate Oral Exam Preparation	0
MUS 607	Bibliography and Research Methods	3
	Music History Seminar (600-level) ²	3
	Music Theory	3
	Additional Music Theory or Music History Seminar (500- or 600-level)	3
	Select one of the following:	3
	MUS 647 Advanced Chromatic Harmony and Analysis	
	MUS 648 Advanced Post-Tonal Theory and Analysis	
	MUS 653 Advanced Analysis	
	Thesis	4
	Concentration Requirements (see tab)	14
	Minimum Total Hours	36

Other Requirements

All students must pass an oral examination after all course work is completed.

¹ These courses may be satisfied by passing the entrance examinations in these areas.

² One course of HUM 661, HUM 662, or HUM 663 may be substituted for three music elective credits.

Admission Requirements

- a. Applications for admission to a graduate program require the following:
 - i. A completed graduate application (<http://louisville.edu/graduate/apply/>);
 - ii. An application fee;
 - iii. Official transcripts for all previous post-secondary course work (all transcripts not in English must be certified as authentic and translated verbatim into English);
 - iv. At least two letters of recommendation.
- b. Applications to specific degree programs require evidence of preparation for advanced study as follows:
 - i. In performance, an acceptable audition;
 - ii. In academic specializations (music composition, music history, music theory), a portfolio of work appropriate to the field of study;
 - iii. In music education, evidence of classroom teaching experience.
- c. Applicants whose primary language is not English must show English language proficiency in one of the following ways:
 - i. A minimum TOEFL examination score of 550 on the paper-based test, 213 on the computer-based test, or 79-80 on the internet-based test; official IELTS scores of at least 6.5 overall band score from the academic module exam; Duolingo overall score of 105.
 - ii. Documentation of the award of a degree from a recognized English language institution.

Music Theory Concentration

Code	Title	Hours
MUS 641	Pedagogy of Theory I	3
MUS 651	Schenkerian Analysis	3
MUS 694	Research (2 semesters)	4
MUS 665	Music Theory Seminar (4 semesters)	0
Music Electives ¹		4
Minimum Total Hours		14

¹ One course of HUM 661, HUM 662, or HUM 663 may be substituted for three music elective credits.

Nurse Practitioner - APRN (Post-Graduate Certificate)

Post-Graduate Certificate in Nurse Practitioner (APRN)

Unit: School of Nursing (<https://louisville.edu/nursing/>)
Academic Plan Code(s): NUPRCNPAGPA, NUPRCNPAGP, NUPRCNPNP, NUPRCNPPSY, NUPRCNPNP, NURSCPGPAC

Program Information

The post-graduate APRN certificate program prepares registered nurses for eligibility and licensure for national certification in an advanced practice specialty. Students will progress through a specialized curriculum that focuses on the student's area of interest. Registered nurses holding a Master of Science degree in nursing or a terminal degree (e.g., PhD, EdD, DNP) are eligible to apply.

Six specialties are available:

- Adult Gerontology Acute Care Nurse Practitioner
- Adult Gerontology Primary Care Nurse Practitioner
- Family Nurse Practitioner
- Psychiatric/Mental Health Nurse Practitioner
- Neonatal Nurse Practitioner
- Pediatric Acute Care Nurse Practitioner (next admission 2024)

Please see Certificate Requirements tab for specific requirements for each specialty.

Admissions Criteria

A holistic review process is used when considering applications for admission. The holistic review considers multiple criteria for admissions, including the applicant's professional career goals, academic capabilities, grade point averages, work experience, leadership, and community engagement.

The University of Louisville School of Nursing participates in Nursing's Centralized Application Service (<https://nursingcas.org/>) (NursingCAS), which provides you with an online application. NursingCAS collects and processes your application documents and verifies your transcripts.

The School of Nursing will receive your application information from NursingCAS and use it to make admission decisions.

Only registered nurses holding a Master of Science degree in nursing or a terminal degree (e.g., PhD, EdD, DNP) are eligible to apply. To be

considered for admission to the post graduate APRN certificate program, the following items must be submitted:

To the Graduate School

- University of Louisville Graduate Admission Application (<https://louisville.edu/graduate/apply/>) with a reduced application fee. Online submission is preferred.

To NursingCAS

- Official Transcripts** representing all college course work. Graduate program degree in nursing must be from a regionally accredited institution and a CCNE-, ACEN-, or NLN-accredited nursing program. Recommended graduate cumulative grade point average of 3.0 on a 4.0 scale.
- Applicants who have attended a college or university outside of the United States are also required to submit a course-by-course evaluation of their transcripts through World Education Services (<https://www.wes.org/>) (WES) or Educational Credential Evaluators (<https://www.ece.org/>) (ECE). Recommended graduate cumulative grade point average of 3.0 on a 4.0 scale.
- Two letters of recommendation** from individuals who can speak to your academic and/or professional capabilities and potential. Recommendations should be requested from former faculty members, current or immediate past employers, or other nursing/health professionals. Recommendations must have been completed within the last year.
- Current resume or curriculum vitae (CV)** including RN license number.
- Unencumbered RN license** from a US state board of nursing.
- Response to all questions** asked on the Nursing CAS application.
- Students for whom English is not their primary language must show **English Proficiency** (<https://louisville.edu/graduate/futurestudents/application-directions/>).

Additional requirements for acute care specialties:

Neonatal specialty: Minimum of one year of RN clinical experience in a Level III or Level IV NICU required prior to admission. All NNP applicants must have the equivalent of two years of full-time RN clinical experience (within the last 5 years) in Level III and/or IV NICU inpatient settings before beginning clinical courses.

Adult-Gerontology Acute Care specialty: One year of RN experience in the ICU or one year of RN experience in any area and a commitment to complete one year of RN clinical practice in an ICU before beginning clinical courses. Applicants that do not have one year of RN experience at the point of application, but will complete one year prior to beginning clinical courses, will satisfy the work requirement.

Pediatric Acute Care specialty: One year of RN experience in an acute care setting or one year of RN experience in any area and a commitment to complete one year in an acute care setting before beginning clinical courses.

Prerequisite Requirements

Code	Title	Hours
Core Courses		
NURS 740	Advanced Pharmacology ¹	3
NURS 741	Advanced Pathophysiology	4

NURS 742	Advanced Physical Assessment ¹	3
Minimum Total Hours		10

Advanced Practice Registered Nurse (APRN) Specialty Requirements

Minimum clinical hour requirements: APRNs seeking an additional specialty will complete a minimum of 504 population-specific clinical hours. All other students will be required to complete a minimum of 672 patient care clinical hours and 84 professional role clinical hours. Pediatric acute care nurse practitioner specialty requires a minimum of 588 clinical hours if there is no documentation of well-child care in primary certification. 1 credit hour of clinical coursework is equivalent to 84 clinical clock hours.

A program of study for postgraduate applicants will be created based upon a gap analysis of all official college transcripts and professional credentials.

A minimum grade point average of 3.0 is required in all course work to meet graduation requirements.

Adult Gerontology Acute Nurse Practitioner

Academic Plan Code(s): NUPRCNPAGPA

The patient population of the adult-gerontology acute care nurse practitioner practice includes the entire spectrum of adults including adolescents, adults, and aging adults. Acute care nurse practitioners work in the intensive care unit (ICU), progressive care unit (PCU), other hospital units and specialty provider's offices.

Code	Title	Hours
Courses		
NURS 754	Clinical Reasoning in Advanced Practice Nursing ²	1
NURS 776	Procedures and Diagnostics for the Acute Care NP I	1
NURS 777	The Adult/Gerontology Acute Care NP Role	1
NURS 779	Diagnosis & Management in Acute Care I	4
NURS 780	Procedures and Diagnostics for the Acute Care NP II	2
NURS 781	Diagnosis & Management in Acute Care II	3
NURS 783	Diagnosis & Management in Acute Care III	1
NURS 792	Pharmacology for the Acute Care APRN	1
NURS 807	The Professional Role of the Advanced Practice Nurse ²	3
NURS 726	Clinical Practicum for the MSN NP I (168 clinical hours)	2
NURS 727	Clinical Practicum for the MSN NP II (168 clinical hours)	2
NURS 728	Clinical Practicum for the MSN NP III (168 clinical hours)	2
NURS 729	Clinical Practicum for the MSN NP IV (168 clinical hours)	2
NURS 840	Clinical Seminar I	1
NURS 841	Clinical Seminar II	1
NURS 842	(84 clinical hours) ²	
Minimum Total Hours		27

Adult Gerontology Primary Care Nurse Practitioner

Academic Plan Code(s): NUPRCNPAGP

The patient population of the adult-gerontology primary care nurse practitioner practice includes the entire spectrum of the adults including adolescents, adults and aging adults. An Adult-Gerontology NP could work in the following settings: internal medicine offices, health clinics, a specialty office, hospital rehab or a hospice unit; long term care facility, fast-track ER, or adult urgent care facility.

Code	Title	Hours
Courses		
NURS 753	Adolescent Well Child Theory	1
NURS 754	Clinical Reasoning in Advanced Practice Nursing ²	1
NURS 755	Diagnosis and Management of Adult Health in Primary Care	4
NURS 756	Procedures & Diagnostics for Adult Health	2
NURS 757	Diagnosis and Management of Women's Health in Primary Care	2
NURS 758	Diagnosis and Management of Mental Health in Primary Care	2
NURS 759	Diagnosis and Management of the Older Adult in Primary Care	3
NURS 807	The Professional Role of the Advanced Practice Nurse ²	3
NURS 726	Clinical Practicum for the MSN NP I (168 clinical hours)	2
NURS 727	Clinical Practicum for the MSN NP II (168 clinical hours)	2
NURS 728	Clinical Practicum for the MSN NP III (168 clinical hours)	2
NURS 729	Clinical Practicum for the MSN NP IV (168 clinical hours)	2
NURS 840	Clinical Seminar I	1
NURS 841	Clinical Seminar II	1
NURS 842	(84 clinical hours) ²	
Minimum Total Hours		28

Family Nurse Practitioner

Academic Plan Code(s): NUPRCNFPN

The family nurse practitioner (FNP) is prepared to care for individuals and families across the lifespan. An FNP could work in the following settings: health clinic, adult or pediatric primary care office, inpatient rehab or hospice unit, school, fast-track ER, or urgent care facility.

Code	Title	Hours
Courses		
NURS 754	Clinical Reasoning in Advanced Practice Nursing ²	1
NURS 755	Diagnosis and Management of Adult Health in Primary Care	4
NURS 756	Procedures & Diagnostics for Adult Health	2
NURS 757	Diagnosis and Management of Women's Health in Primary Care	2
NURS 758	Diagnosis and Management of Mental Health in Primary Care	2

NURS 759	Diagnosis and Management of the Older Adult in Primary Care	3
NURS 761	Pediatric & Adolescent Well Child Theory	2
NURS 762	Diagnosis & Management of Pediatrics in Primary Care	2
NURS 807	The Professional Role of the Advanced Practice Nurse ²	3
NURS 726	Clinical Practicum for the MSN NP I (168 clinical hours)	2
NURS 727	Clinical Practicum for the MSN NP II (168 clinical hours)	2
NURS 728	Clinical Practicum for the MSN NP III (168 clinical hours)	2
NURS 729	Clinical Practicum for the MSN NP IV (168 clinical hours)	2
NURS 840	Clinical Seminar I	1
NURS 841	Clinical Seminar II	1
NURS 842	(84 clinical hours) ²	
Minimum Total Hours		31

Neonatal Nurse Practitioner

Academic Plan Code(s): NUPRCNPNP

Neonatal nurse practitioners (NNP) provide health care to neonates, infants, and children through 2 years of age. The NNP role includes the assessment, diagnosis, and treatment of acute and chronic illness in neonates, infants, and children.

Code	Title	Hours
Courses		
NURS 763	Advanced Neonatal Physiology & Pathophysiology I	3
NURS 764	Neonatal Diagnostic Reasoning I	1
NURS 765	Advance Neonatal Physiology & Pathophysiology II	3
NURS 766	Neonatal Diagnostic Reasoning II	1
NURS 767	Neonatal Residency I	3
NURS 768	Neonatal Residency II	3
NURS 769	Neonatal Residency III	3
NURS 784	Advanced Neonatal Pharmacology	3
NURS 785	Advanced Neonatal Assessment	3
NURS 786	Human Embryology and Genetics	3
NURS 844	Advanced Practice Care: Birth up to 2 years of age	2
NURS 807	The Professional Role of the Advanced Practice Nurse ²	3
NURS 840	Clinical Seminar I	1
NURS 841	Clinical Seminar II	1
NURS 842	(84 clinical hours) ²	
Minimum Total Hours		33

Psychiatric Mental Health Nurse Practitioner

Academic Plan Code(s): NURPCNPPSY

Psychiatric mental health nurse practitioners (PMHNP) focus on individuals across the lifespan, families, and populations across the lifespan at risk for developing and/or having a diagnosis of psychiatric disorders or mental health problems. This includes assessment,

diagnosis, and management of mental health and psychiatric disorders across the lifespan.

Code	Title	Hours
Courses		
NURS 770	Adv. Psychiatric Assessment of Psychopathology and Clinical Interviewing Across the Lifespan	2
NURS 771	Foundations of Individual and Group Psychotherapy for the Adv. Practice Psychiatric Mental Health NP	2
NURS 772	Psychopharmacology	2
NURS 773	Diagnosis and Management of Children and Adolescents in Adv. Psychiatric-Mental Health Nursing	3
NURS 774	Diagnosis and Management of Adults in Advanced Practice Psychiatric-Mental Health Nursing	3
NURS 775	Diagnosis and Management of Special Populations in Psychiatric Mental Health Nursing	2
NURS 794	The Psychiatric Mental Health Nurse Practitioner Role	2
NURS 726	Clinical Practicum for the MSN NP I (168 clinical hours)	2
NURS 727	Clinical Practicum for the MSN NP II (168 clinical hours)	2
NURS 728	Clinical Practicum for the MSN NP III (168 clinical hours)	2
NURS 729	Clinical Practicum for the MSN NP IV (168 clinical hours)	2
NURS 807	The Professional Role of the Advanced Practice Nurse ²	3
NURS 840	Clinical Seminar I	1
NURS 841	Clinical Seminar II	1
NURS 842	(84 clinical hours) ²	
Minimum Total Hours		29

Pediatric Acute Care Nurse Practitioner

Academic Plan Code(s): NURSCGPAC

The pediatric acute care nurse practitioner (PACNP) is educationally prepared to provide advanced nursing care to meet the specialized needs of infants, children, adolescents, and young adults with complex, acute, critical, and chronic health conditions, including the delivery of acute care services, as delineated in the acute care nurse practitioner competencies. PACNPs work in hospital-based pediatric acute care areas, pediatric intensive care units, pediatric cardiac intensive care units, emergency departments, and pediatric specialty practices that manage acutely ill patients.

Code	Title	Hours
Courses		
NURS 754	Clinical Reasoning in Advanced Practice Nursing ²	1
NURS 761	Pediatric & Adolescent Well Child Theory ³	2
NURS 762	Diagnosis & Management of Pediatrics in Primary Care ³	2
NURS 800	Pathophysiology for Pediatric Acute Care	1
NURS 801	Pharmacology for Pediatric Acute Care	1
NURS 802	Procedures for Pediatric Acute Care	1

NURS 803	Diagnosis and Management for Pediatric Acute Care I: Special Needs in Chronic Illness	3
NURS 804	Diagnosis and Management for Pediatric Acute Care II: Acute Illness	2
NURS 805	Diagnosis and Management for Pediatric Acute Care III: Critical Illness	3
NURS 806	The Pediatric Acute Care Nurse Practitioner Role	1
NURS 807	The Professional Role of the Advanced Practice Nurse ²	3
NURS 726	Clinical Practicum for the MSN NP I (168 clinical hours)	2
NURS 727	Clinical Practicum for the MSN NP II (168 clinical hours)	2
NURS 728	Clinical Practicum for the MSN NP III (168 clinical hours)	2
NURS 729	Clinical Practicum for the MSN NP IV (168 clinical hours)	2
NURS 840	Clinical Seminar I	1
NURS 841	Clinical Seminar II	1
NURS 842	(84 clinical hours) ²	1
Minimum Total Hours		31

¹ Course not required for Neonatal specialty.

² Course not required for APRNs seeking a second specialty.

³ Course not required for APRN with PNP or FNP certification and evidence of previous coursework.

Graduates from the APRN certificate program are eligible for national certification in an advanced practice specialty upon graduation; however, educational preparation does not guarantee professional licensure. If you have questions regarding Kentucky APRN licensure, please contact the Kentucky Board of Nursing (<https://kbn.ky.gov/Pages/advanced-practice-registered-nurse.aspx>). For APRN licensure questions in other states, please contact the respective state board of nursing (<https://ncsbn.org/contact-bon.htm>).

Nursing - Clinical Nurse Leader (MSN)

Master of Science in Nursing - Clinical Nurse Leader

Unit: School of Nursing (<http://louisville.edu/nursing/>) (GN)

Program Website (<https://louisville.edu/nursing/academics/mepn-program/mepn/>)

Academic Plan Code(s): NUCLMSNEPN

Program Information

The Master of Science in Nursing - Clinical Nurse Leader is designed for individuals with a baccalaureate degree in another area who want to pursue a career in nursing. This program is referred to as the Master's Entry into Professional Nursing (MEPN). The accelerated program provides the student with a general foundation in nursing and additional skills in the application of evidence based practice and leadership. Upon completion of the program, the student receives both Bachelor of Science in Nursing and Master of Science in Nursing Degrees. Graduates are eligible to take the National Council Licensure Examination (NCLEX-RN) for registered nursing licensure and the Clinical Nurse Leader Certification Examination offered by the AACN Commission on Nurse Certification.

The University of Louisville School of Nursing is an essential partner of a research intensive academic health science center in a nationally recognized university serving a metropolitan community. The School of Nursing is a community in which faculty, staff and students collaborate to promote excellence in the profession of nursing. This is accomplished through research and scholarship that inform undergraduate and graduate education, support evidence-based practice and foster advances in nursing science.

Students are prepared to demonstrate excellence in nursing science, practice and leadership, in a variety of settings for the benefit of clients across the lifespan and to meet the evolving health care needs of society.

Admissions Policies—Master of Science in Nursing - Clinical Nurse Leader

Students may be admitted into the Master of Science in Nursing (MSN) - Clinical Nurse Leader program for a summer term only. This degree is a graduate program for entry into practice, not advanced practice.

Criteria for Admission to the Master of Science in Nursing - Clinical Nurse Leader

A holistic review process is used when considering applications for admission to the master's program. The holistic review considers multiple criteria for admissions, such as: the applicant's professional goals, academic capabilities, and grade point averages. The admissions review also considers the number of completed prerequisite courses.

The University of Louisville School of Nursing participates in Nursing's Centralized Application Service (<http://nursingcas.org/about/>) (NursingCAS), which provides you with an online application. NursingCAS collects and processes your application documents and verifies your transcripts. The School of Nursing will receive your application information from NursingCAS and use it to make admission decisions.

To be considered for admission to Degree Status, the following items must be submitted:

To the Graduate School

- Completed online University of Louisville Graduate Admissions Application (<https://louisville.edu/graduate/apply/>), including a reduced application fee.

To NursingCAS

- Official transcripts representing all college coursework with a recommended cumulative grade point average of at least 3.0 on a 4.0 scale. A bachelor's degree must be earned from a regionally accredited institution.
- Applicants who have attended a college or university outside the United States are also required to submit a course by course evaluation of their transcript through World Education Services (WES) (<http://wes.org/>) or Educational Credential Evaluators (ECE) (<http://ece.org/>). Please note that transcript evaluations can sometimes take several weeks.
- Two letters of recommendation. Within the NursingCAS application, submit names and email addresses of individuals who can speak to your academic and/or professional capabilities and potential.
- Goal statement, 500 words or less, explaining your reasons for seeking the program, including short- and long-term professional

cnl-certification/) offered by the AACN Commission on Nurse Certification.

Nursing (MSN)

Master of Science in Nursing

Unit: School of Nursing (<http://louisville.edu/nursing/>) (GN)
Academic Plan Code(s): NURSMSN, NURSMSNAAG, NURSMSNAGP, NURSMSNFNP, NURSMSNNNP, NURSMSNPAC, NURSMSNPSY

Program Information

The Master of Science in Nursing (MSN) is designed for baccalaureate-prepared nurses.

The University of Louisville School of Nursing is an essential partner of a research intensive academic health science center in a nationally recognized university serving a metropolitan community. The School of Nursing is a community in which faculty, staff and students collaborate to promote excellence in the profession of nursing. This is accomplished through research and scholarship that inform undergraduate and graduate education, support evidence-based practice and foster advances in nursing science.

Students are prepared to demonstrate excellence in nursing practice as a nurse practitioner in a variety of settings for the diagnosis and management of clients across the lifespan and to meet the evolving health care needs of society.

Admissions Policies—MSN/School of Nursing

Criteria for Admission to the Master of Science in Nursing

A holistic review process is used when considering applications for admission to the master's program. The holistic review considers multiple criteria for admissions, including the applicant's professional career goals, academic capabilities, GPA, work experience, leadership and community engagement.

The University of Louisville School of Nursing participates in Nursing's Centralized Application Service (<https://nursingcas.org/>) (NursingCAS), which provides you with an online application. NursingCAS collects and processes your application documents and verifies your transcripts.

The School of Nursing will receive your application information from NursingCAS and use it to make admission decisions.

To be considered for admission to the Master of Science in Nursing program, the following items must be submitted:

To the Graduate School

Completed Graduate Admissions Application (<https://louisville.edu/graduate/futurestudents/apply-materials/application/>) including a reduced application fee.

To NursingCAS

- **Official transcripts** representing all college coursework. BSN degree must be from a regionally accredited institution and a CCNE-, ACEN- or NLN-accredited nursing program. Recommended undergraduate cumulative grade point average of 3.0 on a 4.0 grading scale. If applicable, recommended graduate cumulative grade point average of 3.0 on 4.0 scale.

- Applicants who have attended a college or university outside the United States are also required to submit a course-by-course evaluation of their transcript through World Education Services (WES) (<http://wes.org/>) or Educational Credential Evaluators (ECE) (<http://ece.org/>). Please note that transcript evaluations can sometimes take several weeks.
- **Two letters of recommendation** from individuals who can speak of academic and/or professional nursing capabilities and potential. Recommendation should be **requested** from former faculty, current or immediate past **employers**, or other nursing/health professionals. **Recommendations** must be completed within the last year.
- **Current resume or curriculum vitae (CV)**
- **Verification of unencumbered RN license** from a US state board of nursing (Prior to clinicals a RN license in the state of Kentucky or a compact state is required).
- **Responses to all questions** asked on the NursingCAS application.
- Students for whom English is not their primary language must show Proof of English Proficiency (<https://louisville.edu/graduate/futurestudents/application-directions/>).

Additional requirements for acute care specialties:

- **Neonatal specialty:** Minimum of one year of RN clinical experience in a Level III or Level IV NICU prior to admission. All NNP applicants must have the equivalent of two years of full-time RN clinical experience within the last five years in Level III and/or Level IV NICU inpatient setting before beginning clinical courses
- **Adult-Gerontology Acute:** One year of RN experience in the ICU or one year of RN experience in any area and a commitment to complete one year of RN clinical practice in the ICU prior to beginning clinical courses. Applicants that do not have one year of RN experience at the point of application, but will complete one year before beginning clinical courses, will satisfy the work requirement.
- **Pediatric Acute Care:** One year of RN experience in an acute care setting or one year of RN experience in any area and a commitment to complete one year of RN clinical practice in an acute care setting prior to beginning clinical courses. Applicants that do not have one year of RN experience at the point of application, but will complete one year before beginning clinical courses, will satisfy the work requirement.

Code	Title	Hours
Core Courses Required for Specialties		
NURS 607	Foundational Concepts of Evidence Based Practice	3
NURS 643	Quality and Safety in Advanced Practice Nursing	2
NURS 657	Health Promotion and Disease Prevention in Culturally Diverse and Vulnerable Populations.	3
NURS 740	Advanced Pharmacology (Not required for Neonatal Nurse Practitioner Specialty)	3
NURS 741	Advanced Pathophysiology	4
NURS 742	Advanced Physical Assessment (Not required for Neonatal Nurse Practitioner Specialty)	3
NURS 749	The Business of Healthcare	2
NURS 807	The Professional Role of the Advanced Practice Nurse	3
NURS 840	Clinical Seminar I	1
NURS 841	Clinical Seminar II	1

NURS 842	(84 clinical hours) ²	1
NURS 726	Clinical Practicum for the MSN NP I (168 clinical hours) ¹	2
NURS 727	Clinical Practicum for the MSN NP II (168 clinical hours) ¹	2
NURS 728	Clinical Practicum for the MSN NP III (168 clinical hours) ¹	2
NURS 729	Clinical Practicum for the MSN NP IV (168 clinical hours) ¹	2
Minimum Total Hours		34

Minimum clinical hour requirements:

A minimum of 672 patient care clinical hours (8 credit hours) is required for all specialties with the exception of the Neonatal Nurse Practitioner (NNP). The NNP requires a minimum of 756 patient care clinical hours or 9 credit hours. One (1) credit hour equals 84 clinical contact hours. Students complete and additional 84 hours of professional role clinical.

Master of Science in Nursing - Adult-Gerontology Acute Care Nurse Practitioner

Academic Plan Code(s): NURSMSNAAG

The patient population of the adult-gerontology acute care nurse practitioner practice includes the entire spectrum of adults including adolescents, adults and aging adults. Acute care nurse practitioners work in the intensive care unit (ICU), progressive care unit (PCU), other hospital units and specialty provider's offices.

Code	Title	Hours
Courses		
NURS 754	Clinical Reasoning in Advanced Practice Nursing	1
NURS 776	Procedures and Diagnostics for the Acute Care NP I	1
NURS 777	The Adult/Gerontology Acute Care NP Role	1
NURS 779	Diagnosis & Management in Acute Care I	4
NURS 780	Procedures and Diagnostics for the Acute Care NP II	2
NURS 781	Diagnosis & Management in Acute Care II	3
NURS 783	Diagnosis & Management in Acute Care III	1
NURS 792	Pharmacology for the Acute Care APRN	1
Minimum Total Hours		14

Master of Science in Nursing - Adult-Gerontology Primary Care Nurse Practitioner

Academic Plan Code(s): NURSMSNAGP

The patient population of the adult-gerontology primary care nurse practitioner practice includes the entire spectrum of the adults including adolescents, adults and aging adults. An Adult-Gero NP could work in the following settings: internal medicine offices; health clinics; a specialty office; hospital rehab or a hospice unit; long term care facility; fast-track ER or adult urgent care facility.

Code	Title	Hours
Courses		
NURS 753	Adolescent Well Child Theory	1
NURS 754	Clinical Reasoning in Advanced Practice Nursing	1

NURS 755	Diagnosis and Management of Adult Health in Primary Care	4
NURS 756	Procedures & Diagnostics for Adult Health	1
NURS 757	Diagnosis and Management of Women's Health in Primary Care	2
NURS 758	Diagnosis and Management of Mental Health in Primary Care	2
NURS 759	Diagnosis and Management of the Older Adult in Primary Care	3
Minimum Total Hours		14

Master of Science in Nursing - Family Nurse Practitioner

Academic Plan Code(s): NURSMSNFNP

The family nurse practitioner (FNP) is prepared to care for individuals and families across the lifespan. A family NP could work in the following settings: health clinic, adult or pediatric primary care office, inpatient rehab or hospice unit, a school, fast-track ER or urgent care facility.

Code	Title	Hours
Courses		
NURS 754	Clinical Reasoning in Advanced Practice Nursing	1
NURS 755	Diagnosis and Management of Adult Health in Primary Care	4
NURS 756	Procedures & Diagnostics for Adult Health	1
NURS 757	Diagnosis and Management of Women's Health in Primary Care	2
NURS 758	Diagnosis and Management of Mental Health in Primary Care	2
NURS 759	Diagnosis and Management of the Older Adult in Primary Care	3
NURS 761	Pediatric & Adolescent Well Child Theory	2
NURS 762	Diagnosis & Management of Pediatrics in Primary Care	2
Minimum Total Hours		17

Master of Science in Nursing - Neonatal Nurse Practitioner

Academic Plan Code(s): NURSMSNNNP

Neonatal nurse practitioners (NNP) provide health care to neonate, infants, and children through 2 years of age. The NNP role includes the assessment, diagnosis and treatment of acute and chronic illness in neonate.

Code	Title	Hours
Courses		
NURS 763	Advanced Neonatal Physiology & Pathophysiology I	3
NURS 764	Neonatal Diagnostic Reasoning I	1
NURS 765	Advance Neonatal Physiology & Pathophysiology II	3
NURS 766	Neonatal Diagnostic Reasoning II	1
NURS 784	Advanced Neonatal Pharmacology	3
NURS 785	Advanced Neonatal Assessment	3

NURS 786	Human Embryology and Genetics	3
NURS 844	Advanced Practice Care: Birth up to 2 years of age	2
NURS 767	Neonatal Residency I (252 clinical hours) ¹	3
NURS 768	Neonatal Residency II (252 clinical hours) ¹	3
NURS 769	Neonatal Residency III (252 clinical hours) ¹	3
Minimum Total Hours		28

Master of Science in Nursing - Pediatric Acute Care Nurse Practitioner

Academic Plan Code(s): NURSMSN PAC

Pediatric acute care nurse practitioners (PACNP) are prepared to provide advanced nursing care to meet the needs of infants, children, adolescents, and young adults with complex, acute, critical, and chronic health conditions.

Code	Title	Hours
NURS 754	Clinical Reasoning in Advanced Practice Nursing	1
NURS 761	Pediatric & Adolescent Well Child Theory	2
NURS 762	Diagnosis & Management of Pediatrics in Primary Care	2
NURS 800	Pathophysiology for Pediatric Acute Care	1
NURS 801	Pharmacology for Pediatric Acute Care	1
NURS 802	Procedures for Pediatric Acute Care	1
NURS 803	Diagnosis and Management for Pediatric Acute Care I: Special Needs in Chronic Illness	3
NURS 804	Diagnosis and Management for Pediatric Acute Care II: Acute Illness	2
NURS 805	Diagnosis and Management for Pediatric Acute Care III: Critical Illness	3
NURS 806	The Pediatric Acute Care Nurse Practitioner Role	1
Minimum Total Hours		17

Master of Science in Nursing - Psychiatric Mental Health Nurse Practitioner

Academic Plan Code(s): NURSMSN PSY

Psychiatric mental health nurse practitioners (PMHNP) focus on individuals across the lifespan, families, and populations across the lifespan at risk for developing and/or having a diagnosis of psychiatric disorders or mental health problems. This includes assessment, diagnosis, and management of mental health and psychiatric disorders across the lifespan.

Code	Title	Hours
Courses		
NURS 770	Adv. Psychiatric Assessment of Psychopathology and Clinical Interviewing Across the Lifespan	2
NURS 771	Foundations of Individual and Group Psychotherapy for the Adv. Practice Psychiatric Mental Health NP	2
NURS 772	Psychopharmacology	2
NURS 773	Diagnosis and Management of Children and Adolescents in Adv. Psychiatric-Mental Health Nursing	3

NURS 774	Diagnosis and Management of Adults in Advanced Practice Psychiatric-Mental Health Nursing	3
NURS 775	Diagnosis and Management of Special Populations in Psychiatric Mental Health Nursing	2
NURS 794	The Psychiatric Mental Health Nurse Practitioner Role	2
Minimum Total Hours		16

¹ This course contains population specific patient care clinical hours.

These hours should be considered direct patient care clinical hours.

² This course contains 84 advanced practice professional role clinical hours. These hours should not be considered as direct patient care.

Master of Science in Nursing graduates from the UofL School of Nursing are prepared to apply for Advanced Practice Registered Nurse (APRN) certification in their population track upon graduation; however, educational preparation does not guarantee professional licensure. If you have questions regarding Kentucky APRN licensure, please contact the Kentucky Board of Nursing (<https://kbn.ky.gov/Pages/advanced-practice-registered-nurse.aspx>). For APRN licensure questions in other states, please contact the respective state board of nursing (<https://ncsbn.org/contact-bon.htm>).

Nursing (PhD)

Doctor of Philosophy in Nursing

Unit: School of Nursing (<http://louisville.edu/nursing/>) (GN)

Program Website (<http://louisville.edu/nursing/academics/phd/>)

Academic Plan Code(s): NURSPHDBSN, NURSPHDMSN, NURSPHDDNP

Program Information

The Doctor of Philosophy in Nursing is designed to prepare nurse scientists to assume a variety of roles in education, research, leadership, and health policy. The program prepares nurse scientists to:

- Generate knowledge, test interventions and evaluate outcomes to reduce risks of illness/disability and promote quality of life;
- Collaborate with other disciplines to improve the delivery of healthcare;
- Assume research, leadership, executive, public policy and/or teaching roles; and,
- Affect health policy through the application of scientific knowledge.

Three progression options are offered: 1) BSN to PhD 2) MSN to PhD and 3) DNP to PhD. The BSN to PhD students complete the first year of coursework at the master's level. The MSN to PhD and DNP to PhD students enter directly into doctoral coursework.

The PhD in Nursing consists of at least 55 credit hours of coursework beyond the baccalaureate degree, 40 credit hours beyond a master's degree and 31 credit hours beyond a DNP, plus dissertation credit hours. Full and part-time programs of study are available.

Graduate Student Assistantship

A limited number of Graduate Student Assistantships are available.

Graduate Student Assistantship is a financial award to a full-time graduate student for the period of one year. To be eligible for the award, the student must be admitted to a graduate degree program in nursing or be a continuing graduate student. For the full year, the award includes tuition, health insurance, and a monthly stipend. The student is required

to maintain full-time study during the award period and participate for 20 hours per week in a Research Assistant or Teaching Assistant role in the School of Nursing. Assistantships are awarded on a competitive basis. The assistantship financial support is limited to a maximum of five years for the BSN-PhD students and four years for MSN-PhD students.

Admissions Criteria

The holistic review process is used when considering applications for admission to the PhD Program in Nursing. The holistic review considers multiple criteria for admission, including the applicant's professional career goals, academic capabilities, GPA, research interest, RN license, area of expertise, community engagement, and potential for a scholarly career in nursing.

The University of Louisville School of Nursing participates in Nursing's Centralized Application Service (NursingCAS), which allows for an online application. NursingCAS collects and processes your application documents and verifies transcripts from institutions in United States.

The School of Nursing will receive application information from NursingCAS (<https://nursingcas.org/>) and use it to make an admission decision.

To be considered for admission to Degree Status, the following items must be submitted:

To the Graduate School

- University of Louisville Graduate Application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) with a reduced application fee.

To NursingCAS

- Official Transcripts** from all undergraduate and graduate college coursework. An undergraduate cumulative grade point average of 3.0 or higher on a 4.0 scale is recommended for BSN-PhD and a graduate cumulative grade point average of 3.25 or higher on a 4.0 scale is recommended for the MSN-PhD and DNP-PhD.
 - For applicants with a degree conferred in the United States the degree must be from a regionally-accredited institution and an NLN- or CCNE- accredited nursing program.
 - International applicants with transcripts that are not in English, in addition to submitting official copies of native-language records, must also submit a notarized, verbatim translation in English prepared by an appropriate university or government official. The records must show both the degree granted and all coursework taken during the program of study. Applicants who are submitting transcripts from outside the United States must verify their records by submitting them to one of the following organizations: World Education Services (WES), Education Credential Evaluators (ECE), or other NACES-approved evaluator found here <https://www.naces.org/members>.
- Three letters of recommendation** from individuals who can speak of academic and/or professional capabilities and potential. Recommendations should be requested from former faculty members, current or immediate past employers, or other nursing/health professionals. Recommendations must have been completed within the last year.
- Current resume or curriculum vitae (CV).**
- Unencumbered RN license** from a US state board of nursing. International students need to be licensed as registered nurses in their country of origin, if licensure is available. If course work,

research, or graduate assistantship involves direct patient care activities, an RN license to practice in Kentucky must be obtained prior to December in student's first year of study.

- Responses to all questions** asked on the NursingCAS application.
- Students for whom English is not their primary language must show **English Proficiency** (<https://louisville.edu/graduate/futurestudents/application-directions/>).
- A written statement** of career goals, area(s) of expertise, research interest, and reasons for pursuing doctoral studies.

To the School of Nursing, Office of Student Services

- Personal interview** with School of Nursing faculty will be required.
- Criminal background check.** A pre-admission Certified Background Check is needed. Please use school code IP66bg. For international applicants the pre-admission background check requirement is satisfied during the visa application process.

Applicants accepted into the MSN-PhD and DNP-PhD programs are strongly advised to have completed a three (3) credit hour graduate level statistics course (applied descriptive and inferential statistics) with a grade of B (3.0) or higher within five years of the enrollment date. Applicants who wish to take a refresher statistics course will be advised of available statistics courses to take prior to beginning PhD coursework in statistics.

Program Requirements

BSN-PhD students will complete 15 credit hours of required master's-level courses.

Code	Title	Hours
Master's-Level Coursework		
Courses		
NURS 605	Theoretical Application for Practice	3
NURS 607	Foundational Concepts of Evidence Based Practice	3
NURS 627 or NURS 741	Epidemiology and Global Health Advanced Pathophysiology	3
NURS 657	Health Promotion and Disease Prevention in Culturally Diverse and Vulnerable Populations.	3
NURS 791	Applied Statistics for Evidence Based Practice	3
Minimum Total Hours		15

BSN-PhD and MSN-PhD Students will complete the following 40 credit hours of required doctoral-level courses, the qualifying exam, and a dissertation:

Code	Title	Hours
Post-Master's Coursework		
NURS 700	Theoretical Basis of Nursing	3
NURS 702	Philosophy of Science	3
NURS 710	Research Methodology I: Qualitative Research Methods	3
NURS 711	Research Methodology II: Quantitative Design	3
NURS 712	Research Methodology III: Nursing Measurement	3
NURS 714	Research Methodology IV: Analysis of Existing Data	3
NURS 725	Analysis of Leadership and Health Policy	3

NURS 735	Socialization into the Role of the Nurse Scientist	1
NURS 736	Dissemination of Research Findings	1
NURS 737	Grant Proposal Development	1
NURS 738	Responsible Conduct of Research	1
Advanced Statistics Courses		6
Three Cognates		9
DOCT 600	Doctoral Candidacy	0
Minimum Total Hours		40

DNP-PhD Coursework

Code	Title	Hours
NURS 700	Theoretical Basis of Nursing	3
NURS 702	Philosophy of Science	3
NURS 710	Research Methodology I: Qualitative Research Methods	3
NURS 711	Research Methodology II: Quantitative Design	3
NURS 712	Research Methodology III: Nursing Measurement	3
NURS 714	Research Methodology IV: Analysis of Existing Data	3
NURS 735	Socialization into the Role of the Nurse Scientist	1
NURS 736	Dissemination of Research Findings	1
NURS 737	Grant Proposal Development	1
NURS 738	Responsible Conduct of Research	1
One Cognate		3
Two graduate level statistics courses		6
DOCT 600	Doctoral Candidacy	0
Minimum Total Hours		31

Nursing Practice (DNP)

Doctor of Nursing Practice

Unit: School of Nursing (<https://louisville.edu/nursing/>) (GN)
 Program Website (<https://louisville.edu/nursing/academics/dnp/>)
 Academic Plan Code(s): See Degree Requirements tab.

Program Information

The Doctor of Nursing Practice is designed to prepare nurses to demonstrate excellence and leadership as a nurse practitioner in a variety of settings for the diagnosis and management across the lifespan and to meet the evolving health needs of the community.

The DNP focuses on developing advanced practice knowledge and leadership skills to improve health outcomes of individuals and populations through direct patient care, quality care initiatives, administration of organizations, and/or implementation of health policy.

The University of Louisville offers both the BSN-DNP and the MSN-DNP options. The BSN-DNP requires a minimum of three years of full-time study. The last two years of the program include a minimum 1,000 clinical, professional, and project hours. The MSN-DNP is designed for advanced practice nurses and focuses on leadership in population health. A minimum of two years of part-time study is required. Clinical hours vary depending on previous master's preparation. Students must provide documentation of previous clinical hours and complete a minimum of 252 project or professional hours, for a total of 1,000 post-baccalaureate

hours. (Students with less than 748 documented clinical hours in their MSN degree will need to take additional clinical hours).

Specialties Available

- Adult Gerontology Acute Care Nurse Practitioner
- Adult Gerontology Primary Care Nurse Practitioner
- Family Nurse Practitioner
- Neonatal Nurse Practitioner
- Pediatric Acute Care Nurse Practitioner
- Psychiatric/Mental Health Nurse Practitioner
- Nurse Anesthesia

Admissions Criteria

A holistic review process is used when considering applications for admission to the DNP program. The holistic review considers multiple criteria for admission, including the applicant's professional career goals, academic capabilities, GPA, work experience, leadership, and institution and community engagement.

The University of Louisville School of Nursing participates in Nursing's Centralized Application Service (<https://nursingcas.org/>) (NursingCAS), which provides you with an online application. NursingCAS collects and processes your application documents and verifies your transcripts.

The School of Nursing will receive your application information from NursingCAS and use it to make admission decisions.

To be considered for admission to the Doctor of Nursing Practice program, the following items must be submitted:

To the Graduate School

- Completed Graduate Admission Application (<https://louisville.edu/graduate/apply/>) including a reduced application fee.

To NursingCAS

- Transcripts**
 - **BSN -DNP applicant:** Official transcripts representing all college coursework with a recommended undergraduate cumulative grade point average of at least a 3.0 on a 4.0 scale. BSN degree must be from a regionally accredited institution and a CCNE-, ACEN-, or NLN-accredited nursing program.
 - **MSN-DNP applicant:** Official transcripts representing all college coursework with a recommended graduate cumulative grade point average of at least a 3.0 on a 4.0 scale. BSN and MSN degrees must be from CCNE-, ACEN-, or NLN-accredited nursing programs.
- Applicants who have attended a college or university outside the United States are also required to submit a course by course evaluation of their transcript through World Education Services (WES) (<http://wes.org/>) or Educational Credential Evaluators (ECE) (<http://ece.org/>). Please note that transcript evaluations can sometimes take several weeks.
- Two letters of recommendation** from individuals who can speak of academic and/or professional capabilities and potential for a scholarly career. Recommendation should be requested from former faculty, current or immediate past employers, or other nursing/health professionals. Recommendations must be completed within the last year.
- Current resume or curriculum vitae (CV)**

- e. **Verification of an unencumbered RN license** from a US state board of nursing. (Prior to starting clinicals students must have a RN license in the state of Kentucky or in a compact state).
- f. **Responses to all questions** asked on the NursingCAS application.
- g. Students for whom English is not their primary language must show **English Proficiency** (<https://louisville.edu/graduate/futurestudents/application-directions/>).

Additional Admission Requirements for Acute Care Specialties

Neonatal specialty: Minimum of one year of RN clinical experience in a Level III or Level IV NICU prior to admission. All NNP applicants must have the equivalent of two years of full-time RN clinical experience within the last five years in a Level III or Level IV NICU inpatient setting before beginning clinical courses.

Adult Gerontology Acute Care specialty: One year of RN clinical experience in an ICU **or** one year of RN clinical experience in any area and a commitment to complete one year of RN clinical practice in an ICU before beginning clinical courses. Applicants that do not have one year of RN experience at the point of application, but will complete one year before beginning clinical courses, will satisfy the work requirement.

Pediatric Acute Care: One year of RN clinical experience in an acute care setting **or** one year of RN clinical experience in any area and a commitment to complete one year of RN clinical practice in an acute care setting before beginning clinical courses. Applicants that do not have one year of RN experience at the point of application, but will complete one year before beginning clinical courses, will satisfy the work requirement.

**Program Requirements
BSN-DNP Curriculum**

Code	Title	Hours
Core Courses Required - See Below for Additional Required Coursework for Each Specialty		
NURS 607	Foundational Concepts of Evidence Based Practice	3
NURS 643	Quality and Safety in Advanced Practice Nursing	2
NURS 657	Health Promotion and Disease Prevention in Culturally Diverse and Vulnerable Populations.	3
NURS 725	Analysis of Leadership and Health Policy	3
NURS 740	Advanced Pharmacology (Not required for Neonatal Nurse Practitioner Specialty)	3
NURS 741	Advanced Pathophysiology	4
NURS 742	Advanced Physical Assessment (Not required for Neonatal Nurse Practitioner Specialty)	3
NURS 743	Epidemiology	3
NURS 744	Synthesis and Evaluation of Evidence in Practice	3
NURS 746	Program Development & Evaluation	3
NURS 747	Finance Management	2
NURS 748	Application of Leadership and Health Policy	1
NURS 749	The Business of Healthcare	2
NURS 840	Clinical Seminar I	1
NURS 841	Clinical Seminar II	1
NURS 842	(84 clinical hours) ²	1
NURS 843		3
NURS 791	Applied Statistics for Evidence Based Practice	3

NURS 750	DNP Project I: Project Inception (84 clinical hours) ³	3
NURS 751	DNP Project II: Project Implementation (84 clinical hours) ³	2
NURS 752	DNP Project III: Project Evaluation, Analysis and Dissemination (84 clinical hours) ³	3
NURS 787	Clinical Practicum for the DNP NP I (336 clinical hours) ¹	4
NURS 788	Clinical Practicum for the DNP NP II (252 clinical hours) ¹	3
NURS 789	Clinical Practicum for the DNP NP III (84 clinical hours) ¹	1

Students who do not complete the DNP project within the DNP coursework will be required to enroll in the DOC 600 completion course until degree requirements are met.

A minimum of 1000 clinical hours is required for the DNP degree.

Minimum Total Hours **60**

MSN-DNP Curriculum

Academic Plan Code(s): NURSDNPMSN

Code	Title	Hours
NURS 725	Analysis of Leadership and Health Policy	3
NURS 743	Epidemiology	3
NURS 744	Synthesis and Evaluation of Evidence in Practice	3
NURS 746	Program Development & Evaluation	3
NURS 747	Finance Management	2
NURS 748	Application of Leadership and Health Policy	1
NURS 845		1
NURS 791	Applied Statistics for Evidence Based Practice	3
NURS 750	DNP Project I: Project Inception (84 clinical hours) ³	3
Elective		3
NURS 751	DNP Project II: Project Implementation (84 clinical hours) ³	2
NURS 752	DNP Project III: Project Evaluation, Analysis and Dissemination (84 clinical hours) ³	3
Advanced pathophysiology, pharmacology and physical assessment, clinical reasoning, as well as specialty coursework required for non-nurse practitioner MSN-DNP or for nurse practitioner seeking an additional specialty.		
A minimum of 1000 clinical hours is required for the DNP degree.		
Students who do not complete the DNP project within the DNP coursework will be required to enroll in DOC 600 completion course until degree requirements are met.		
Minimum Total Hours		30

¹ This course contains patient care focused clinical hours. Clinical hours in this course are counted as direct patient care hours.

² This course contains clinical hours in the professional role of the NP. Clinical hours in this course should not be counted as direct patient care hours.

³ This course contains clinical hours specific to the DNP project development. Clinical hours in this course should not be counted as direct patient care hours.

DNP Specialties

Adult-Gerontology Acute Care

Academic Plan Code(s): NURSDNPAAC

Adult Gerontology Acute Care specialty requires one year of RN clinical experience in an ICU **or** one year of RN clinical experience in any area and a commitment to complete one year of RN clinical practice in an ICU before beginning clinical courses.

Code	Title	Hours
NURS 754	Clinical Reasoning in Advanced Practice Nursing	1
NURS 776	Procedures and Diagnostics for the Acute Care NP I	1
NURS 777	The Adult/Gerontology Acute Care NP Role	1
NURS 779	Diagnosis & Management in Acute Care I	4
NURS 780	Procedures and Diagnostics for the Acute Care NP II	2
NURS 781	Diagnosis & Management in Acute Care II	3
NURS 783	Diagnosis & Management in Acute Care III	1
NURS 792	Pharmacology for the Acute Care APRN	1
Minimum Total Hours		14

Adult-Gerontology Primary Care

Academic Plan Code(s): NURSDNPAPC

Code	Title	Hours
NURS 753	Adolescent Well Child Theory	1
NURS 754	Clinical Reasoning in Advanced Practice Nursing	1
NURS 755	Diagnosis and Management of Adult Health in Primary Care	4
NURS 756	Procedures & Diagnostics for Adult Health	1
NURS 757	Diagnosis and Management of Women's Health in Primary Care	2
NURS 758	Diagnosis and Management of Mental Health in Primary Care	2
NURS 759	Diagnosis and Management of the Older Adult in Primary Care	3
Minimum Total Hours		14

Family Nurse Practitioner

Academic Plan Code(s): NURSDNPFNP

Code	Title	Hours
NURS 754	Clinical Reasoning in Advanced Practice Nursing	1
NURS 755	Diagnosis and Management of Adult Health in Primary Care	4
NURS 756	Procedures & Diagnostics for Adult Health	1

NURS 757	Diagnosis and Management of Women's Health in Primary Care	2
NURS 758	Diagnosis and Management of Mental Health in Primary Care	2
NURS 761	Pediatric & Adolescent Well Child Theory	2
NURS 759	Diagnosis and Management of the Older Adult in Primary Care	3
NURS 762	Diagnosis & Management of Pediatrics in Primary Care	2
Minimum Total Hours		17

Neonatal Nurse Practitioner

Academic Plan Code(s): NURSDNPNP

Neonatal specialty requires a minimum of one year of RN experience in a Level III or Level IV NICU prior to admission. All neonatal applicants must have the equivalent of two years of full-time RN experience within the last five years in a Level III or Level IV NICU inpatient setting before beginning clinical courses.

Code	Title	Hours
NURS 763	Advanced Neonatal Physiology & Pathophysiology I	3
NURS 764	Neonatal Diagnostic Reasoning I	1
NURS 765	Advance Neonatal Physiology & Pathophysiology II	3
NURS 766	Neonatal Diagnostic Reasoning II	1
NURS 767	Neonatal Residency I (252 clinical hours) ¹	3
NURS 768	Neonatal Residency II (252 clinical hours) ¹	3
NURS 769	Neonatal Residency III (252 clinical hours) ¹	3
NURS 844	Advanced Practice Care: Birth up to 2 years of age	2
NURS 784	Advanced Neonatal Pharmacology	3
NURS 785	Advanced Neonatal Assessment	3
NURS 786	Human Embryology and Genetics	3
Minimum Total Hours		28

Pediatric Acute Care

Academic Plan Code(s): NURSDNPPAC

Pediatric Acute Care specialty requires one year of RN experience in an acute care setting **or** one year of RN experience in any area and a commitment to complete one year in an acute care setting before beginning clinical courses.

Code	Title	Hours
NURS 761	Pediatric & Adolescent Well Child Theory	2
NURS 762	Diagnosis & Management of Pediatrics in Primary Care	2
NURS 800	Pathophysiology for Pediatric Acute Care	1
NURS 801	Pharmacology for Pediatric Acute Care	1
NURS 802	Procedures for Pediatric Acute Care	1
NURS 803	Diagnosis and Management for Pediatric Acute Care I: Special Needs in Chronic Illness	3

NURS 804	Diagnosis and Management for Pediatric Acute Care II: Acute Illness	2
NURS 805	Diagnosis and Management for Pediatric Acute Care III: Critical Illness	3
NURS 806	The Pediatric Acute Care Nurse Practitioner Role	1
Minimum Total Hours		16

Psychiatric Mental Health

Academic Plan Code(s): NURSDNPPMH

Code	Title	Hours
NURS 770	Adv. Psychiatric Assessment of Psychopathology and Clinical Interviewing Across the Lifespan	2
NURS 771	Foundations of Individual and Group Psychotherapy for the Adv. Practice Psychiatric Mental Health NP	2
NURS 772	Psychopharmacology	2
NURS 773	Diagnosis and Management of Children and Adolescents in Adv. Psychiatric-Mental Health Nursing	3
NURS 774	Diagnosis and Management of Adults in Advanced Practice Psychiatric-Mental Health Nursing	3
NURS 775	Diagnosis and Management of Special Populations in Psychiatric Mental Health Nursing	2
NURS 794	The Psychiatric Mental Health Nurse Practitioner Role	2
Minimum Total Hours		16

DNP graduates from the UofL School of Nursing are prepared to apply for APRN certification in their population track upon graduation; however, educational preparation does not guarantee professional licensure. If you have questions regarding Kentucky APRN licensure, please contact the Kentucky Board of Nursing (<https://kbn.ky.gov/Pages/advanced-practice-registered-nurse.aspx>). For APRN licensure questions in other states, please contact the respective state board of nursing (<https://ncsbn.org/contact-bon.htm>).

Nursing Practice, Specialization in Nurse Anesthesia (DNP)

The Nurse Anesthesia program is a specialized track of the Doctor of Nursing Practice (DNP) degree offered by the School of Nursing at the University of Louisville. The program is committed to fostering expertise in the art and science of anesthesia, excellence in leadership, and a commitment to the future of the Nurse Anesthesia profession. Completion of the specialty curriculum prepares students to take the National Certification Examination (NCE) offered by the National Boards of Certification and Recertification of Nurse Anesthetists (NBCRNA) (<https://www.nbcna.com/>).

A holistic review process is used when considering applications for admission to the DNP Nurse Anesthesia program. The holistic review considers multiple criteria for admission, including the applicant's

professional career goals, academic capabilities, GPA, work experience, leadership, and community engagement.

- Official Transcripts representing all college course work with a recommended overall cumulative grade point average of 3.0 on a 4.0 scale.
- Bachelor of Science in Nursing degree from a regionally accredited institution and a NLN, CCNE or ACEN accredited nursing program.
 - Applicants who have attended a college or university outside the United States are also required to submit a course-by-course evaluation of their transcript through World Education Services (WES) (<https://www.wes.org/>) or Educational Credential Evaluators (ECE) (<https://www.ece.org/>)
- Minimum GPA of 3.0 on a 4.0 scale.
- Prerequisite courses at the undergraduate level with preference given to those who earned a B or better in all required courses.
 - Human Anatomy
 - Physiology
 - Microbiology
 - Chemistry
- Unencumbered Registered Nursing License
- Acute/Critical Care Nursing Certification (CCRN) or equivalent nursing specialty certification.
- Current certifications in BLS and either ACLS or PALS.
- Minimum one year of recent (within 2-years preferred) full-time critical care experience or the part-time equivalent with Employment Verification (<https://louisville.edu/nursing/academics/dnp/nap/files/uofl-nurse-anesthesia-employment-verification/>).
 - Preference is given to applicants who have high acuity critical care experience where hemodynamic monitoring, mechanical ventilation, and vasoactive drug administration is routinely managed.
 - Preference is given to applicants with experience in shared governance leadership.
- Completion of Graduate Record Examination (GRE) (<http://www.ets.org/gre/>), official scores must be within 5 years prior to application.
- Minimum of 24 hours of shadow experience with a CRNA (<https://louisville.edu/nursing/academics/dnp/nap/files/uofl-nurse-anesthesia-shadowing-documentation/>).
- Meet the Program Technical Standards (<https://louisville.edu/nursing/academics/dnp/nap/files/program-technical-standards/>).
- English Proficiency (<https://louisville.edu/graduate/futurestudents/application-directions/>) exam as applicable: TOEFL (Test of English as a Foreign Language) or IELTS (International English Language Testing System)

Degree Requirements

BSN-DNP Curriculum

Core Courses Required - See below for additional required coursework for Nurse Anesthesia Speciality

Program Requirements BSN-DNP Curriculum

Core Courses Required - See Below for Additional Required Coursework for Nurse Anesthesia Specialty

Code	Title	Hours
NURS 607	Foundational Concepts of Evidence Based Practice	3
NURS 643	Quality and Safety in Advanced Practice Nursing	2
NURS 657	Health Promotion and Disease Prevention in Culturally Diverse and Vulnerable Populations.	3
NURS 725	Analysis of Leadership and Health Policy	3
NURS 740	Advanced Pharmacology	3
NURS 741	Advanced Pathophysiology	4
NURS 742	Advanced Physical Assessment	3
NURS 743	Epidemiology	3
NURS 744	Synthesis and Evaluation of Evidence in Practice	3
NURS 746	Program Development & Evaluation	3
NURS 748	Application of Leadership and Health Policy	1
NURS 750	DNP Project I: Project Inception (84 Clinical Hours) ¹	3
NURS 751	DNP Project II: Project Implementation (84 Clinical Hours) ¹	3
NURS 752	DNP Project III: Project Evaluation, Analysis and Dissemination (84 Clinical Hours) ¹	3
NURS 791	Applied Statistics for Evidence Based Practice	3

Students who do not complete the DNP project within the DNP coursework will be required to enroll in the DOC 600 completion course until degree requirements are met.

A minimum of 2000 clinical hours is required for the DNP-NA degree.

Minimum Total Hours	43
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Nurse Anesthesia Requirements

Academic Plan Code: NURSDNPAN

Code	Title	Hours
NURS 809	Advanced Anatomy and Physiology for Anesthesia I	3
NURS 810	Advanced Anatomy & Physiology for Anesthesia II	3
NURS 811	Chemistry and Physics for Anesthesia	3
NURS 812	Advanced Pharmacology for Anesthesia	3
NURS 813	Business & Leadership in the Nurse Anesthesia Role	3
NURS 814	Intro to Anesthesia	3
NURS 815	Foundational Principles of Anesthesia I	3
NURS 816	Foundational Principles of Anesthesia II	3
NURS 817	Advanced Principles and Practice of Anesthesia I	3
NURS 818	Advanced Principles and Practice of Anesthesia II	3
NURS 819	Advanced Principles and Practice of Anesthesia III	3
NURS 821	Clinical Practicum for NA I (180 Clinical Hours) ²	2
NURS 822	Clinical Practicum for NA II (360 Clinical Hours) ²	4
NURS 823	Clinical Practicum for NA III (450 Clinical Hours) ²	5

NURS 824	Clinical Practicum for NA IV (450 Clinical Hours) ²	5
NURS 825	Clinical Practicum for NA V (540 Clinical Hours) ²	6
NURS 826	Clinical Practicum for NA VI (450 Clinical Hours) ²	5
NURS 827	Clinical Practicum for NA VII (450 Clinical Hours) ²	5
NURS 828	Nurse Anesthesia Seminar I	2
NURS 829	Nurse Anesthesia Seminar II	1
NURS 830	Nurse Anesthesia Seminar III	2

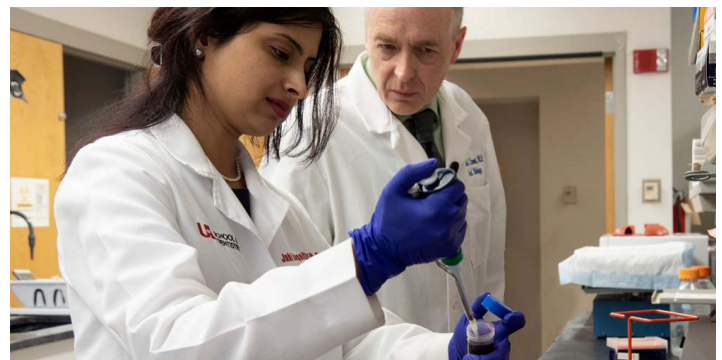
Minimum Total Hours	70
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¹ This course contains clinical hours specific to the DNP project development. Clinical hours in this course should not be counted as direct patient care hours.

² This course contains patient care focused clinical hours. Clinical hours in this course are counted as direct patient care hours. 1 credit hour = 84 clinical hours.

The Nurse Anesthesia program is a specialized track of the Doctor of Nursing Practice (DNP) degree offered by the School of Nursing at the University of Louisville. The program is committed to fostering expertise in the art and science of anesthesia, excellence in leadership, and a commitment to the future of the Nurse Anesthesia profession. Completion of the specialty curriculum prepares students to take the National Certification Examination (NCE) offered by the National Boards of Certification and Recertification of Nurse Anesthetists (NBCRNA).

Oral Biology (MS)



Master of Science in Oral Biology

Unit: School of Dentistry (<http://louisville.edu/dentistry/>) (GD)

Program Webpage (<https://louisville.edu/dentistry/degrees/oralbiology/msob/>)

Academic Plan Code(s): OBIOMS

Program Information

The School of Dentistry offers a research-based program leading to the Master of Science degree in Oral Biology. The program is directed toward an in-depth understanding of the biology of the oral cavity and processes leading to disease, including the interactions between oral and systemic health. Students obtain the scientific knowledge and biomedical skills required to perform contemporary dental research. This is a research-based degree for which each student completes a thesis project under the guidance of a faculty mentor. Research projects include basic, clinical, and translational studies.

The MS in Oral Biology offers training important to persons wishing to pursue a career in either academic or clinical dentistry or to enter the biotechnology sector or advance to a PhD. The program is available to students wishing to obtain only the MS in Oral Biology degree, as well as to students currently enrolled in the DMD degree program wishing to earn a dual degree (DMD/MS), and persons who have previously earned a DMD or MD (or equivalent) degree, including international applicants. See louisville.edu/dentistry/degrees/oralbiology (<http://louisville.edu/dentistry/degrees/oralbiology/>).

Areas for research training include: molecular, cellular and craniofacial biology; craniomaxillofacial diagnostic imaging; neural crest-related craniofacial and cardiovascular disorders; regulation of gene transcription; oral microbiology and immunology; cellular mechanisms of salivary gland secretion; birth defects; infection control; protein glycosylation; protein expression and trafficking; periodontology; dental materials science; orthodontics; endodontics; prosthodontics; and health services research related to dentistry. Developmental biology, oral microbiology, and innate immunology are particular strengths of the program.

A minimum of 30 credit hours is needed for the MS degree. Requirements for the degree include courses in introductory and advanced oral biology and in data analysis, participation in seminars, development of a biomedical research project, and a thesis.

Individualized programs are developed by students working with their thesis advisor and graduate committee. The graduate committee also approves proposed thesis research, reviews the thesis research, reviews the thesis for acceptance, and administers a final oral examination. Additional important information about the program is available in the Oral Biology Program Guide (<http://louisville.edu/dentistry/degrees/oralbiology/msob/curriculum/>).

Admission Requirements

Information about application process is available on the Oral Biology program website (<http://louisville.edu/dentistry/degrees/oralbiology/msob/admissions/>).

Graduate application for the program is online. There is a non-refundable application fee. Applications are not processed until the application fee is received and all required application materials have been received by the Graduate School.

Credentials listed below should be sent to the Graduate School, Graduate Admissions, by the following admission deadlines for complete applications:

June 1 for Fall

Applications that are not complete by the deadline may not be reviewed in time for registration.

Students currently enrolled in the DMD degree program who wish to also apply to the MS degree in Oral Biology program should meet with the Program Director or Director of Student Affairs to determine a timeline for making an application.

Admission Credentials

(See Oral Biology Program Guide (<http://louisville.edu/dentistry/degrees/oralbiology/msob/admissions/>))

- Graduate Application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) and application fee
- Transcripts of all college coursework, including evidence of a baccalaureate degree
- Graduate Record Examination scores or acceptable scores on the DAT or National Boards Dental Exam (NBDE)
- Three letters of recommendation which document your research experience or academic ability
- A personal statement of research experience or interest in research, and your career goals
- TOEFL, IELTS or Duolingo English language proficiency scores, if English is not applicant's native language.
- Certification of academic credentials with course-by course evaluation (via WES or ECE) for international applicants.

Program Requirements

The **minimum** requirement for the MS Oral Biology degree is **30 credit hours**. At least one-half of the credits counting toward the degree (exclusive of thesis) must be in courses open to graduate students only (600 level or above).

Code	Title	Hours
Major Subject Core Courses		8
OIID 501	Biomedical Data Analysis: Experimental Design and Statistics	
OIID 601	Introduction to Oral Biology Research	
OIID 605	Oral Health Seminars (2 semesters, 0.5 credit hours each)	
OIID 606	Oral Biology Communication ¹	
Major Subject Selective Courses (see list below)		7-8
Thesis Research Requirements		14-15
OIID 619	Graduate Research (minimum of eight (8) credit hours required)	
OIID 620	Thesis (minimum of six (6) credit hours required)	
Minimum Total Hours		30

Major Subject Selective Courses

In addition to the list below, courses may be chosen from any 600-level courses offered by the University of Louisville that are deemed to be relevant and applicable to the student's program of study and thesis research, with approval by the student's thesis advisor/director and the Program Director.

Code	Title	Hours
OIID 600	Concepts in Oral Immunology	2
OIID 604	Oral Microbiology	3
OIID 610	Advanced Topics in Oral Biology ²	1-4
OBIO 611	Craniofacial Osteology	1-3
OBIO 612	Craniofacial Diagnostic Imaging	2-4
OBIO 613	The Diagnosis & Treatment of Temporomandibular Disorders	1
OBIO 614	Advanced Oral Diagnosis and Oral Medicine ²	1
OBIO 615	Advanced Clinical Pharmacology ²	1
OBIO 616	Overview of Medical Genetics in Oro-Facial Disease ³	1.5

OBIO 617	Advanced Oral Pathology ²	1
BIOC 668	Molecular Biology ²	4

¹ Prerequisite: OIID 601 Introduction to Oral Biology Research

² Requires course director approval. Graduate-level clinical courses may require DMD or equivalent.

³ Course provided every second year.

Organizational Change in Higher Education (CERT)

This program was approved for students entering the university in the Summer 2023–Spring 2024 catalog year. For more information about catalog year, go to Catalog Year Information (<http://catalog.louisville.edu/undergraduate/university-wide-unit-specific-policies/catalog-year/>).

Certificate in Organizational change in Higher Education

Unit: College of Education & Human Development (<https://louisville.edu/education/>)

Department: Educational Leadership, Evaluation, and Organizational Development (<https://louisville.edu/education/departments/eleod/>)

Program Website (<http://louisville.edu/education/degrees/graduate-certificate-organizational-change-higher-education/>)

Academic Plan Code(s): OCHECGR, OCHECGRO

Program Information

This program can be completed in a traditional classroom format or entirely online (<https://louisville.edu/online/programs/certificate-programs/online-graduate-certificate-in-organizational-change-in-higher-education/>).

The training and development of academic leaders has historically been an informal process within the academy. As the profession and the postsecondary landscape have changed, there is a need to train and develop mid-career academics and those entering leadership roles.

The purpose of this certificate program is to prepare postsecondary instructors and faculty members for professional practice related to understanding and managing organizational change within their institutions and units. The program provides breadth in its consideration of the factors that influence organizational change in colleges and universities that is often challenging to obtain through professional practice alone, particularly for academic professionals focused on teaching and learning, as opposed to administrative or student support roles.

The certificate requires twelve (12) credit hours of coursework.

Admission Requirements

- The minimum requirements for admission is a baccalaureate degree or its equivalent from a regionally accredited institution.
- Applicants are required to submit all official transcripts.
- The GRE requirement is waived for applicants with a minimum cumulative GPA of 3.0 during undergraduate studies or a minimum cumulative GPA of 3.5 during graduate studies. Applicants below these thresholds will be considered on a case-by-case basis and the GRE may be required for admission. GRE scores used for consideration must be no older than 5 years if required for admission.

- All applicants for whom English is a second language must also submit official TOEFL scores of 79 or higher on the internet-based test, 213 or higher on the computer-based test. English proficiency can also be met by submitting official IELTS scores of at least 6.5 overall band score from the academic module exam or official Duolingo overall score of 105. Students holding a bachelor's or advanced degree from an accredited institution in the United States may be exempt from this requirement.
- Each applicant must submit a resume and professional goals statement. The professional goals statement must be 1-2 pages in length and address why you are interested in the program, how it relates to your career goals, the relationship between your personal and professional goals, and your experience with and interest in learning more about diversity issues in higher education. This document is also a writing sample and will be used to assess your writing skills
- For unconditional admission, students are required to have a 2.75 cumulative GPA, or 2.75 GPA for their last 60 hours in an undergraduate program.
- All credentials are considered. Satisfying the minimum GPA does not guarantee admission into the program.

Program Requirements

Code	Title	Hours
LEAD 680	Legal Issues in Postsecondary Education	3
LEAD 684	Educational Resource Management in Postsecondary Education	3
LEAD 694	Diversity in Higher Education	3
LEAD 697	Organizational Improvement in Higher Education	3
Minimum Total Hours		12

Pan-African Studies (CERT)

Graduate Certificate in Pan-African Studies

Unit: College of Arts and Sciences (<http://louisville.edu/artsandsciences/intro/>) (GA)

Department: Pan-African Studies (<http://louisville.edu/panafricanstudies/>)

Program Website (<http://louisville.edu/panafricanstudies/graduates/graduate-certificate.html>)

Academic Plan Code(s): PAS_CPA

Program Information

The Department of Pan-African Studies (PAS) fosters the multidisciplinary study of the societies and cultures of Africa and persons of African ancestry past and present, throughout the world. To this end, PAS offers an extensive program of study, including undergraduate major and minor and, ultimately, graduate programs focusing on Africa and the Diaspora. This program of study seeks to:

- Give students a broad understanding of the history, societies, and cultures of the African world;
- Equip students to apply Pan-Africanist scholarship to the analysis of and engagement with contemporary social and cultural issues;
- Engage in the interrogation of prior research and build new scholarship that reflects the perspectives and experiences of people from the African Diaspora;

- d. Prepare students for the workforce or for graduate work in Pan-African Studies and/or related fields;
- e. Add an inter-cultural dimension to other academic programs.

Fifteen faculty members hold full or joint appointments in the Department of Pan-African Studies with areas of specialization that include art, religion, music, communications, literature, popular culture, history, anthropology, education, sociology and political science of the African world.

As scholars, the faculty of the Department contributes to the creation of new knowledge and the development of new methodologies emerging from Pan-African experiences and formulations of meaning. The Department is committed to sharing this knowledge through teaching and research, and applying it through service in the local, state, regional, national and international communities. PAS aspires, as its ultimate goal, to become a Department of national and international distinction.

Admission Requirements

Admission to the graduate certificate in Pan-African Studies is open, potentially, to any student who has completed at a minimum baccalaureate degree. Post-baccalaureate students wishing to pursue the certificate outside the framework of a graduate degree program must apply for admission through and meet the general requirements for admission to the Graduate School. These requirements include the submission of:

- A graduate admissions application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>)
- An official transcript reflecting previous degrees earned
- At least two letters of recommendation
- Graduate Record Examination (GRE) scores of the General Test Section

If resource limitations necessitate the imposition of restrictions, the PAS Graduate Programs Committee will select students based on the following criteria: 1) undergraduate record; 2) letters of recommendation; 3) personal interview; and 4) GRE scores.

Graduate students wishing to pursue the certificate program in Pan-African Studies in conjunction with a graduate degree must meet the requirements for admission to that degree program and should then apply for the certificate program by consulting the PAS Director of Graduate Studies after admission. Depending on the structure of the degree program, coursework toward the certificate may be either additional hours beyond those required for the degree or elective hours toward the degree or a combination of the two. The PAS Director of Graduate Studies shall then inform the student's degree program chair and work to coordinate the completion of degree and graduate certificate program requirements.

Requirements for the Graduate Certificate in Pan-African Studies

Code	Title	Hours
Approved PAS Courses (available in the Department of Pan-African Studies) ¹		9
	Historical Studies (3 credit hours)	
	Cultural Studies (3 credit hours)	
	Social Studies (3 credit hours)	

Approved Electives ²	6
Minimum Total Hours	15

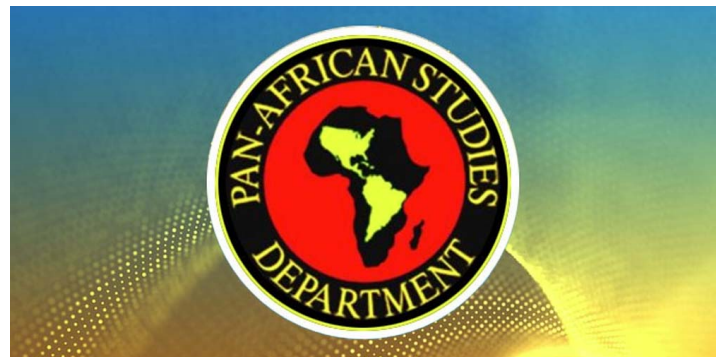
Courses must be approved for graduate credit in accordance with the policies of the Graduate School. Students may not apply 500-level courses taken for undergraduate credit.

At least three (3) credit hours must be at the 600 level.

Coursework toward the Graduate Certificate in Pan-African Studies may also count toward the student's graduate degree.

- ¹ Substitutions must be approved by the Director of Graduate Studies.
- ² For students pursuing graduate degrees, at least one course must be outside of the department in which the student is pursuing the degree. Substitutions must be approved by the Director of Graduate Studies.

Pan-African Studies (MA)



Master of Arts in Pan-African Studies

Unit: College of Arts and Sciences (<https://louisville.edu/artsandsciences/>) (GA)

Department: Pan-African Studies (<https://louisville.edu/panafricanstudies/>)

Program Website (<https://louisville.edu/panafricanstudies/graduates/master-of-arts-in-pan-african-studies.html>)

Academic Plan Code(s): PAS_MA

Program Information

The Master of Arts in Pan-African Studies program provides an opportunity for structured graduate study in the multi-disciplinary field of Pan-African Studies. Students will have the option of choosing between two areas of emphasis:

- African American Studies
- African Diaspora Studies

These broad emphases reflect sub-disciplines within the larger field of Pan-African Studies and will enable students to focus more intensively on their particular area(s) of interest. Students must successfully complete 33 credit hours of graduate level courses of which five courses must be at the 600 level. Each student also must complete a **thesis**.

The Pan-African Studies Department offers courses that may be applied toward graduate degrees in other areas. Students must obtain their program advisor's permission before enrolling in these courses. Students

who are interested in more information on these courses should contact the department's Director of Graduate Studies (DGS).

Admission Requirements

The Pan-African Studies Graduate Studies Committee only considers applications for the Fall semester. The deadline for applications is January 15.

Students applying for admission to the Master of Arts in Pan-African Studies program must meet the following standards:

- Completion of Online Graduate Application (<http://louisville.edu/graduate/apply/>)
- Minimum 3.00 undergraduate cumulative grade point average
- Submission of an official transcript reflecting previous degree earned
- Three letters of recommendation
- Graduate Record Examination (GRE); successful students usually have a minimum combined score of 300
- Submission of a personal statement
- Submission of a current CV
- Writing Sample

Program Requirements

Code	Title	Hours
Core Courses		15
PAS 601	Pan-African Research	
PAS 602	Theories And Issues in Pan-African Studies	
Three PAS courses for graduate credit distributed as follows:		
Historical Studies (3 credit hours)		
Cultural Studies (3 credit hours)		
Social Studies (3 credit hours)		
Emphasis Area		12
Select an area of emphasis:		
<i>African American Studies</i>		
PAS courses for graduate credit focusing on African Americans distributed as follows:		
Historical Studies (3 credit hours)		
Cultural Studies (3 credit hours)		
Social Studies (3 credit hours)		
Any PAS area focusing on African Americans (3 credit hours)		
OR		
<i>African and Diaspora Studies</i>		
PAS courses for graduate credit focusing on Africa and/or the Diaspora, distributed as follows:		
Historical Studies (3 credit hours)		
Cultural Studies (3 credit hours)		
Social Studies (3 credit hours)		
Any PAS area focusing on Africa and/or the Diaspora (3 credit hours)		
Thesis		
PAS 604	Thesis	3
Elective		
Elective in Related Field (with advisor's approval)		3
Minimum Total Hours		33

A student may be approved to transfer up to six (6) credit hours from another university or the University of Louisville graduate program or up to nine (9) credit hours from the University of Louisville Pan-African Studies graduate certificate program. Courses must be graded B or higher, cross-listed with PAS, and taken at graduate level.

Pan-African Studies (PhD)



Doctor of Philosophy in Pan-African Studies

Unit: College of Arts and Sciences (<https://louisville.edu/artsandsciences/>) (GA)

Department: Pan-African Studies (<http://louisville.edu/panafricanstudies/>)

Program Website (<https://louisville.edu/panafricanstudies/graduates/ph-d-program-in-pan-african-studies-1.html>)

Academic Plan Code(s): PAS_PHD

Program Information

The PhD program in Pan-African Studies trains professional researchers at the highest level in one or more of the traditional disciplines as well as focusing on two substantive areas: African American or African Diaspora Studies.

The expertise of the present core and affiliated faculty to the Department of Pan-African Studies is spread across African American and African Diaspora history, philosophy, sociology, political science, linguistics, religion, education, social work, literature, law, geography, psychology, art, music, anthropology, women's and gender studies. This amalgam of interdisciplinary subjects makes the department a highly active research and teaching unit that is well positioned to offer a degree of Doctor of Philosophy in Pan-African Studies.

The PhD is designed to educate students with the knowledge, analytic abilities, and professional development skills important for both academic and non-academic careers. Since fall of 2012, the program has been open to all students regardless of race/ethnicity, gender, religion, sexual preference, or nationality. Graduates are employable in public and private corporations in areas of education and research, public policy, cultural heritage and public history, programs that deal with human rights and social inequality, economics and trade.

Admission Requirements

To be admitted students must have the following:

- Advanced competency in research skills, as evidenced by completion of a master's degree thesis or other independent research project, such as a sole-authored research report, published articles in peer-reviewed journals, or edited volumes

- Completion of a minimum of 33 credit hours at the master's degree level (i.e., beyond the baccalaureate degree), with a minimum GPA of 3.00
- Official GRE Scores—successful students usually have a combined score of at least 300
- A master's degree in Pan-African/Black Studies; a master's degree in a traditional discipline in the humanities or social sciences also will be considered for admittance

Students who apply for the program without a master's degree in Pan-African/Black Studies may be required to take prerequisite courses deemed necessary by the Director of Graduate Studies.

Students may transfer six (6) credit hours from a previously earned master's degree toward the PhD, subject to the approval of the degree program and the Unit Dean. Students with a PAS MA degree will be allowed to transfer a maximum of twelve (12) credit hours to the PhD. In both cases, students must petition for additional credit hours. Only courses in which the student earned grades of B or better will be considered for transfer.

Application Process

The Pan-African Graduate Committee considers applications to the PhD program for fall admissions only. The deadline is January 15, but all applicants are encouraged to apply early!

When credentials are complete, the Graduate Admissions Committee will review applications and make selections. All applicants will be notified of their outcomes.

Applicants applying for admission to the doctoral program must submit the following required credentials to the Graduate School (<http://louisville.edu/graduate/apply/>):

- A completed Graduate Admission application (<http://louisville.edu/graduate/apply/>)
- Application fee
- Proof of completion of a master's degree program or an equivalent number of graduate credits prior to admission
- Official transcripts of all undergraduate, graduate and post-graduate work
- Graduate Record Examination (GRE) General Test scores—successful students usually have a combined score of 300
- Submission of three recent letters of recommendation about the applicant's potential success in a doctoral program
- A written statement of intent of no more than a thousand words detailing the applicant's professional goals
- Current curriculum vitae
- A writing sample—applicants must supply a recent sample (10-20 pages) of their scholarly or professional writing

To check the status of your application, please visit ulink.louisville.edu (<http://ulink.louisville.edu/>)

For questions about the admissions process contact the Graduate Admissions office at gradadm@louisville.edu.

Current or returning students with questions about policy or procedure not related to the admissions process should contact the Graduate Student Services Office at graduate@louisville.edu.

Program Requirements Coursework Structure (full-time)

Code	Title	Hours
Year I & II		
<i>Research Strategies</i>		9
PAS 623	Qualitative Research Strategies and Pan-African Research	
PAS 624	Quantitative Research Strategies and Pan-African Research	
Research Strategies - Discipline Based (Historical, Social, Cultural - courses not in PAS)		
<i>Intellectual Approaches</i>		9
PAS 615	Theories of Race and Racism	
PAS 622	Theories of the Pan-African Diaspora	
Select one of the following:		
Seminar on Race & Ethnicity in the Diaspora		
- or -		
Intellectual Approaches - Discipline Based (Historical, Social, Cultural - courses not in PAS)		
<i>Major (Track Area/Discipline)</i> ^{1,2}		12
<i>Minor (Electives)</i> ³		6
Professional Development Seminar		0
PAS 701	Doctoral Exam Preparation (Summer course, reading for comprehensive examinations)	6
Total Credit Hours (Year I and II): 42		
Year III ⁴		
<i>Semester 1</i>		
Special Topics Courses and Comprehensive & Special Topics Exams		9
<i>Semester 2</i>		
PAS 702	Dissertation Research	9
Year IV		
<i>Semester 1</i>		
PAS 702	Dissertation Research (and Writing)	2
<i>Semester 2</i>		
PAS 702	Dissertation Research (Defend Dissertation)	2
Minimum Total Hours		64

Based on this structure students will take at least five courses in a specific discipline at the end of the first two years. These include one in research strategy, one in intellectual approaches, two electives, and at least one course cross-listed with PAS. These courses can also be in another area study such as Women's and Gender Studies, Latin American/Latino Studies, etc.

Students may transfer six (6) credit hours from a previously earned master's degree toward the PhD, subject to the approval of the degree program and the Unit Dean. Students with a PAS MA degree will be allowed to transfer a maximum of 12 credit hours to the PhD. In both cases, students must petition for additional credit hours. Only courses in which the student earned grades of B or better will be considered for transfer.

¹ Four courses in one of two tracks: African American Studies or the African Diaspora and within a historical, social or cultural field. At least one of these must be cross-listed.

- ² Courses from this area are potential teaching/research fields. They could be cross-listed with other departments and must be discipline/subject based. For example, a PhD student interested in history of the "Slave Trade," will study this as a history class with possible specialization in the "Atlantic Slavery" or "African Slavery" or "Comparative Slavery," etc. Upon graduation, the student can compete favorably for jobs in traditional History Departments as well as Black Studies Departments.
- ³ The two elective courses could be taken outside the PAS as part of the student's potential teaching fields.
- ⁴ Defend dissertation proposal

Pharmacology and Toxicology (MS)

Master of Science in Pharmacology and Toxicology

Unit: School of Medicine (<http://louisville.edu/medicine/>) (GM)
Department: Pharmacology and Toxicology (<https://louisville.edu/medicine/departments/pharmacology/>)
Program Website (<https://louisville.edu/medicine/departments/pharmacology/programs/>)
Academic Plan Code(s): PHARMS

Program Information

The Department of Pharmacology and Toxicology is committed to academic excellence and to the attainment of regional, national, and international recognition for the quality of its educational, research, and service activities. The Department Strategic Plan includes five broad objectives:

- Provide instruction in pharmacology and toxicology of the highest quality for the education and preparation of medical, dental, and other health care professional students. Emphasis is placed on the fundamental principles necessary for life-long learning and the essential knowledge required for rational, effective, and safe use of drug therapy.
- Advance biomedical knowledge through high quality research and other scholarly activities, particularly in pharmacology and toxicology and other areas of focus within the University of Louisville and School of Medicine Strategic Plans.
- Provide robust research and educational experiences in pharmacology and toxicology for the education and training of future biomedical scientists who will provide and advance biomedical education, research, and service.
- Provide instruction of the highest quality in pharmacology and toxicology appropriate for students at the undergraduate, graduate, and postgraduate levels.
- Provide service to the School of Medicine, the Health Sciences Center, the University of Louisville and the surrounding region, the Commonwealth of Kentucky, professional organizations, the nation, and the world.

Goals of the Program

The Department of Pharmacology and Toxicology is dedicated to advancing biomedical knowledge through active contribution to high-quality research in pharmacology and toxicology and to providing high-quality research and educational experiences for the education and training of future biomedical scientists who advance biomedical education, research, and service.

Admission Requirements

For the Department of Pharmacology and Toxicology, complete guidelines are given below.

Application Forms

All candidates for admission to graduate programs at the University of Louisville must complete a graduate application (<https://louisville.edu/graduate/futurestudents/apply-materials/application/>).

Applications are received at any time for starting dates of approximately August 1. All credentials and/or communications should be submitted to the Graduate School and should contain the student's full name and University of Louisville issued student ID. Applications received by January 15th are assured of full consideration for that year. Admission on a conditional basis is a possibility in rare, special cases, even though application materials are incomplete. Please contact the department (phtxapps@louisville.edu) for additional information.

Application Fee

A non-refundable application fee is required with the application form. An application will not be forwarded to the department until this fee is paid.

Transcripts

Applicants for admission to a degree program must submit an official transcript from each college attended. All University of Louisville transcripts will automatically be submitted with completion of an application. All applications are considered on an individual basis. Normally, a successful applicant will have an undergraduate GPA of 3.00 or higher and will have successfully completed sufficient coursework in biology, chemistry and mathematics.

Statement of Experience and Professional Goals

At the time of application, a two to three page typed statement should be sent to introduce the student to the faculty of the Department, describing past educational, laboratory and relevant life experiences, as well as outlining professional goals after the degree program.

This statement can be sent electronically to gradadm@louisville.edu

English Proficiency

- a. English Proficiency. All applicants for whom English is a second language must also submit official TOEFL scores of 79 or higher on the internet-based test, official IELTS scores of at least 6.5 overall band score from the academic module exam or official Duolingo overall score of 105. Students holding a bachelor's or advanced degree from an accredited institution in the United States are exempt from this requirement. Information concerning the TOEFL exam can be obtained from: University Testing Center, or Test of English as a Foreign Language PO Box 6151 Princeton, NJ 08541 USA or [toefl.org](http://www.toefl.org) (<http://www.toefl.org>) The institutional code of UofL for TOEFL is 1838. The TOEFL department code is 30 (other biological sciences); IELTS information can be obtained from www.ielts.org (<https://www.ielts.org/>); Duolingo information can be obtained from www.duolingo.com/ applicants (<https://nam11.safelinks.protection.outlook.com/?url=http%3A%2F%2Fenglishtest.duolingo.com%2Fapplicants&data=04%7C01%7Ccheryl.schroader%40louisville.edu%7C0baa30a62e8345914a7c08d9faf80847%7Cdd246e4a54344e158ae391ad97%7CTWfPbGZsb3d8eyJWljoIMC4wLjAwMDAiLCJQjoiV2luMzIiLCJBTil6Ik1haWV>)

%7C3000&sdata=touQ
%2Brap6mVG4VBHkhRok5SfbyjKR0nFk0yseS6clh8%3D&reserved=0).

Personal Interview

Whenever possible, a personal interview, either in person or via telephone will be held before final offer and acceptance of a position in the MS program.

Letters of Recommendation

Three letters of recommendation from persons familiar with the applicant's research and/or academic work are required. These recommendations will ideally include a letter attached to the recommendation form or may be completed electronically via the online application (<http://graduate.louisville.edu/apply/>).

International Student Applicants

In addition to satisfying the appropriate credential requirements, applicants are required to provide the following documents.

- Applicants who attended college outside the U.S. must submit verbatim notarized English translations of all academic records and credentials.
- Transcripts must be evaluated by a credential evaluation service such as World Education Services (wes.org (<https://www.wes.org/>)) or Educational Credential Evaluators (ece.org (<https://www.ece.org/>)) for admission.
- If on a Visa that requires an I-20 or IAP-66, the applicant is required to complete an Application Supplement/Financial Declaration form (<http://louisville.edu/internationalcenter/iss/current-f1-j1-students/forms-and-documents/>) and submit appropriate financial documentation.

Financial Aid

The Department normally provides no funds for such support of master's degree students.

The University of Louisville reserves the right to change programs of study, academic requirements, fees, schedules of courses, the announced academic calendar and deadlines without prior notice.

Program Requirements

The Master of Science in Pharmacology and Toxicology program is a 1.5+ year course of study culminating in the presentation and defense of a master's thesis. The master's thesis may be based on laboratory research, a "dry" library-based research project, or a combination of the two. A non-thesis option is available upon approval of the faculty mentor and Director of the Graduate Program.

The MS curriculum is designed for:

- Individuals interested in a terminal master's degree who do not require extensive research experience or credentials, e.g., pharmaceutical representatives, medical insurance providers, medico-legal professionals
- Pairing with other programs to form hybrid or dual science/business or public health degrees, such as an MS/MBA or MS/MPH programs
- Individuals interested in progressing through management ranks in Pharmacology or biotech businesses
- The basis for a scientific writing career, when coupled with extensive scientific writing experience or electives

- The basis for a career in biotechnology, when combined with theoretical and practical training in laboratory analysis

Program Requirements

Year 1		Hours
Fall		
PHTX 641	PRINCIPLES PHARMACOLOGY	3
PHTX 643	Environmental Toxicology	3
BIOC 645	Advanced Biochemistry I	4
PHZB 616	Selected Topics in Physiology and Biophysics (Physiological Concepts for General Life Sciences)	2
Co-curricular:		
PHTX 606	Seminar	1
PHTX 617	Laboratory Rotation Research	1
Hours		11
Spring		
PHTX 642	Principles, Applications, and Research Methods in Pharmacology	3
PHTX 644	Organ Toxicology	3
BIOC 667	Cell Biology	3
BIOC 630	Responsible Conduct of Research: Survival Skills and Research Ethics	1
Co-Curricular:		
PHTX 619	Research	3-4
PHTX 606	Seminar	1
Hours		9
Summer		
PHTX 619	Research	4
PHTX 632	Analysis of Parametric & Non-parametric Data	2
Hours		6
Year 2		
Fall		
PHTX 625	Scientific Writing	2
Electives		2-5
Co-curricular:		
PHTX 619	Research	2-4
PHTX 606	Seminar	1
Hours		4
Spring		
Master's Candidacy		
Preparation, presentation, and defense of Master's thesis and award of MS degree (if required)		
Hours		0
Minimum Total Hours		30

Pharmacology and Toxicology (PhD)

Doctor of Philosophy in Pharmacology and Toxicology

Unit: School of Medicine (<http://louisville.edu/medicine/>) (GM)
Department: Pharmacology and Toxicology (<https://louisville.edu/medicine/departments/pharmacology/>)

Program Website (<https://louisville.edu/medicine/departments/pharmacology/programs/>)
Academic Plan Code(s): PHARPHD (also PHARPHDCAI, PHARPHDJIL, PHARPHDWEN)

Program Information

The Department of Pharmacology and Toxicology is committed to academic excellence and to the attainment of regional, national, and international recognition for the quality of its educational, research,

and service activities. The Department Strategic Plan focuses accomplishment of five broad objectives:

-Provide instruction in pharmacology and toxicology of the highest quality for the education and preparation of medical, dental, and other health care professional students. Emphasis is placed on the fundamental principles necessary for life-long learning and the essential knowledge required for rational, effective, and safe use of drug therapy.

-Advance biomedical knowledge through high quality research and other scholarly activities, particularly in pharmacology and toxicology and other areas of focus within the University of Louisville and School of Medicine Strategic Plans.

-Provide robust research and educational experiences in pharmacology and toxicology for the education and training of future biomedical scientists who will provide and advance biomedical education, research, and service.

-Provide instruction of the highest quality in pharmacology and toxicology appropriate for students at the undergraduate, graduate, and postgraduate levels.

-Provide service to the School of Medicine, the Health Sciences Center, the University of Louisville and the surrounding region, the Commonwealth of Kentucky, professional organizations, the nation, and the world.

Goals of the Program

The Department of Pharmacology and Toxicology is dedicated to advancing biomedical knowledge through active contribution to high-quality research in pharmacology and toxicology and to providing high-quality research and educational experiences for the education and training of future biomedical scientists who advance biomedical education, research, and service.

Student Financial Support

Students accepted into the PhD program will be considered for an IPIBS graduate student fellowship. The fellowship pays an annual stipend of \$28,000 in addition to payment of student tuition and health insurance. The annual student stipend increases to \$30,000 upon achievement of PhD Candidacy. The Department also houses a NIEHS-funded T32 environmental health sciences training program (<https://louisville.edu/medicine/departments/pharmacology/research/program-description/>) and participates in the NIEHS-funded Superfund Research Program (<http://louisville.edu/enviromeinstitute/superfund/>), both provide stipend, tuition, and fees for selected students.

Since all PhD students and candidates are considered to be full-time students, they generally are not permitted to seek outside employment while enrolled in the doctoral program. In cases where financial aid is limited and additional support is essential, students needing outside employment must apply in writing for departmental faculty approval. The faculty must also approve any change in employment, as well as approving continued outside employment on an annual basis.

The University of Louisville reserves the right to change programs of study, academic requirements, fees, schedules of courses, the announced academic calendar and deadlines without prior notice.

Admission Requirements

For the Department of Pharmacology and Toxicology complete guidelines are given below:

- a. Application forms. All candidates for admission to graduate programs at the University of Louisville must complete the online application form (<http://louisville.edu/graduate/apply/>).

Applications are received at any time for starting dates of approximately August 1, however, for full consideration for IPIBS fellowships, applications should be received by January 15th of the prior calendar year. All credentials and/or communications should be submitted to the Graduate School, Graduate Admissions and should contain the student's full name and University of Louisville issued student ID. Admission on a conditional basis is a possibility in rare, special cases, even though application materials are incomplete. Please contact (phtxapps@louisville.edu) the department for additional information.

- b. Application Fee. An application will not be forwarded to the department until this fee is paid. A check or money order should be made payable to the "University of Louisville."
- c. Transcripts. Applicants for admission to a degree program must submit an official transcript from each college attended. All University of Louisville transcripts will automatically be submitted with completion of an application. All applications are considered on an individual basis. Normally, a successful applicant will have an undergraduate GPA of 3.00 or higher and will have successfully completed sufficient coursework in biology, chemistry and mathematics.
- d. Statement of Experience and Professional Goals. At the time of application, a two to three page typed statement should be sent to introduce the student to the faculty of the Department, describing past educational, laboratory and relevant life experiences, as well as outlining professional goals after the degree program. This statement can be sent electronically to gradadm@louisville.edu.
- e. English Proficiency. All applicants for whom English is a second language must also submit official TOEFL scores of 79 or higher on the internet-based test, official IELTS scores of at least 6.5 overall band score from the academic module exam or official Duolingo overall score of 105. Students holding a bachelor's or advanced degree from an accredited institution in the United States are exempt from this requirement. Information concerning the TOEFL exam can be obtained from: University Testing Center, or Test of English as a Foreign Language PO Box 6151 Princeton, NJ 08541 USA or [toefl.org](http://www.toefl.org) (<http://www.toefl.org>) The institutional code of UofL for TOEFL is 1838. The TOEFL department code is 30 (other biological sciences); IELTS information can be obtained from www.ielts.org (<https://www.ielts.org/>); Duolingo information can be obtained from englishtest.duolingo.com/ applicants (<https://nam11.safelinks.protection.outlook.com/?url=http%3A%2F%2Fenglishtest.duolingo.com%2Fapplicants&data=04%7C01%7Ccheryl.schroader%40louisville.edu%7C0baa30a62e8345914a7c08d9faf80847%7Cdd246e4a54344e158ae391ad97%7CTWFpBGZsb3d8eyJWljojMC4wLjAwMDAiLCJQJoiV2luMzIiLCJBTiI6Ik1haWV%7C3000&sdata=touQ%2Brap6mVG4VBHkhRok5SfbyjKR0nFk0ySeS6clh8%3D&reserved=0>).
- f. Personal Interview. Whenever possible, a personal interview, either in person or via Zoom, will be held before final offer and acceptance of a position in the PhD program.

- g. Letters of Recommendation. Three letters of recommendation from persons familiar with the applicant's research and/or academic work are required. These recommendations will ideally include a letter attached to the recommendation form or may be completed electronically via the online application (<http://louisville.edu/graduate/apply/>).
- h. International Student Applicants. In addition to satisfying the appropriate credential requirements, applicants are required to provide the following documents.
 - Applicants who attended college outside the US must submit verbatim notarized English translations of all academic records and credentials.
 - Transcripts must be evaluated by a credential evaluation service such as World Education Services ([wes.org](http://www.wes.org) (<http://www.wes.org>)) or Educational Credential Evaluators ([ece.org](http://www.ece.org) (<http://www.ece.org>)) for admission.
 - If on a Visa that requires an I-20 or IAP-66, the applicant is required to complete an Application Supplement/Financial Declaration form (<http://louisville.edu/internationalcenter/iss/current-f1-j1-students/forms-and-documents/>) and submit appropriate financial documentation.
- i. Financial Aid. All applicants to the PhD program of the Department of Pharmacology and Toxicology are automatically considered for financial aid upon admission. Typically, such aid consists of a stipend, tuition remission, and a health insurance benefit.

Program Requirements

Year 1		Hours
Fall		
PHTX 641	PRINCIPLES PHARMACOLOGY	3
PHTX 643	Environmental Toxicology	3
BIOC 645	Advanced Biochemistry I	4
PHZB 602	Physiological Concepts for General Life Sciences	2
Co-curricular		
PHTX 617	Laboratory Rotation Research	1
PHTX 606	Seminar	1
Hours		14
Spring		
PHTX 642	Principles, Applications, and Research Methods in Pharmacology	3
PHTX 644	Organ Toxicology	3
BIOC 667	Cell Biology	3
BIOC 630	Responsible Conduct of Research: Survival Skills and Research Ethics	1
Co-Curricular		
PHTX 619	Research	1
PHTX 606	Seminar	1
Hours		11
Summer		
PHTX 632	Analysis of Parametric & Non-parametric Data	2
PHTX 619	Research	4
Hours		6
Year 2		
Fall		
PHTX 625	Scientific Writing	2
Students may take 1-3 elective courses for enrichment		1-8
Co-curricular		
PHTX 619	Research	4
PHTX 606	Seminar	1
Hours		8

Spring

Students may take 1-3 elective courses for enrichment (Master's Candidacy)	1-9
Co-curricular	
Submission, presentation, and defense of PhD proposal (NIH grant format) and MS thesis.	
Awarding of MS degree and transition to PhD candidacy.	
Hours	1
Minimum Total Hours	40

Physics (MS)

Master of Science in Physics

Unit: College of Arts and Sciences (<https://louisville.edu/artsandsciences/>) (GA)

Department: Physics & Astronomy (<http://www.physics.louisville.edu>)

Academic Plan Code(s): PHYSMS, PHYSMS_ACC

Program Information

Mission Statement

The Master of Science degree in Physics will prepare students for PhD level graduate work in Physics or a related STEM discipline, or for a science-related career in education or industry. Students in this program develop strong analytical, quantitative, and problem solving skills, including a deep appreciation for connections between physics and scientific computing, physics and engineering, or physics and mathematics, that serve to expand their career options in computer hardware/software companies, large semiconductor industries and many non-STEM job sectors such as finance, business and health care.

General Information

The MS is a two-year degree program available to qualified individuals possessing a bachelor's degree in Physics from an accredited college or university. Students with a bachelor's degree in other related subjects, e.g., Mathematics, Chemistry, or Engineering, also will be considered.

Qualified students will be considered for Graduate Teaching Assistantships (GTAs). As part of the educational experience, GTAs perform certain undergraduate teaching responsibilities in exchange for a stipend and full tuition remission.

The MS can be earned via a thesis or non-thesis option. The thesis option requires at least six (6) credit hours of research leading to submission of the thesis. Non-thesis students are also required to become involved in research.

BS/MS Five-Year Accelerated Program

We also offer a five-year accelerated program leading to a Bachelor of Science degree and Master of Science degree in Physics. This program allows students to complete one semester [nine (9) credit hours] of graduate coursework while enrolled as undergraduate students. Students must apply for admission to the program no later than the end of their junior year to be eligible enroll in graduate coursework in their final year of the program. The student may take a maximum of nine (9) credit hours for graduate credit, which will also apply to the requirements for the baccalaureate degree. Those nine (9) credit hours of graduate credit must be transferred to the student's graduate record after the student completes one semester as a graduate student.

The general information described above is equally applicable to this program. Specific admission requirements and programmatic details are listed under the Admissions and Degree Requirements tabs.

MS Admission Requirements

Departmental requirements for admission are as follows:

- A baccalaureate degree with at least 24 credit hours in physics, or the equivalent.
- A minimum quality-point standing of 3.0 (base 4.0) in physics courses.
- Mathematics coursework through differential equations. (MATH 405 or equivalent).
- Submission of the (general) Graduate Record Examination scores.

For general information concerning admission to graduate programs at the University of Louisville consult the application directions from the Graduate School (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>).

Program Admission Procedure

Admission into the Physics MS program is competitive. The application procedure is as follows:

- Submit a completed graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) to the University of Louisville Graduate School, together with the required application fee. Admitted students are most commonly accepted to begin their program of studies in the Fall semester (which starts in late August). However, programs beginning in the Spring semester (which begins in early January) can be arranged. There is no formal application deadline, but to ensure full consideration for Fall entry applications should be received no later than February 1.
- Official transcripts from each university or college attended must be submitted to the Graduate School.
- Take the general section of the Graduate Record Examination and arrange for the official score to be sent to the Graduate School. The Physics GRE is not required, but is preferred for PhD applicants.
- Arrange for at least two letters of recommendation to be sent to the Graduate School. These letters should be written by persons familiar with the applicant's academic work. Please use the recommendation form from the Graduate School (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) or complete the relevant section in the online application so that your letter writers will receive an email request to submit their recommendation electronically.
- All applicants, whose native language is not English, are required to achieve a TOEFL score greater than 79 on the internet-based test, a composite score of at least 6.5 on the IELTS test or Duolingo score of 105. Students holding a bachelor's degree from an accredited institution in the United States are exempt from this requirement.

In individual cases, the department may recommend conditional admission of a student who does not satisfactorily meet the above requirements. If admission is granted, that student will be subject to those conditions specified by the Department of Physics and Astronomy, the College of Arts and Sciences and the Graduate School as being necessary to remedy the conditional admission.

BS/MS Five-Year Accelerated Program Admission Requirements

- The applicant will apply for admission to the five-year accelerated program no later than the end of their junior year to be eligible enroll in graduate coursework in their final year of the program.
- The applicant will have completed at least 21 credit hours in Physics before applying to the program.
- The applicant will have maintained at least a 3.0 GPA in Physics courses and a 3.35 GPA overall.

Program Admission Procedure

The procedure for admission is identical to admission to the two-year MS described above except that general GRE scores may be submitted any time prior to completion of the BS part of the program.

Once accepted, the student must meet (or have already met) the following requirements:

- Take at least nine (9) credit hours in 500-level physics courses for graduate credit. Two of the courses must be PHYS 542 and PHYS 556. Preferably these courses will be taken during the same semester in the student's senior year.
- Maintain a 3.0 GPA.

Program Requirements

Specific requirements for the MS degree in Physics are as follows:

Thesis Option

Code	Title	Hours
PHYS 605	Theoretical Mechanics	3
PHYS 611	Electromagnetic Theory I	3
PHYS 621	Quantum Mechanics I	3
PHYS 622	Quantum Mechanics II	3
Physics Electives ¹		6-9
Courses in one minor field ²		3-9
PHYS 699	Research	6
At least 21 credit hours must be at the 600 level or above		
Minimum Total Credit Hours		30

- ¹ Courses numbered 500 or above. Courses at 500 level or above which are required for the BA/BS degree will not normally satisfy this requirement.
- ² Mathematics is the usual minor, but another field may be chosen with the approval of the department.

Non-Thesis Option

Code	Title	Hours
PHYS 605	Theoretical Mechanics	3
PHYS 611	Electromagnetic Theory I	3
PHYS 621	Quantum Mechanics I	3
PHYS 622	Quantum Mechanics II	3
Physics Electives ¹		12-15
Courses in one minor field ²		3-9
PHYS 699	Research	3

At least 17 credit hours must be at the 600 level or above

Minimum Total Credit Hours**33**

¹ Courses numbered 500 or above. Courses at 500 level or above which are required for the BA/BS degree will not normally satisfy this requirement.

² Mathematics is the usual minor, but another field may be chosen with the approval of the department.

BS/MS Accelerated Program

The undergraduate Physics and non-physics requirements of this degree program are identical to the standard BS in Physics as listed here (<https://catalog.louisville.edu/undergraduate/majors/physics-bs/#degreerequirementstext>). However, students in this program must satisfy additional requirements. They must take three (3) of their 3 credit hour Physics 500 level courses for graduate credit. Two of these courses must be PHYS 542 and PHYS 556. The remaining course can be any of the other 500-level Physics courses counted towards their BS degree. All graduate requirements for the five-year BS/MS program are identical to the standard MS program (thesis or non-thesis option), where the 500-level courses taken for graduate credit will count as Physics electives.

For more information about the undergraduate requirements for the BS degree, please visit the Physics BS catalog page here (<https://catalog.louisville.edu/undergraduate/majors/physics-bs/#degreerequirementstext>).

Physics (PhD)

Doctor of Philosophy in Physics

Unit: College of Arts and Sciences (<https://louisville.edu/artsandsciences/intro/>) (GA)

Department: Physics & Astronomy (<http://www.physics.louisville.edu/>)
Academic Plan Code(s): PHYSPHD

Program Information

Mission Statement

The Doctor of Philosophy degree in Physics will prepare students for research-oriented careers in government, industry, and academia. Students in this program develop strong analytical, quantitative, and problem solving skills, including a deep appreciation for connections between physics and scientific computing, physics and engineering, or physics and mathematics, that serve to expand their career options in computer hardware/software companies, large semiconductor industries, including many non-STEM job sectors such as finance, business and health care.

General Information

The PhD is typically a five-year degree program available to qualified individuals possessing a bachelor's degree in Physics from an accredited college or university. Students with a bachelor's degree in other related subjects—e.g. Mathematics, Chemistry and Engineering—also will be considered.

The first two years of the program are very similar to the non-thesis MS program. Under normal circumstances, PhD students will meet the requirements for the MS degree after two years of study. The remaining

three years will be dedicated primarily to research leading to the required dissertation.

Graduate Assistantships

For the first two years of the program, qualified students will be considered for Graduate Teaching Assistantships (GTAs). As part of the educational experience, GTAs perform certain undergraduate teaching responsibilities in exchange for a stipend and full tuition remission. In most cases, support for the remaining three years of study is via Graduate Research Assistantships (GRAs) provided by extramural faculty research funding.

Admission Requirements

Departmental requirements for admission are as follows:

- A baccalaureate degree with at least 24 credit hours in Physics, or the equivalent.
- A minimum quality-point standing of 3.0 (base 4.0) in physics courses.
- Mathematics coursework through differential equations. (MATH 405 or equivalent).
- Submission of the (general) Graduate Record Examination (general) scores. The Physics subject GRE is preferred, but not required.

For general information concerning admission to graduate programs at the University of Louisville consult the application directions from the Graduate School (<http://louisville.edu/graduate/apply/>).

Program Admission Procedure

Admission into the Physics PhD program is competitive. The application procedure is as follows:

- Submit a completed graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) to the University of Louisville, Graduate School, together with the relevant application fee.
 - i. Admitted students are most commonly accepted to begin their program of studies in the Fall semester (which starts in late August). However, programs beginning in the Spring semester (which begins in early January) can be arranged.
 - ii. There is no formal application deadline, but to ensure full consideration for Fall entry applications should be received no later than February 1.
- Official transcripts from each university or college attended must be submitted to the Graduate School, Graduate Admissions.
- Take the general section of the Graduate Record Examination and arrange for the official score to be sent to the Graduate School (the Physics subject GRE is recommended, but not required).
- Arrange for at least two letters of recommendation to be sent to the Graduate School. Persons familiar with the applicant's academic work should write these letters. Please use the recommendation form or complete the relevant section in the online application (<http://louisville.edu/graduate/apply/>) so that your letter writers will receive an email request to submit their recommendation electronically.
- All applicants for whom English is a second language must also submit official TOEFL scores of 79 or higher on the internet-based test, 213 or higher on the computer-based test. English proficiency can also be met by submitting official IELTS scores of at least 6.5 overall band score from the academic module exam or official Duolingo overall score of 105. Students holding a bachelor's or

advanced degree from an accredited institution in the United States may be exempt from this requirement.

In individual cases, the department may recommend conditional admission of a student who does not satisfactorily meet the above requirements. If admission is granted, that student will be subject to those conditions specified by the Department of Physics and Astronomy, the College of Arts and Sciences and the Graduate School as being necessary to remedy the conditional admission.

Program Requirements

General requirements for the PhD degree are set forth in the Degree Requirements (<http://catalog.louisville.edu/archive/2023-2024/graduate/general-policies-procedures-requirements/degree-requirements/>) section of the graduate catalog. Specific requirements for the PhD degree in physics are as follows:

Course Requirements

Code	Title	Hours
Core Courses		21
PHYS 561	Mathematical Physics I	
PHYS 605	Theoretical Mechanics	
PHYS 611	Electromagnetic Theory I	
PHYS 621	Quantum Mechanics I	
PHYS 622	Quantum Mechanics II	
PHYS 625	Statistical Mechanics	
PHYS 650	Research Methods in Physics & Astronomy	
Electives ¹		9
Dissertation		6
PHYS 699	Research	
Minimum Total Hours		36

¹ Each student is required to take nine (9) credit hours of elective courses. Courses outside the department are acceptable if approved by the student's thesis advisor and the department Graduate Program Director.

Qualifying Examination

In order to demonstrate proficiency in knowledge of Physics and the ability to apply that knowledge, students will be required to pass a qualifying exam. The qualifying exam will have a written and oral component.

Written Component

To satisfy the written component, the student will take a written exam composed by members of the faculty of the department. The exam will cover basic and intermediate problems in the areas of mechanics, electricity and magnetism, quantum mechanics, thermal physics, and special topics in contemporary physics. It will be administered twice yearly with advance notice, typically in September and January. Students are required to pass all areas of the exam. For full-time students, this must normally be achieved by the end of their fourth semester and in all cases by the end of their sixth semester. Special arrangements may be made for part-time students. A total of four attempts at the exam will be permitted.

Once a subject area part of the exam is passed, that part does not need to be retaken. Under certain circumstances, in order to confirm their familiarity with a particular subject, a student may

be extended the opportunity to take an oral examination in that subject.

Oral Component

To satisfy the oral component the student must pass an oral exam, in the form of a presentation to the PhD committee of his or her proposed research. The student is expected to take the exam before the end of their sixth semester as a graduate student. The test may be taken at most two times and must be passed by the end of the sixth semester.

Candidacy

Having passed both parts of the qualifying examination the student will register for degree candidacy and continue with their dissertation research.

Dissertation

A doctoral dissertation is required of each student.

Physiology (MS)

Master of Science in Physiology

Unit: School of Medicine (<http://louisville.edu/medicine/>) (GM)
Department Website: Physiology (<http://louisville.edu/medicine/departments/physiology/>)
Program Website (<http://louisville.edu/medicine/departments/physiology/degrees/ms-pb/>)
Academic Plan Code(s): PHZBMS

Program Information

General Procedures and Requirements for the Degree of Master of Science in Physiology

Program Overview and Objectives

The Department of Physiology is located in the Health Sciences Center of the University of Louisville which provides our graduate students with an active and intellectually stimulating environment. Our Graduate Program offers a Master of Science degree to provide several career options:

- To develop competence in directed research for advanced technical positions in industry, government, and university medical research laboratories;
- To prepare students with a good general knowledge of human physiology to enable them to communicate physiological concepts to future students; and
- To explore the possibility of a future career as an independent scientist in medically-related research.
- To enhance student credentials for admission to and performance in professional health care programs.

Minimal Requirements for the Master's Degree

The typical Master of Science (MS) Graduate Program includes a directed research emphasis and consists of 30 credit hours typically over a twelve-month period (three semesters) to include the following: 18 credit hours of basic medical sciences coursework and at least 12 credit hours of electives.

Advisor Selection

The Director of Graduate Studies will meet with the new student to discuss the academic and research interests. The Director of Graduate

Studies will serve as a Temporary Advisor until a Permanent Advisor is selected.

During the first semester of their graduate study, beginning graduate students will visit research laboratories in which they have an interest. First-year students must select a Principal Advisor. The selection process involves approval by the student, the Principal Advisor, the Director of Graduate Studies, and the Department Chair.

Admission Requirements

The University of Louisville graduate catalog gives a general description of admission procedures. Application information can be found on the Graduate School website.

The following application items must be submitted to the Graduate School at the University of Louisville:

- Graduate application (<http://www.louisville.edu/graduate/apply/>).
- One official transcript of the applicant's previous work for each college or university that has been previously attended.
- Two letters of recommendation from people who are well acquainted with the applicant's previous academic work.
- TOEFL, IELTS or Duolingo examination scores for foreign students from non-English speaking countries.
- A non-refundable application fee to the University of Louisville.

Applicants must state in a letter to the Department but submitted to the Graduate School (referred to as the Personal Statement in the application materials), why they desire a MS degree in the Department of Physiology.

Successful applicants generally demonstrate the following:

- A cumulative undergraduate grade point average that is usually 2.8 or higher on a scale of 4.00 (A=4, B=3, etc.)
- In the case of a foreign applicant from a non-English speaking country, the applicant must achieve a TOEFL Examination score >85 on the internet exam.

Program Requirements

At least 30 credit hours beyond the baccalaureate degree are required for the degree of Master of Science. A maximum of six (6) credit hours may be credited from post-baccalaureate work in other professional or graduate degree programs.

Minimum Course Requirements

The typical MS program must include the following courses taken on a grade basis:

Code	Title	Hours
PHZB 605	Systemic Physiology I	5
PHZB 606	Systemic Physiology II	5
BIOC 645	Advanced Biochemistry I	4
BIOC 647	Advanced Biochemistry II	4
Electives (see list below)		12
Minimum Total Hours		30

Academic Performance

A student must have at least a 3.0 accumulated GPA to be graduated with a degree of Master of Science in Physiology. In general, a student with a GPA less than 3.0 at the end of the second semester will require

a two-thirds majority vote of the Departmental faculty to continue in the Program.

A student may not graduate with more than six (6) credit hours of C grades in their required courses.

Electives

All electives must be graduate-level courses.

Electives may include but are not limited to:

Code	Title	Hours
<i>Fall Electives</i>		
PHZB 604	Stem Cell Biology and Regenerative Medicine	3
PHZB 607	Principles of Presentations: Self, Science, Interviews	3
PHZB 617	Seminar in Physiology and Biophysics	1
PHZB 619	Research	1-20
MBIO 601	Molecular Microbiology	2
MBIO 602	Immunology	3
PHZB 630	Biomedical Applications of Physiology in the Eye	3
<i>Spring Electives</i>		
PHZB 608	Physiological Concepts Related to the Metabolic Syndrome	3
PHZB 611	Advanced Human Cardiovascular Physiology	3
PHZB 617	Seminar in Physiology and Biophysics	1
PHZB 619	Research	1-20
BIOC 667	Cell Biology	3
BIOC 675	Cancer Biology	4
<i>Summer Electives</i>		
PHZB 619	Research	1-20
PHZB 615	Clinical Physiology	6

Other Potential Graduate Elective Course Areas:

- Communications
- Sociology
- Psychology
- Biostatistics
- Public Health
- Pharmacology
- Oral Biology

Physiology (PhD)

Doctor of Philosophy in Physiology

Unit: School of Medicine (<http://louisville.edu/medicine/>) (GM)
 Department Website: Physiology (<https://louisville.edu/medicine/departments/physiology/>)
 Program Website (<https://louisville.edu/medicine/departments/physiology/degrees/phd-pb/>)
 Academic Plan Code(s): PHZBPHD

Program Information

Program Overview and Objectives

The Department of Physiology is located in the Health Sciences Center of the University of Louisville, which provides an active and intellectually stimulating environment and a wide variety of course options. The

graduate program permits studies in related disciplines, such as anatomy, neurobiology, pharmacology, toxicology, biochemistry, microbiology, immunology, and molecular biology.

The doctoral program of the Department of Physiology is offered through the School of Medicine at the University of Louisville. As such, one major goal of the Department is to provide students with advanced training, which leads to the PhD degree in Physiology. The research interests of the Department are broad enough to provide each student with a wide selection of possible research and graduate education opportunities. Our doctoral graduate program is designed primarily to prepare students for an independent research career in basic and applied physiology.

Faculty Advising

First-Year Temporary Advisor and Research Experience

The Director of Graduate Studies will meet with the new student to discuss the student's academic and research interests. The Director of Graduate Studies will serve as a Temporary Advisor until a Permanent Advisor is selected.

Selection of Principal Advisor

During the first semester, beginning graduate students will visit research laboratories in which they have an interest. First-year graduate students must select a Principal Advisor within the first five months of their graduate study. The selection process involves approval by the student, the Principal Advisor, the Director of Graduate Studies, and the Department Chair. The Principal Advisor must be a Graduate Research Training Faculty of the School of Medicine.

Advisory Committee

The Advisory Committee in this Department is an integral part of the graduate student's training. This Committee is to be extremely proactive in planning the student's curriculum and providing an appropriate breadth in the student's research experience. To that end, not only does the mentor provide guidance in developing the dissertation research plan, but the Advisory Committee has the additional responsibility to assure the independent research design will provide appropriate results for the proposed hypotheses.

After selection of the Principal Advisor, the graduate student's Advisory Committee will be determined. This Committee must have at least five members, and will contain: the Principal Advisor, as Chair; at least three Departmental faculty members; and at least one Graduate Faculty member from outside the Department. All must be appointed as Members of the School of Medicine Graduate Faculty.

In cases where the Principal Advisor holds a primary appointment in a department other than the Department of Physiology, one of the full-time Physiology Faculty will serve as Co-Advisor. The Co-Advisor will also serve on the student's Advisory Committee and serve as the Second Reader of the Dissertation Reading Committee.

Approval of the Committee membership by the Director of Graduate Studies and the Chair will be contingent upon the potential role of each Committee member in the training or in the career plans of the student. The Dissertation Defense Committee, selected by the Principal Advisor, must be approved by the Director of Graduate Studies, the Department Chair, and by the Dean of the School of Medicine (or his/her designee).

Admission Requirements

The University of Louisville Graduate School gives a general description of admission procedures. Application information can be found on the Graduate School website (<http://louisville.edu/graduate/apply/>).

The following application items must be submitted to the Graduate School, at the University of Louisville.

- Graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>).
- One official transcript of the applicant's previous work for each college or university that has been previously attended.
- Two letters of recommendation from people who are well acquainted with the applicant's previous academic work.
- TOEFL, IELTS, or Duolingo Examination scores for foreign students from non-English speaking countries.
- A non-refundable application fee to the University of Louisville.
- Applicants must state in a letter to the Department but submitted to the Graduate School (referred to as the Personal Statement in the application materials), why they desire a PhD degree in this Department of Physiology.

Applicants for combined degrees (MD/PhD or PhD/DMD) must apply and be accepted by the appropriate professional school (e.g., School of Medicine or Dentistry) before final action will be taken on the Departmental doctoral application.

Admission to the PhD program in the Department of Physiology requires:

- A genuine interest in graduate work and the desire for a significant independent research career in the health sciences
- A cumulative undergraduate grade point average that is usually 3.00 or higher on a scale of 4.00
- International students for whom English is not their primary language must show English language proficiency by demonstration of proficiency on the TOEFL examination (defined as 213 or higher on the computer-based test; >85 on the internet exam), IELTS scores of at least 6.5 overall band score from the academic module exam, Duolingo score of 105 or by successfully completing the exit examination for the advanced level of the Intensive English as a Second Language Program or by demonstration of a degree award from an acceptable English language institution.

Program Requirements

Minimum Course Requirements

The University of Louisville PhD degree does not require a specific number of hours of academic credit. However, the Department requires that a minimum of two consecutive semesters — nine (9) credit hours in the Fall or Spring semesters and/or six (6) credit hours in the Summer — to be taken to fulfill the full time one-year doctoral residency requirement at the University of Louisville. With the approval of the Dean of the School of Medicine (or his/her designee), a maximum of 12 credit hours of this requirement may be credited for post-baccalaureate work from other professional or graduate degree programs.

By the end of the program, the student also must demonstrate the ability to conduct independent research.

The required program of academic studies must include (if not completed with a grade of B or better prior to admission to the Department) the following courses:

Code	Title	Hours
PHZB 605	Systemic Physiology I	10
& PHZB 606	Systemic Physiology II (or equivalent)	
BIOC 645	Advanced Biochemistry I (or equivalent)	4
BIOC 647	Advanced Biochemistry II	4
PHZB 611	Advanced Human Cardiovascular Physiology (or equivalent)	3
BIOC 667	Cell Biology	3
PHZB 609	Integrated Systemic Physiology	3
PHZB 617	Seminar in Physiology and Biophysics (two semesters)	2
PHZB 616	Selected Topics in Physiology and Biophysics (or equivalent)	3
PHZB 625	Experimental Physiology Methods	1
BIOC 630	Responsible Conduct of Research: Survival Skills and Research Ethics	1
Minimum Total Hours		34

A student must have at least a 3.00 accumulated GPA (on a 4.0 scale) in order to take the PhD Qualifying Examination and to qualify for the PhD degree. In general, a student with a GPA of less than 3.00 after two consecutive semesters (excluding summer sessions) will require a two-thirds majority vote of the Departmental faculty to continue in the PhD Program. The student must not have received more than six (6) credit hours of a grade of C in required courses.

For Departmental purposes, passing grades in pass/fail graded courses will not be included in the GPA calculation; however, a failing grade in a pass/fail graded course will be included in the GPA calculation at zero quality points per credit hour. Students will not be allowed to graduate with failing grades on their transcript.

Minimum Requirements for the Doctor of Philosophy Degree in Physiology

The PhD degree is designed for the student who wishes a professional life that involves original, independent research and who desires knowledge that will permit competent advanced teaching in a physiology area. The PhD degree requires that the student reach a high level of creativity and expertise. Therefore, mere completion of a prescribed number of courses is not adequate for receipt of the doctoral degree. All PhD students are expected to make steady and satisfactory progress toward the completion of the degree.

To document the satisfactory progress of the PhD students, each Advisory Committee must hold at least two mandatory, semi-annual meetings and report on the student's progress (presentations, publications, grades and research progress). The mentor will submit a written report to the Director of Graduate Studies who will collate and distribute these reports to the faculty. Twice a year, the Director of Graduate Students will lead a Departmental faculty discussion of these reports to determine the student's progress.

The PhD Qualifying Examination

Before the PhD Qualifying Examination may be taken, the student must have completed the Minimum Course Requirements listed above with a GPA of at least a 3.0. It would normally be expected that the student would take the PhD Qualifying Examination by the end of five semesters of graduate studies. If the student has not taken the PhD Qualifying Examination by the end of the second year, a letter of justification for the delay must be submitted by the Principal Advisor to the Department Chair.

A PhD Qualifying Examination must be passed by the applicant in order to be admitted to doctoral candidacy. The Qualifying Examination Committee will be comprised of members of the student's Advisory Committee. The membership must be approved by the Director of Graduate Studies and the Department Chair. A passing recommendation shall not involve more than one negative vote of this Committee. If the student does not pass the Qualifying Examination, one additional retake will be allowed if approved by a majority vote of the Departmental faculty.

The purpose of the PhD Qualifying Examination is to test the student's independent use and depth of core physiology through its application to the student proposed research. This examination shall consist of a written research proposal outlining the dissertation research and an oral examination of the student's depth of current understanding of the basic physiological concepts underlying the proposed research. The student will receive the Master of Science Degree in Physiology upon satisfactory completion of the Qualifying Exam.

Maintenance of Graduate Status

A candidate for the PhD degree who has completed all residency requirements, all of the approved required program of academic studies, and passed the Qualifying Examination may register for DOCT 600 Doctoral Candidacy to maintain doctoral candidacy until the degree is awarded. Continuous registration in this status is required. Semiannual progress meetings will continue to be expected. To complete the PhD degree, the student must continue to make satisfactory progress during the candidacy period. In order to be eligible to receive the PhD degree, the student must have been admitted to candidacy and registered for doctoral candidacy for the two consecutive semesters prior to the awarding of the degree.

Dissertation

The dissertation shall represent a scholarly achievement which embodies results of independent research and which demonstrates a thorough understanding of research concepts in the field of inquiry. The completed dissertation must be in the appropriate format as required by the Graduate School and must be approved by a Dissertation Reading Committee (the Candidate's Advisory Committee). Then, at least two weeks before the scheduled dissertation defense and at least thirty days before the expected date of graduation, the dissertation shall be submitted to the Dissertation Defense Committee. The Dissertation Defense Committee, selected by the Principal Advisor, must have been approved previously by the Director of Graduate Studies, the Department Chair, and by the Dean of School of Medicine (or his designee) (see section IIC). The accepted dissertation, must be submitted electronically, one signed signature page signed by the Dissertation Defense Committee, must be deposited with the Graduate School by the published deadline (<http://louisville.edu/graduate/current-students/thesis-dissertation-information/>) and one copy must be given to the Department Chair before graduation. The copy for the Department Chair may be electronic.

Dissertation Defense

The dissertation defense is an oral defense of the dissertation and a demonstration of mastery of the candidate's research field. The defense is administered by the Dissertation Defense Committee. The defense of the dissertation is a public examination and the Graduate School will notify all faculty members that they are invited to the Dissertation Defense, but only members of the Dissertation Defense Committee will vote on the student's performance. For the student to pass the Dissertation Defense, the vote of the Dissertation Defense Committee may not include more than one negative vote. The Dissertation Defense must take place at least fourteen days before the end of the semester in which the degree is anticipated.

The Department will not approve the granting of the PhD degree until the student has submitted at least one first-authored manuscript on the dissertation research and one co-authored manuscript for publication in a refereed journal. The manuscript and the choice of a journal must be approved by the Principal Advisor before manuscript submission.

In any case, where the Departmental requirements are less restrictive than those described in the School of Medicine Minimal Guidelines for Graduate Education, the School of Medicine guidelines will apply.

Exceptions

- The above are statements of minimum Departmental requirements. However, it is recognized that there could be special and unusual cases in which rare exceptions should be allowed. The student and advisor should consult with the Department Chair if an exception is desired.
- In the above guidelines, the Director of Graduate Studies has considerable responsibility for program quality. To avoid any possibility of a potential conflict of interest, the Department Chair (or designee) will fulfill the role of Director of Graduate Studies for any PhD or MS student who has the Director of Graduate Studies as their Principal Advisor.

Typical Doctoral Programs

Traditional Doctoral Program

Year 1		Hours
Fall		
BIOC 645	Advanced Biochemistry I	4
PHZB 605	Systemic Physiology I	5
PHZB 617	Seminar in Physiology and Biophysics	1
PHZB 619	Research	1
PHZB 625	Experimental Physiology Methods	1
Hours		12
Spring		
BIOC 647	Advanced Biochemistry II	4
PHZB 606	Systemic Physiology II	5
PHZB 617	Seminar in Physiology and Biophysics	1
BIOC 667	Cell Biology	3
BIOC 630	Responsible Conduct of Research: Survival Skills and Research Ethics	1
Hours		14
Summer		
PHZB 619	Research	6
Hours		6

Year 2		
Fall		
PHZB 609	Integrated Systemic Physiology	3
PHZB 619	Research	6
Hours		9
Spring		
PHZB 611	Advanced Human Cardiovascular Physiology	3
PHZB 619	Research	5
PHZB 616	Selected Topics in Physiology and Biophysics	3
Master of Science Final Exam (PhD Qualifying Exam)		
Master of Science Degree and PhD Candidacy program		
Hours		11
Summer		
DOCT 600	Doctoral Candidacy	0
Hours		0
Year 3		
Fall		
DOCT 600	Doctoral Candidacy	0
Hours		0
Spring		
DOCT 600	Doctoral Candidacy	0
Hours		0
Summer		
DOCT 600	Doctoral Candidacy	0
Hours		0
Year 4		
Fall		
DOCT 600	Doctoral Candidacy	0
Hours		0
Spring		
DOCT 600	Doctoral Candidacy	0
Hours		0
Minimum Total Hours		52

Dissertation Defense: If more research/dissertation time is needed, the student will continue to register as DOCT 600 until completed.

Doctoral Program for Residents/Fellows

This sequence is based on the premise that the clinician will be given the equivalent of two full calendar years ("Research Leave") free to complete research without clinical duties. The Director of Graduate Studies will see that the Graduate School is notified of the transfer of the preclinical courses applicable to the Departmental doctoral requirements. The clinician will take:

- Advanced Human Physiology,
- Integrated Systemic Physiology,
- Statistics,
- Two semesters of Seminar, and
- Complete initial research (PHZB 619) to define a doctoral research problem.

Year 1		Hours
Fall		
PHZB 609	Integrated Systemic Physiology	3
PHZB 619	Research	7
PHZB 617	Seminar in Physiology and Biophysics	1
Hours		11

Spring		
PHZB 611	Advanced Human Cardiovascular Physiology	3
BIOC 630	Responsible Conduct of Research: Survival Skills and Research Ethics	1
PHZB 619	Research	5
PHZB 616	Selected Topics in Physiology and Biophysics	3
Hours		12
Summer		
PHZB 619	Research	6
Hours		6
Year 2		
Fall		
PHZB 619	Research	9
Master of Science Degree (PhD Qualifying Exam)		
Hours		9
Spring		
DOCT 600	Doctoral Candidacy	0
Hours		0
Summer		
DOCT 600	Doctoral Candidacy	0
Hours		0
Minimum Total Hours		38

Dissertation Defense: If more research/dissertation time is needed, the clinician will continue to register as DOCT 600, until completed, and dissertation defended.

Police Executive Leadership Development (CERT)

Graduate Certificate in Police Executive Leadership Development

Unit: College of Arts and Sciences (<http://louisville.edu/artsandsciences/intro/>) (GA)

Department: Criminal Justice (<http://louisville.edu/justice/>)

Program Website (<https://louisville.edu/spi/>)

Academic Plan Code(s): CPELCPL

Program Information

The Southern Police Institute is a division of the Department of Criminal Justice, College of Arts and Sciences, University of Louisville. It is an advanced education and training institute whose mission is to enhance the professional development of law enforcement practitioners. We accomplish this mission by providing educational and career development programs that are designed to challenge and to prepare law enforcement practitioners for the demands of today and tomorrow. The Southern Police Institute consistently is ranked among the top law enforcement educational and training schools in the nation.

Since the creation of the Southern Police Institute in 1951, its program of instruction has been grounded in the belief that law enforcement is a demanding activity requiring the highest level of professional preparation. The Southern Police Institute was established by its founders to provide a place where that preparation can be undertaken. The present faculty and staff dedicate themselves to this mission and continue to maintain the standards of excellence established by our founders. They are uniquely qualified as researchers, consultants, teachers, and former law enforcement practitioners to guide and to direct the educational needs of today's law enforcement professionals.

Admission Requirements

Applicants must meet the standards for good standing or provisional admission to the Master of Science in Criminal Justice, including an earned bachelor's degree and appropriate letters of recommendation. They must also achieve a qualifying score on the Southern Police Institute's admission examination and be recommended by the Chief Executive Officer of their supporting agency. Applications are reviewed for eligibility by the Southern Police Institute's faculty who are members of the University's Graduate Faculty and the Department of Criminal Justice.

Program Requirements

The curriculum of the Administrative Officers Course (AOC) may be taken only by students admitted to and enrolled in the Southern Police Institute.

The Southern Police Institute offers two 12-week AOC programs annually.

Code	Title	Hours
CJ 576	Managing Organizational Performance	3
CJ 577	Trauma Informed Policing	3
CJ 578	Criminal Justice Leadership - WR (http://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
CJ 612	Criminal Justice Administration: Police	3
Minimum Total Hours		12

Political Science (MA)



Master of Arts in Political Science

Unit: College of Arts and Sciences (<https://louisville.edu/artsandsciences/intro/>) (GA)

Department: Political Science (<https://louisville.edu/politicalscience/>)

Program Website (<https://louisville.edu/politicalscience/graduate-studies-2/>)

Academic Plan Code(s): POLSMA, POLSMA_ACC

Program Information

The Department of Political Science, in the College of Arts and Sciences, offers graduate training leading to the Master of Arts degree. In addition, the Department participates in a joint degree program with the Brandeis School of Law.

The MA is designed to allow a student to pursue a degree either full or part time. Most graduate-level courses are offered in the evening. The MA is oriented toward those who wish to pursue advanced training in political science or a position in the public, private, or non-profit sector.

The Department of Political Science is especially strong in two fields of study: International Politics and American Politics. Students are encouraged to concentrate their coursework in one of these fields.

The field of International Politics includes comparative politics and international relations. Members of the Department faculty are experts in the politics of Africa, Latin America, the Middle East, Asia, North America, and Europe; they also study human rights, international law, diplomacy, religion and political violence, and climate change, among many other areas. The Center for Asian Democracy also has dedicated faculty and post-doctoral students who lend their expertise to the Department and organize public events.

The field of American Politics involves the study of U.S. political institutions, political behavior, and public policy. Members of the Department faculty possess expertise in law and public policy, political psychology, race and American politics, judicial decision making, religion and democracy, environmental policy, gender, sexuality, and politics, and urban politics.

Accelerated BA-BS/MA

The Department of Political Science also offers its undergraduate majors an opportunity to earn both a BA (or BS) degree and an MA degree at an accelerated pace. This program allows students to complete nine (9) credit hours of graduate coursework while enrolled as undergraduate students. With instructor permission, additional graduate courses beyond the 9 hours may be taken but may only count for one degree (either the BA/BS or the MA).

Interested students should apply to the program during their Junior year (i.e., when they have accumulated 60-90 hours of credit). Students must be political science majors with a GPA of approximately 3.2 or higher.

To apply, students must obtain two letters of recommendation from faculty attesting to their ability to do high-quality academic work at the graduate level. Students must also write a personal statement where they describe their professional or occupational objectives, areas of interest in political science, and how the department's program (and specific faculty) will help to achieve those objectives. The GRE is not required.

Joint MA/JD Program

The Department of Political Science offers a joint MA/JD program in partnership with the Brandeis School of Law. This program generally allows the student to obtain the MA and JD degrees in a four-year course of study.

Student participating in the dual degree program will be able to combine Law courses and Political Science courses to create well-defined concentrations of study. Examples include environmental law and politics, negotiations and dispute resolution, administrative law and politics, federalism, international law and politics, comparative law and politics, civil rights and liberties, constitutional law and politics, and race, law, and politics.

Students in the JD/MA program must complete 81 hours in the JD curriculum (instead of the normal 90 hours) and either 21 hours in the MA curriculum (instead of the normal 30 hours) for the Thesis Option or 27

hours in the MA curriculum (instead of the normal 36 hours) for the Non-thesis Option.

To be admitted into the program, the student must (1) apply to, (2) meet the admission requirements of, and (3) be accepted by both the Brandeis School of Law and the Department of Political Science.

Admission Requirements

Admission into the MA program is competitive.

The procedures for admission into the MA program are as follows:

- a. Submit a completed graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) and application fee to the Graduate School. Priority application deadlines and assistantship deadlines may vary from year to year, but are posted on the Department of Political Science Graduate Program website (<https://louisville.edu/politicalscience/graduate-studies-2/>).
- b. Forward official transcripts verifying the receipt of a baccalaureate degree from an accredited institution to the Graduate School. An applicant must hold a BA or BS (or foreign equivalent) before admission to the program can be granted. Applicants selected for the program have generally earned a 3.0 undergraduate GPA overall or a 3.2 undergraduate GPA in the last 60 credit hours or the equivalent.
- c. Provide two letters of recommendation from individuals familiar with the applicant's academic performance. Professional letters from employers are acceptable only when a substantial time has elapsed since the applicant has attended an academic institution.
- d. A typed personal statement of about 300-500 words is required. Please explain your reasons for applying to the master's program in political science at the University of Louisville. Discuss your professional or occupational objectives and how you envision the department's program fitting into those objectives. Describe the areas of political science you find especially interesting for study and/or research and identify the political science faculty with whom you might be interested in working.
- e. International applicants are required to take the TOEFL, IELTS or Duolingo examination if English is not the native language. TOEFL scores of 79 or higher on the internet-based test, 213 or higher on the computer-based test. English proficiency can also be met by submitting official IELTS scores of at least 6.5 overall band score from the academic module exam or official Duolingo overall score of 105. Students holding a bachelor's or advanced degree from an accredited institution in the United States may be exempt from this requirement.

The Department may accept applicants who do not meet these requirements on a conditional basis if sufficient additional evidence of promise of success in the graduate program can be shown. No student will be admitted unconditionally until all materials listed above have been received.

Program Requirements

Students may select from one of three options for their graduate studies:

- a. The general MA in Political Science (thesis),
- b. The general MA in Political Science (non-thesis)

The curricula for these options are described below.

Thesis Option

Code	Title	Hours
POLS 670	Research Design	3
POLS 671	Introduction to Data Analysis	3
POLS 619	Seminar in Public Policy	3
POLS 629	Seminar in American Politics	3
POLS 639	Seminar in International Relations	3
POLS 649	Seminar in Comparative Politics	3
Electives *		6
POLS 699	Thesis Guidance	6
Minimum Total Hours		30

* From Political Science or other departments. Up to six (6) elective credit hours may be at the 500-level. Up to three (3) credit hours may be independent study.

Non-Thesis Option

Code	Title	Hours
POLS 670	Research Design	3
POLS 671	Introduction to Data Analysis	3
POLS 619	Seminar in Public Policy	3
POLS 629	Seminar in American Politics	3
POLS 639	Seminar in International Relations	3
POLS 649	Seminar in Comparative Politics	3
Electives **		15
POLS 695	Directed Research	3
Minimum Total Hours		36

** From Political Science and other departments. Up to six (6) elective credit hours may be taken outside of Political Science. Up to nine (9) elective credit hours may be taken at the 500-level. Up to three (3) credit hours may be independent study credit.

Population Health Management (CERT)

Graduate Certificate in Population Health Management

Unit: Public Health and Information Sciences (<https://louisville.edu/sphis/>) (GH)

Department: Health Management and Systems Sciences (<https://louisville.edu/sphis/departments/hmss/>)

Academic Plan Code(s) PHM_CGRO

The graduate certificate in Population Health Management provides students the foundational competencies of Population Health Management: governance and management of healthcare organizations, public health, health policy, and population health management.

Those interested in the possibility of pursuing the the Master of Science in Health Administration (MSHA) may use this program as a stepping stone towards completion of the MSHA degree. University policy states that, "Upon approval of the graduate program, students may apply

the coursework from no more than one certificate program towards a graduate degree program." (See the Graduate Catalog, General Policies, Procedures and Requirements (<https://catalog.louisville.edu/graduate/general-policies-procedures-requirements/#text>) - **Transfer of Credit.**)

This program is available in an online (<https://louisville.edu/online/programs/certificate-programs/online-graduate-certificate-in-population-health-management/>) format only.

Competencies

The successful student is able to demonstrate:

- Communication
- Innovative Thinking
- Interpersonal Understanding
- Organizational Awareness
- Self-Confidence
- Community Orientation
- Public Health Methods
- Analytic Thinking
- Collaboration
- Impact and Influence
- Information Seeking

Prior to graduation, students in the program will have demonstrated these competencies by completing the curriculum.

Admission Requirements

Applicants must have completed a baccalaureate degree from an accredited institution with a minimum of 2.75 GPA on a 4.0 scale.

Application requirements are submitted to the Graduate School and include:

- Graduate application (<https://louisville.edu/graduate/futurestudents/apply-materials/application/>) submitted to the Graduate School
- Official transcripts indicating conferral of a bachelor's degree from an accredited institution.
- Curriculum vitae or resume
- One-page personal statement written by the applicant that is a clear, substantive description of his or her goals in public health and healthcare management.
- Application fee

For specific information about the degree program or the application process, students should contact Pam Renner (paemla.renner@louisville.edu).

Application Deadline

Applications are accepted for the Fall and Spring semester. There are no Summer admissions. Preferred, to facilitate processing, application deadlines are August 1 for Fall starts and November 15 for Spring starts.

Certificate Requirements

12 credit hours of required coursework

Code	Title	Hours
PHMS 505	Governance and Management of Healthcare Organizations	3

PHMS 520	Foundations of Public Health in Health Management	3
PHMS 610	Health Policy and Analysis	3
PHMS 625	Population Health Management	3

Minimum Total Hours 12

If a student chooses to pursue the Master of Science in Health Administration (MHSA) degree at any time after enrolling in or completing the Certificate program, then all coursework completed within the preceding three years with a grade of B or better may be applied towards the coursework for the MSHA degree.

MSHA graduates or currently enrolled MSHA students are not intended to be eligible to receive their certificate as the CAHME-accredited degree is appropriate and sufficient development and credentialing.

Formerly enrolled MSHA students may apply for certificate admission and utilize previously earned credits (grades of B or higher) toward certificate completion.

Accreditation

The School of Public Health and Information Sciences is accredited by the Council on Education for Public Health (CEPH).

The University of Louisville is accredited by the Southern Association of Colleges and Schools Commission on Colleges (SACSCOC).

For more information, see the School of Public Health and Information Sciences accreditation webpage (<http://louisville.edu/sphis/accreditation/>).

Psychology - Clinical (PhD)



Doctor of Philosophy in Psychology - Clinical

Unit: College of Arts and Sciences (<http://louisville.edu/artsandsciences/intro/>) (GA)

Program Website (<http://louisville.edu/psychology/graduate/clinical/>)

Academic Plan Code(s): CPSYPHD

Program Information

Mission Statement

The mission of the Clinical Psychology Doctoral Program at the University of Louisville is to produce scientist-practitioners who are:

- Competent to conduct and evaluate research;
- Competent in implementing research-supported practice;

- Ethical and professional in their relationships with clients, students, and colleagues; and
- Prepared to be professionals in a diverse world.

General Information

The Department of Psychological and Brain Sciences, in the university's College of Arts and Sciences, offers PhD programs in Experimental Psychology and Clinical Psychology. We do not offer any terminal master's degree programs in our department.

The Clinical Psychology PhD program usually requires four years of full-time coursework, research, and clinical activities. Each student must also complete a one-year approved internship. Students are required to complete a Master's Research Portfolio. After completion of the Master's Portfolio, students write the preliminary examination and then move on to dissertation work. A dissertation proposal must be defended before a student may apply for an internship.

Financial support for graduate students in the PhD program is available in the form of teaching and research assistantships, University Fellowships, and placements in community service settings.

Accreditation

The Clinical Psychology PhD program is fully accredited by the American Psychological Association, Office of Program Consultation and Accreditation:

Office of Program Consultation and Accreditation

750 First Street, NE
Washington, DC 20002-4242
Phone: (202) 336-5979
Fax: (202) 336-5978

Admission Requirements

The Clinical Psychology PhD Program application deadline is December 1.

Completed graduate applications should be submitted online (<http://louisville.edu/graduate/apply/>) to the University of Louisville, Graduate School. Interested students may also call the Graduate School at (502) 852-6495 for more information.

Our PhD programs admit students to begin in the fall semester, with a usual start date of August 1. Applicants must provide the following:

- All applicants for whom English is a second language must also submit official TOEFL scores of 79 or higher on the internet-based test, 213 or higher on the computer-based test. English proficiency can also be met by submitting official IELTS scores of at least 6.5 overall band score from the academic module exam or official Duolingo overall score of 105. Students holding a bachelor's or advanced degree from an accredited institution in the United States may be exempt from this requirement.
- Transcripts of college records from all schools attended must be submitted to the Graduate School. Students must have earned an undergraduate degree from an accredited college or university.
- Three letters of recommendation from academic sources are required and must be submitted to the Graduate School.

Application materials are available online (<http://louisville.edu/psychology/doctorate/>). For additional information, contact Maggie Leahy, maggie.leahy@louisville.edu or (502) 852-4364.

The Clinical Psychology PhD curriculum contains two basic sets of core courses: department/general core and clinical core. The curriculum closely follows guidelines for accreditation established and maintained by the American Psychological Association's Office of Program Consultation and Accreditation (<https://accreditation.apa.org/>).

General Core

Code	Title	Hours
Area A		
PSYC 620 or PSYC 621	Human Learning Cognitive Processes	3
Area B		
PSYC 642 or PSYC 643	Behavioral Neuroscience Principles of Neuroscience	3
Area C		
PSYC 670	Advanced Social Psychology	3
PSYC 661	Advanced Developmental Psychology	3
PSYC 673	Advanced Personality Theory	3
Area D		
PSYC 610 & PSYC 611	Advanced Statistics I Advanced Statistics II	6
Minimum Total General Core Hours		21

Clinical Core

Code	Title	Hours
PSYC 656	Professional and Ethical Issues in Clinical Psychology	3
PSYC 679 & PSYC 680	Introduction to Assessment and Clinical Skills Intellectual and Cognitive Assessment	6
PSYC 683 & PSYC 684	Advanced Research Methods in Psychology Psychological Interventions	6
PSYC 685	Clinical Psychology Practicum (multiple semesters) ¹	11
PSYC 689	Clinical Psychopathology	3
PSYC 693	Interviewing Skills Practicum	1
Minimum Total Clinical Core Hours		30

Other Degree Requirements

Code	Title	Hours
PSYC 601	History of Modern Psychology	3
Seminars²		9

Students are required to complete a minimum of two graduate seminars offered within the department. Seminars offered in other departments may be considered to fulfill this requirement with the consent of the Director of Clinical Training.

Culture & Diversity

Students are required to complete a graduate course in culture and diversity. This may count as one of the two seminars required.

Research		6
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Students will complete a minimum of six (6) research hours for master's (PSYC 603) and dissertation (PSYC 701).

Minimum Total Other Hours	18
MINIMUM TOTAL HOURS	69

¹ A total of eleven (11) cumulative credit hours are required for the PhD; students are expected to have an **annual minimum** of 160 direct contact hours in order to fulfill this requirement.

² Recent seminars include: Power, Privilege, & Psychopathology, Geropsychology Assessment, Geropsychology, Clinical Neuropsychology, Cultural Neuroscience, Cultural Diversity in Psychology, and Child Psychopathology.

The Doctor of Philosophy in Clinical Psychology program prepares students to meet the requirements for certification and/or licensure. If you plan to pursue professional licensure or certification you should first determine your state's criteria for examination and licensure to see how/if our program meets those requirements prior to enrollment. We recommend that you also contact your state's licensing board directly to verify that the requirements have not changed recently and to answer any questions especially those regarding additional requirements beyond the degree.

More information about certification or licensure is available at the following website: <https://louisville.edu/oapa/licensure-information> (<https://louisville.edu/oapa/licensure-information/>) (you may search by school or by the name of the program then click on 'View Details' to display the information).

For programs with an online option, more information about certification or licensure is available here: <https://louisville.edu/online/About-Us?tab=disclosures> (<https://louisville.edu/online/About-Us/?tab=disclosures>).

Psychology - Experimental (PhD)

Doctor of Philosophy in Psychology - Experimental

Unit: College of Arts and Sciences (<http://louisville.edu/artsandsciences/intro/>) (GA)

Department: Psychological and Brain Sciences (<http://louisville.edu/psychology/>)

Program Website (<https://louisville.edu/psychology/graduate/experimental/>)

Academic Plan Code(s): EPSYPHD

Program Information

Experimental psychologists conduct research to better understand human and animal behavior. Their scientific findings provide insights that improve teaching and learning methods, promote healthy child development and improve visual and hearing aids, to list a few examples.

The Experimental Psychology doctoral program at the University of Louisville is designed to prepare students for careers in academic, clinical, and applied research settings as well as industry positions involving psychological science, data analysis, and management. Our students are trained in core areas of psychology, research design and methods, data analysis, teaching, and oral and written communication, all of which makes our students highly employable.

Research Training

Students in our program get extensive training in research. From their first day of the program to the last, students are actively involved in research. A student's specific graduate training experience will depend

in part on whom the student chooses as a graduate mentor and the student's specialized area of interest. Faculty mentors for the Experimental Psychology program are listed on the graduate program website (<http://louisville.edu/psychology/graduate/experimental/>). Areas of specialized training are:

- Cognition
- Development
- Visual and Auditory Sciences
- Neuroscience

Curriculum

Our curriculum is designed to be flexible and meet the needs of individual students in our program. Students in our program take classes in two of four core areas of psychology (selected by student and mentor), two statistics courses (required of all students in our program), and five electives or specialized seminars on special topics (selected by student and mentor). Additionally, first-year students attend a pro-seminar on Research Methods in the fall semester, in which Experimental Psychology faculty teaches students about the research methods used in their labs. Students also develop their own presentation skills in a weekly Brown Bag seminar held in both the fall and spring semesters. Finally, students in our program complete a Master's Research Portfolio (typically right after the second year), a Preliminary Exam (typically in their third year), and a Dissertation.

Professional Development

Professional development is an important piece of our program. Graduate students in our program are highly encouraged to publish, present their research, attend research conferences, and gain teaching experience either as a GTA or instructor of record. They are also encouraged to take advantage of the Graduate Schools' PLAN workshops, academies, and resources (<http://louisville.edu/graduate/plan/>), which are designed to help graduate students develop their professional skills. Their programs are geared toward students who want to develop their teaching, grant writing, publishing, community engagement, and entrepreneurial skills, just to name a few.

The department offers an intellectually enriching environment with a departmental Colloquium Series, the Experimental Psychology Brown Bag, and the Clinical Psychology Colloquium and Professional Development Series. The department also hosts the Grawemeyer Award in Psychology (<https://louisville.edu/psychology/grawemeyer-award/>), a large monetary award given annually to a psychologist with a creative, influential idea in psychology.

Financial Support

Financial support for graduate students in the Experimental Psychology PhD program is available in the form of research assistantships, teaching assistantships, and University Fellowships. Most forms of support are for 12 months and include a stipend, full tuition, and health insurance.

Admission Requirements

We take a holistic approach to reviewing prospective student applications. Applicants who are admitted to our program typically possess the following qualifications, but they are not required:

- Complete graduate admissions application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>)

- Undergraduate GPAs of 3.0 or higher
- GRE Verbal and Quantitative scores in the 50th percentile or higher
- Strong letters of recommendation that speak to the applicant's scholarly ability and potential to succeed in a doctoral program
- A match between the applicant's and faculty mentor's research interests
- A psychology or neuroscience major

All applicants will be considered without discrimination on the basis of differences in age, ethnic or racial background, gender, physical abilities, sexual orientation or preference, or social background. Our program values diversity and has accepted applicants that vary on the above characteristics.

For more information, please visit our program's Application Instructions (<http://louisville.edu/psychology/graduate/experimental/apply/>) page.

Program Requirements

Code	Title	Hours
Statistics Core		6
<i>Students are required to take the following two courses:</i>		
PSYC 610	Advanced Statistics I	
PSYC 611	Advanced Statistics II	
Program Core		6
<i>Students are required to take two of the following courses:</i>		
PSYC 621	Cognitive Processes	
PSYC 631	Sensation and Perception	
PSYC 642	Behavioral Neuroscience	
	or PSYC 643 Principles of Neuroscience	
PSYC 661	Advanced Developmental Psychology	
Electives ¹		15
<i>Students are required to take five additional 600-level or above graduate seminars/courses</i>		
Other Course Requirements		33
PSYC 602	Research in Experimental Psychology (PSYC 602-02, required first fall semester) ²	
PSYC 602	Research in Experimental Psychology (PSYC 602-01, repeated until in doctoral candidacy) ³	
PSYC 605	Independent Study (Research) (Repeated until in doctoral candidacy) ⁴	
PSYC 701	Dissertation Research ⁵	
	or DOCT 600 Doctoral Candidacy	
Minimum Total Hours		60

¹ Students who take more than two of the Program Core courses listed above may count the additional core courses as electives.

² In this weekly 50-minute proseminar, faculty will rotate giving presentations on the research methods used in their labs and research areas.

³ The weekly 50-minute Brown Bag provides a forum for students and faculty to present completed or ongoing research.

⁴ Students are required to register for PSYC 605 Independent Study (Research) with the student's graduate research mentor every semester until the Preliminary Examination is successfully completed.

- ⁵ Upon passing the preliminary examination, students must maintain continuous enrollment at the University of Louisville until receiving their degree in one of two ways:
- Enrolling in classes and/or PSYC 701 (Dissertation Research), **OR**
 - Enrolling in DOCT 600 Doctoral Candidacy.

Master of Science in Experimental Psychology

Students are required to earn a Master of Science in Experimental Psychology. To earn the MS degree, with an approval of the student's mentor, the student will prepare a portfolio of written work featuring research efforts and training primarily undertaken as a graduate student in the program at the University of Louisville. The portfolio should demonstrate scope and quality of research commensurate with the degree. The portfolio is typically completed in or after the summer of the second year and must be approved by the student's Master's Portfolio Committee.

After approval of the MS portfolio and completion of 45 credit hours of graduate study, including the Statistics and Program Core, the student is awarded the Master of Science degree.

Preliminary Examination

The Preliminary Examination consists of an original written review and critique of a research area. The Preliminary Examination will be evaluated based on the breadth of knowledge, integration of literature, critical thinking, and quality of scientific writing. Students will plan the preliminary examination in collaboration with their mentors and Preliminary Examination Committees. The Preliminary Examination is typically completed by the end of the third year of training.

Dissertation

An original research project conducted and described in a report (the doctoral dissertation) by the student. The dissertation is conducted in consultation with a faculty committee and must be approved by the committee.

Public Administration (MPA)

Master of Public Administration

Unit: College of Arts and Sciences (<https://louisville.edu/artsandsciences/>) (GA)

Department: Urban and Public Affairs (<https://louisville.edu/upa/>)

Program Website (<https://louisville.edu/upa/programs/mpa/>)

Academic Plan Code(s): PADMPA, PADMPADML, PADMMPANPM, PADMMPAURG

Program Information

General Information

The Master of Public Administration (MPA) Program at the University of Louisville is central to the University's urban/metropolitan mission. The academic curriculum provides students with a solid foundation in public and nonprofit administration and prepares graduates for placement and advancement in public, private and nonprofit sector careers. The MPA faculty also advances knowledge in the field of public administration through their theoretical and applied research. The MPA is fully accredited by the National Association of Schools of Public Affairs and Administration.

The MPA requires 36 credit hours for completion. A student can enroll on either a part-time or full-time basis. Classes are offered in formats and at

times that accommodate students who work full time. Traditional classes are offered Monday through Thursday, one evening a week, from 5:30 until 8:15 PM. Hybrid-distance courses have fewer classroom meetings. Some courses are offered entirely online.

The program includes faculty from various disciplines and is aimed at providing recent college graduates, public sector practitioners, and persons in related fields with a mix of theoretical knowledge and applied skills. The degree program is available to qualified individuals holding a bachelor's degree from an accredited college or university. No specific undergraduate major is required; however, coursework in economics and political science at the undergraduate level is helpful.

Dual Degree Programs

MPA/MA Programs

The Master in Public Administration Program offers dual degree programs with the Master in Urban Planning and the Master of Arts in Art (Creative) and Art History (Concentration in Critical and Curatorial Studies). For more information about the two dual programs please go to the program webpage (<https://louisville.edu/upa/programs/mpa/mpa-ma/>).

MUP/MPA Programs

The Master in Public Administration Program offers dual degree programs with the Master in Urban Planning and the Master of Public Administration. For more information about the two dual programs please go to the program webpage (<http://louisville.edu/upa/programs/mup/mup-mpa/>).

Admission Requirements

The procedures for admission to the MPA program are as follows:

- Submit a completed online graduate application (<http://www.louisville.edu/graduate/apply/>) to the University of Louisville, Graduate School. Program candidates may be admitted for fall, spring or summer semesters.
- Official transcripts verifying the receipt of a baccalaureate degree from an accredited institution must be submitted to the Graduate School.
- A written personal statement is required. The statement should indicate why the applicant wishes to pursue the MPA degree.
- Two letters of recommendation are required. Normally, at least one letter should be from someone who can comment on the applicant's academic performance.
- All applicants for whom English is a second language must also submit official TOEFL scores of 79 or higher on the internet-based test, 213 or higher on the computer-based test. English proficiency can also be met by submitting official IELTS scores of at least 6.5 overall band score from the academic module exam or official Duolingo overall score of 105. Students holding a bachelor's or advanced degree from an accredited institution in the United States may be exempt from this requirement.

Program Requirements

The MPA requires 36 credit hours for completion: a core curriculum of 21 credit hours, three (3) credit hours of practicum internship or thesis, and twelve (12) credit hours from one of the three areas of concentration.

Code	Title	Hours
PADM 600	Foundations of Public Administration	3
PADM 601	Applied Research Methods	3
PADM 603	Program Evaluation	3
PADM 606	Urban Policy Analysis	3
PADM 624	Ethics in Public Administration	3
PADM 642	Human Resources Management	3
PADM 664	Cultural Competency and Action	3
PADM 682 or PADM 695	Practicum/Internship Thesis	3
Area of Concentration (see below)		12
Minimum Total Hours		36

MPA students may choose three (3) credit hours of elective credits from among all PADM (Public Administration) or PLAN (Planning) courses. Students in dual degree programs requiring a thesis or internship may only be required to take three (3) credit hours of PADM 682 Practicum/Internship.

MPA Areas of Concentration

MPA Students complete twelve (12) credit hours from one of the three areas see Concentration Requirements.

Dual MPA/MA in Art (Creative) and Art History (Concentration in Critical and Curatorial Studies

Code	Title	Hours
Core Courses		
PADM 600	Foundations of Public Administration	3
PADM 603	Program Evaluation	3
PADM 624	Ethics in Public Administration	3
PADM 642	Human Resources Management	3
PADM 648	Mediation and Dispute Resolution	3
PADM 664	Cultural Competency and Action	3
CCS 600	Graduate Seminar	1
Electives		
500- or 600-level Art History (ARTH) elective		3
500- or 600-level ARTH elective outside Fine Arts		3
500- or 600-level ARTH elective outside CCS concentration		3
Nonprofit Administration		
PADM 609	Nonprofit Management	3
PADM 611	Financial Management of Nonprofits	3
PADM 612	Grantsmanship and Fundraising	3
Critical and Curatorial Studies		
ARTH 642	Theories & Methods in the Visual Arts	3
CCS 647	Introduction to Critical and Curatorial Studies I	3
CCS 648	Critical and Curatorial Studies II	3
Internship/Practicum/Thesis		
CCS 649	Curatorial Internship	3
CCS 645	Thesis Guidance	6

PADM 682	Practicum/Internship	3
Minimum Total Hours		58

MPA Areas of Concentration

MPA Students complete twelve (12) credit hours from one of the three areas of emphasis below:

Urban Governance (PADMMPAURG)

Code	Title	Hours
PADM 604	Public Budgeting	3
PADM 605	Public Management	3
PADM 645	Economic Development	3
PADM 663	Social Equity and the Public Sector	3
Urban Governance elective ¹		3

Nonprofit Management (PADMMPANPM)

Code	Title	Hours
PADM 609	Nonprofit Management	3
PADM 611	Financial Management of Nonprofits	3
PADM 612	Grantsmanship and Fundraising	3
PADM 615	Leadership and Community Engagement	3
Nonprofit-Focused Elective ¹		3

Diversity Management and Leadership (PADMMPADML)

Code	Title	Hours
PADM 604 or PADM 611	Public Budgeting Financial Management of Nonprofits	3
PADM 605 or PADM 609	Public Management Nonprofit Management	3
PADM 615	Leadership and Community Engagement	3
PADM 664	Cultural Competency and Action	3
Diversity-Focused Elective ¹		3

¹: Electives must be approved by faculty leader.

Public Health (MPH)

Master of Public Health

Unit: School of Public Health and Information Sciences (<https://louisville.edu/sphis/>) (GH)

Program Website (<https://louisville.edu/sphis/academics/mph-program/>)

Academic Plan Code(s): See Concentration Requirements tab.

Program Information

Introduction

The Master of Public Health (MPH) degree program is designed to graduate students with skills in the core competencies in public health and additional competencies in one of the following concentrations:

biostatistics, epidemiology, health policy, health promotion and behavioral sciences, or global public health.

Graduates of the MPH program are prepared for positions in the public health workforce, in health-related industries, and in academic organizations and for further professional or academic education.

Competencies

The MPH program has adopted the foundational competencies published by the Council on Education for Public Health (CEPH 2016 MPH Foundational Competencies (https://storage.googleapis.com/media.ceph.org/wp_assets/2016.Criteria.pdf)) and each MPH concentration has developed concentration-specific competencies.

The learning objectives for each core course in the MPH curriculum are mapped to these targeted foundational CEPH competencies and the learning objectives for courses offered in each concentration are mapped to the specific competencies developed for that concentration.

Concentrations

Concentrations are offered in each of the following areas of public health. Each concentration is designed to develop the competencies needed by a public health worker in the corresponding area.

Concentration	Department
Biostatistics	Bioinformatics and Biostatistics
Epidemiology	Epidemiology and Population Health
Global Public Health - emphasis in Maternal and Child Health	Epidemiology and Population Health
Health Policy	Health Management and System Sciences
Health Promotion and Behavioral Sciences	Health Promotion and Behavioral Sciences

Students are encouraged to declare their concentration at the time of application, though applications from students that do not declare a concentration are also accepted. For students declaring concentrations, the faculty in each concentration reviews applicants for acceptance. Applications from students that do not declare a concentration are reviewed for acceptance by the MPH Program Director.

Requirements for declaring concentrations in the MPH program after matriculation are:

- Undeclared students will need to identify to a concentration prior to November 15 of their first semester.
- The student must be in good standing in the MPH program.
- Any undeclared student will first meet with the department chair or director of the concentration prior to declaring that concentration to determine if there are any additional criteria for admission to that concentration.

Accreditation

The School of Public Health and Information Sciences is accredited by the Council on Education for Public Health (CEPH). For more information, see the School's accreditation webpage (<http://louisville.edu/sphis/accreditation/>).

Accelerated Bachelor's-MPH in Public Health

The accelerated degree program allows any qualifying undergraduate student to complete their undergraduate bachelor's degree and the Master of Public Health (MPH) over a five year period. The first four years consist of undergraduate studies, including up to 15 credits of graduate level courses taken during the senior year, culminating in the award of a bachelor's degree.

The fifth year, including the summer following graduation with a bachelor's degree, consists of graduate coursework in public health, leading to completion of the Master of Public Health (MPH) degree. The Master of Public Health (MPH) degree program is designed to provide students with training in foundational MPH competencies as well as a specific area of concentration. MPH concentrations currently available for the accelerated program are:

- Epidemiology
- Health Policy
- Health Promotion and Behavioral Sciences
- Global Public Health with an emphasis in Maternal and Child Health

MPH graduates are prepared for positions in the public health workforce, health-related industries, academic organizations, or for further professional or academic education.

The accelerated curriculum allows students to take a maximum of 15 credit hours of the Master of Public Health course work during their undergraduate studies.

For more information, please refer to the School of Public Health and Information Sciences Undergraduate Programs (<https://louisville.edu/sphis/academics/bs-ba-public-health/bs-ba-in-public-health/>) page.

Dual MPH in Health Policy - Masters in Health Administration

The dual MPH (Health Policy) - MSHA degree program facilitates development of advanced population and public health management professionals that may leverage knowledge and practices from both public health science and healthcare management domains to serve in leadership roles within public health institutions, federal-state-local agencies, and healthcare organizations. For more information about the dual program, please visit the program webpage (<https://louisville.edu/sphis/departments/hmss/academics-1/dual-mph-in-health-policy-msha-program/>).

Admission Requirements

The ideal candidate for admission to the MPH program has received the equivalent of a bachelor's degree or higher, can comprehend and communicate effectively in English, has the recommendations of at least three persons in a health-related or advanced education field, has performed satisfactorily on one or more standardized test, and is interested in pursuing a career in public health or a related field.

The requirements for admission to the MPH program are:

- Bachelor's degree from an accredited institution or its equivalent
- Recommended minimum GPA of 3.0 on a 4.0 scale
- If a candidate's primary language is not English, one of the following:
 - Test of English as a Foreign Language (TOEFL) exam with a minimum score of 90 (after conversion for test type), official

IELTS scores of at least 6.5 overall band score from the academic module exam or official Duolingo overall score of 105.

- Passing an advanced level Intensive English as a Second Language program
- ECFMG (Educational Commission for Foreign Medical Graduates) certification
- Degree from an accredited U.S. institution (requires provisional admission with evaluation of English language competency and potential requirement to pass an advanced level Intensive English as a Second Language program)

Applicants must apply through the Centralized Application Service for Public Health, SOPHAS (<https://sophas.org/>).

An application is considered after the following requirements have been received:

- Three letters of recommendation written within the last twelve months.
- Official transcripts of all degrees.
- One-page personal statement written by the applicant that is a clear, substantive description of his or her goals in public health, noting any professional or research experience.
- GRE scores are not required for the following MPH concentrations: Global Health, Health Promotion and Behavioral Sciences, Health Policy, and Epidemiology.
- GRE scores are required for the MPH concentration in Biostatistics.
- **International applicants:** Foreign credential evaluation of all degrees from non-U.S. institutions. Please contact the MPH program prior to completing this requirement.
- Students applying with a concentration in Health Policy must be interviewed by the HMSS Health Leadership Committee.

Application Deadline

Fall semester – March 1 (International applicants). Applications are accepted on a rolling basis for domestic students. Domestic students are encouraged to apply no later than 30 days prior to the start of the fall semester.

Spring semester – Applications are not accepted.

Summer semester – Applications are not accepted.

For information on the application process, please contact:

MPH Program
School of Public Health and Information Sciences
University of Louisville
485 East Gray Street
Louisville, KY 40202

sphismph@louisville.edu

Phone: (502) 852-3289

Fax: (502) 852-3294

Faculty Advisor

On matriculation, each student is assigned a faculty advisor and is requested to meet at least twice each semester with his or her advisor.

If a student is admitted to a specific concentration, the director of the concentration will assign a specific faculty member as advisor. If

students are admitted to the program as undeclared, the MPH program director will serve as their advisor. Undeclared students admitted to a specific concentration by the end of the first semester will be assigned a faculty advisor by the director of the concentration.

The faculty advisor serves as academic practicum advisor, academic mentor, and counselor on career and employment opportunities, professional development, and opportunities beyond graduate school.

Program Requirements

The MPH curriculum consists of core courses, concentration courses in one of the areas of public health, completion of a practicum experience, and completion of an integrating experience. The core courses are generally completed prior to taking concentration courses, the integration experience, and the practicum.

Full-time students are expected to complete the program and graduate in two years. Part-time students are required to complete the program and graduate within six years.

Coursework

42-48 total credit hours:

- 12 credit hours of core courses
- 4 credit hours of Practice Experience
- 2 credit hours of Integrative Experience
- 24-30 credit hours of concentration coursework

Students must successfully complete core, concentration, practicum, and integrating experience coursework with a minimum GPA of 3.0.

MPH Coursework

Code	Title	Hours
Core Coursework		12
PHMS 501	Introduction to Public Health Practice and Administration	
PHPB 501	Introduction to Public Health Behavior	
PHEP 501	Introduction to Epidemiology	
PHST 500	Introduction to Biostatistics for Health Sciences I	
Practice Experience		4
PHPH 677	Public Health Practice Experience 1	
PHPH 678	Public Health Practice Experience 2	
PHPH 679	Public Health Practicum Experience 3	
Integrative Experience		2
PHPH 698	Public Health Integrative Learning Experience	
Concentration Coursework		24-30
See Concentration Requirements for specific coursework and a two-year (full-time) Plan of Study		
Minimum Total Hours		42-48

Concentration courses (minimum 24 credit hours)

All students seeking an MPH degree in the School of Public Health and Information Sciences must take a minimum of 24 credit hours in their selected concentration. For a detailed description of coursework for each of the concentrations, click on "Concentration Requirements" in the menu above.

Concentration Requirements

Concentration in Biostatistics

Academic Plan Code(s): PH_ _MPHBIO

42 total credit hours, made up of the following:

- 12 credit hours of MPH core coursework
- 4 credit hours of Practice Experience
- 2 credit hours of Integrative Experience
- 24 credit hours of required courses in Biostatistics

The Biostatistics concentration is not available for completion by accelerated MPH students.

Year 1		
Fall		Hours
PHMS 501	Introduction to Public Health Practice and Administration	3
PHPB 501	Introduction to Public Health Behavior	3
PHEP 501	Introduction to Epidemiology	3
PHST 500	Introduction to Biostatistics for Health Sciences I	3
Hours		12
Spring		
PHST 501	Introduction to Biostatistics for Health Sciences II	3
PHMS 641	Data Mining I	3
PHST 620	Introduction to Statistical Computing	3
PHPH 677	Public Health Practice Experience 1	1
Hours		10
Year 2		
Fall		Hours
PHST 680	Biostatistical Methods I	3
PHEP 602	Epidemiological Methods	3
PHPH 678	Public Health Practice Experience 2	1
PHPH 698	Public Health Integrative Learning Experience	2
Hours		9
Spring		
PHST 640	Statistical Methods for Research Design in Health Sciences	3
PHST 681	Biostatistical Methods II	3
PHST 684	Categorical Data Analysis	3
PHPH 679	Public Health Practicum Experience 3	2
Hours		11
Minimum Total Hours		42

Concentration in Epidemiology

Academic Plan Code(s): PH_ _MPHEPI

- Accelerated BA in Public Health-MPH: PHBAMPHEPA
- Accelerated BS in Public Health-MPH: PHBSMPHEPA
- Accelerated BA/BS-MPH for non-Public Health majors: PHMPHEPA

Students concentrating in the MPH Epidemiology Program will be required to fulfill a minimum of 45 credit hours including the following:

- 12 credit hours of MPH core coursework
- 4 credit hours of Practice Experience
- 2 credit hours of Integrative Experience
- 24 credit hours of required courses in Epidemiology
- Three (3) credit hours (maximum) of either: a) an epidemiology selective¹ or b) an independent study (i.e., PHEP 666)²

Year 1		
Fall		Hours
PHMS 501	Introduction to Public Health Practice and Administration	3
PHPB 501	Introduction to Public Health Behavior	3
PHEP 501	Introduction to Epidemiology	3
PHST 500	Introduction to Biostatistics for Health Sciences I	3
Hours		12
Spring		
PHST 501	Introduction to Biostatistics for Health Sciences II	3
PHEP 627	Survey Research Methods	3
PHEP 604	Epidemiology of Infectious Disease	2
PHEP 616	Disease Surveillance and Health Statistics	3
PHPH 677	Public Health Practice Experience 1	1
Hours		12
Year 2		
Fall		Hours
PHEP 602	Epidemiological Methods	3
PHEP 609	Epidemiology of Cardiometabolic Disease	2
PHEP 620	Environmental and Occupational Epidemiology	3
PHPH 678	Public Health Practice Experience 2	1
Hours		9
Spring		
PHEP 607	Epidemiology of Cancer	2
PHEP 655	Emerging Issues in Epidemiology	3
One of the following:		3
PHEP 666	Master's Independent Study in Epidemiology and Population Health	
PHEP Selective (see list below) ¹		
PHPH 679	Public Health Practicum Experience 3	2
PHPH 698	Public Health Integrative Learning Experience	2
Hours		12
Minimum Total Hours		45

¹ **Epidemiology Electives:** Availability of the following courses will vary each year as epidemiology selectives with consideration to faculty workloads:

- PHEP 606 Genetic and Molecular Epidemiology
- PHEP 613 Epidemiology of Aging and Disability
- PHEP 624 Methods in Reproductive and Perinatal Epidemiology *
- PHEP 626 Introduction to Social Epidemiology
- PHEP 611 Nutritional Epidemiology
- PHEP 615 Foundations of Global Maternal and Child Health *
- PHEP 625 Child Health & Development *

² PHEP 666 Master's Independent Study in Epidemiology and Population Health may be taken as an optional course for MPH Epi-concentration students who wish to supplement their learning experience via independent research with a faculty member. Enrollment is limited to three (3) credit hours for an MPH student.

*Availability subject to coordination with Global Health Concentration. Non-epidemiology courses also may be selected pending program and instructor permissions; all courses offered by SPHIS are pre-approved by the program, with the exception of those required for the MS or PhD in Epidemiology (PHEP 618, PHEP 621, PHEP 622, PHEP 623, PHEP 701, PHEP 702, PHEP 750, PHEP 778) for which both program and instructor permission will be required for enrollment.

Concentration in Global Public Health – Maternal and Child Health Emphasis

Academic Plan Code(s): PH_ _MPHGPH

- Accelerated BA in Public Health-MPH: PHBAMPHGPA
- Accelerated BS in Public Health-MPH: PHBSMPHGPA
- Accelerated BA/BS-MPH for non-Public Health majors: PHMPHGPA

47 total credit hours, made up of the following:

- 12 credit hours of MPH core coursework
- 4 credit hours of Practice Experience
- 2 credit hours of Integrative Experience
- 20 credit hours of Global MPH concentration courses
- 9 credit hours of targeted MCH emphasis coursework

Year 1		
Fall		
		Hours
PHMS 501	Introduction to Public Health Practice and Administration	3
PHPB 501	Introduction to Public Health Behavior	3
PHEP 501	Introduction to Epidemiology	3
PHST 500	Introduction to Biostatistics for Health Sciences I	3
Hours		12
Spring		
PHST 501	Introduction to Biostatistics for Health Sciences II	3
PHMS 530	Comparative Health Systems	3
PHEP 615	Foundations of Global Maternal and Child Health	3
PHPH 677	Public Health Practice Experience 1	1
Hours		10
Year 2		
Fall		
PHEP 602	Epidemiological Methods	3
PHEP 604	Epidemiology of Infectious Disease	2
PHEP 624	Methods in Reproductive and Perinatal Epidemiology	3
PHPB 614	Public Health Intervention Design, Implementation, and Sustainment	3
PHPH 678	Public Health Practice Experience 2	1
Hours		12
Spring		
PHPB 615	Program Evaluation	3
PHEP 625	Child Health & Development	3
PHEP 627	Survey Research Methods	3
PHPH 679	Public Health Practicum Experience 3	2
PHPH 698	Public Health Integrative Learning Experience	2
Hours		13
Minimum Total Hours		47

Concentration in Health Policy

Academic Plan Code(s): PH_ _MPHHPC

- Accelerated BA in Public Health-MPH: PHBAMPHHPA
- Accelerated BS in Public Health-MPH: PHBSMPHHHPA
- Accelerated BA/BS-MPH for non-Public Health majors: PHMPHHHPA

48 total hours, made up of the following:

- 12 credit hours of MPH core coursework
- 4 credit hours of Practice Experience
- 2 credit hours of Integrative Experience

21 credit hours of concentration coursework
9 credit hours of Health Policy elective coursework

The Health Policy concentration is not available for completion by accelerated MPH students.

Year 1		
Fall		
		Hours
PHMS 501	Introduction to Public Health Practice and Administration	3
PHPB 501	Introduction to Public Health Behavior	3
PHEP 501	Introduction to Epidemiology	3
PHST 500	Introduction to Biostatistics for Health Sciences I	3
Hours		12
Spring		
PHST 501	Introduction to Biostatistics for Health Sciences II	3
PHMS 610	Health Policy and Analysis	3
PHMS 530	Comparative Health Systems	3
PHMS 635	Health Law and Ethics	3
PHPH 677	Public Health Practice Experience 1	1
Hours		13
Year 2		
Fall		
PHMS 662	Health Economics	3
One of the following:		3
Health Policy Elective #1 *		
PHMS 670	Statistical Data Management (recommended for students wishing to pursue the PhD in Health Management & Policy)	3
Health Policy Elective #2 *		3
PHPH 678	Public Health Practice Experience 2	1
Hours		10
Spring		
PHMS 509	Health Finance and Financial Management	3
One of the following		3
Health Policy Elective #3 *		
PHMS 671	Statistical Analysis for Population Health (recommended for students wishing to pursue the PhD in Health Management & Policy)	3
PHPB 611	Community-Centered Engagement and Assessment	3
PHPH 679	Public Health Practicum Experience 3	2
PHPH 698	Public Health Integrative Learning Experience	2
Hours		13
Minimum Total Hours		48

Recommended Health Policy Electives*

- PHMS 685 Health Operations & Management Science
- PHMS 615 Introduction to Health Systems
- PHPB 705 Policy to Advance Health Equity
- PADM 605 Public Management
- UPA 650 Urban Policy Analysis
- PHMS 700 Introduction to Health Services Research*
- PHMS 708 Population Health and Health Disparities*
- PHMS 715 Health Policy Research*
- SOC 618 Qualitative Research Methods*

*Students interested in pursuing the PhD in Public Health Sciences, specialization in Health Management and Policy (<http://catalog.louisville.edu/archive/2023-2024/graduate/programs-study/phd-in-public-health-sciences-specialization-health-management-policy/>)

should align their health policy electives with PhD courses to save up to nine (9) credit hours in the doctoral program.

Concentration in Health Promotion and Behavioral Sciences

Academic Plan Code(s): PH_ _MPHHKC

- Accelerated BA in Public Health-MPH: PHBAMPHHKA
- Accelerated BS in Public Health-MPH: PHBSMPHHKA
- Accelerated BA/BS-MPH for non-Public Health majors: PHMPHHKA

45 total hours, made up of the following:

12 credit hours of MPH core coursework
4 credit hours of Practice Experience
2 credit hours of Integrative Experience
27 credit hours of concentration coursework

Year 1		
Fall		Hours
PHMS 501	Introduction to Public Health Practice and Administration	3
PHPB 501	Introduction to Public Health Behavior	3
PHEP 501	Introduction to Epidemiology	3
PHST 500	Introduction to Biostatistics for Health Sciences I	3
Hours		12
Spring		
PHPB 654	Foundations of Health Equity	2
PHPB 611	Community-Centered Engagement and Assessment	3
PHPB 630	Social and Structural Determinants of Health	3
PHPB 652	Evidence-Based Practices in Public Health	3
PHPH 677	Public Health Practice Experience 1	1
Hours		12
Year 2		
Fall		Hours
PHPB 612	Health Communication: Theory and Practice	3
PHPB 614	Public Health Intervention Design, Implementation, and Sustainment	3
PHPB 635	Health Promotion Policy Development	3
PHPH 678	Public Health Practice Experience 2	1
Hours		10
Spring		
PHPB 615	Program Evaluation	3
PHPB 651	Equitable Leadership and Program Management in Public Health	4
PHPH 679	Public Health Practicum Experience 3	2
PHPH 698	Public Health Integrative Learning Experience	2
Hours		11
Minimum Total Hours		45

*Other elective can be any SPHIS course for which the student meets the prerequisites or other another relevant course approved by the student's academic advisor.

Public Health Sciences: Specialization in Epidemiology (PhD)

Doctor of Philosophy in Public Health Sciences, specialization in Epidemiology

Unit: School of Public Health and Information Sciences (<http://louisville.edu/sphis/>) (GH)

Department: Epidemiology and Population Health (<http://louisville.edu/sphis/departments/epidemiology-population-health/>)

Program Website (<http://louisville.edu/sphis/departments/eph/academics/>)

Academic Plan Code(s): PHSCPHDEPI

Program Information

The specialization in Epidemiology in the PhD program in Public Health Sciences is designed to develop academic researchers in population-based epidemiology.

Competencies

To graduate, students in the PhD specialization in Epidemiology must be able to demonstrate the following competencies:

- Explain the evolving paradigms of epidemiological theory and study design and their impact on public health services
- Critically evaluate scientific literature on an epidemiologic problem to identify strengths and limitations, biases and gaps in knowledge
- Formulate epidemiologic research questions and testable hypotheses
- Apply epidemiologic study designs for specific research hypotheses
- Apply computer software for data management and analysis
- Design and apply methods for data collection and management for epidemiologic research
- Apply advanced quantitative methods to analyze an epidemiologic problem
- Integrate cross-disciplinary knowledge from molecular to population levels to make appropriate causal inferences
- Communicate in written and oral presentations epidemiologic concepts and findings to diverse audiences
- Demonstrate mastery of a substantive area of epidemiology
- Complete a hypothesis-based epidemiologic research study suitable for publication in a peer-reviewed journal

In greater detail, a PhD student must specifically demonstrate:

- In-depth knowledge of the history and philosophy of epidemiology
- Mastery of experimental and observational study designs and the ability to identify optimal designs for specific hypotheses
- Ability to develop and apply:
 - Questionnaires
 - Biomarkers for health status, exposure, and susceptibility
- Mastery of multivariable analytic methods for evaluating risk and prognosis
- Ability to critically evaluate the published epidemiologic research
- Expertise in one or more epidemiologic specialties such as nutritional, molecular, clinical, genetic, cancer, or chronic disease epidemiology
- Practical knowledge of issues in research management including:
 - Formation and leadership of multidisciplinary teams
 - Staffing, budgeting, tracking
 - Subject recruitment and retention
 - Data quality control and data safety management
 - Funding mechanisms and grantsmanship
 - Research ethics and regulations
- Professional quality peer-review, oral and poster presentation, report, grant, and manuscript writing

- Mentoring of junior peers
- Development, conduct, completion and defense of a dissertation on an original research project

Competencies are demonstrated by passage of the proficiency and candidacy examinations, by successful mentoring of master's students or doctoral students not yet in candidacy, and by successful completion and defense of the dissertation.

Faculty Advisor

Upon admission to the specialization, each student is assigned a faculty advisor who works with the student to develop a program of study.

Admission Requirements

Students who have satisfactorily completed the MS degree in Epidemiology are eligible for the PhD specialization in Epidemiology.

Students who have satisfactorily completed a master's degree in a relevant discipline (for example MPH, MBBS) or other advanced degree (for example, MD or DO) may be accepted into the PhD in Public Health Sciences, specialization in Epidemiology pending evaluation of appropriate training, experience, and coursework. Previous coursework in mathematics and/or statistics and biological or health sciences (for example, biology, biochemistry, anatomy, physiology, microbiology) is strongly recommended.

The following are required for admission to the University of Louisville and should be submitted to the Graduate School:

- Formal graduate application (<https://louisville.edu/graduate/futurestudents/apply-materials/application/>)
- Official transcripts
- Curriculum vitae
- A one-page personal statement describing the applicant's background and interest in epidemiology
- Two letters of recommendation
- Undergraduate GPA at least 3.0 on 4.0 scale
- International students for whom English is not their primary language must show English language proficiency by one of the following:
 - Test of English as a Foreign Language (TOEFL) score 79 or higher on the internet-based test, 213 or higher on the computer-based test.
 - Official IELTS score of at least 6.5 overall band score from the academic module exam.
 - Official Duolingo overall score of 105.
 - Hold a bachelor's or advanced degree from an accredited institution in the United States.
 - ECFMG (Educational Commission for Foreign Medical Graduates) certification

Application Deadline

Fall semester - January 1 (International applicants); February 1 (Domestic applicants).

To be competitive for available program scholarship opportunities, applicants should apply on or before March 1 for full consideration.

Spring semester - Applications are not accepted.

Summer semester – Applications are not accepted.

Program Requirements

The Public Health PhD specialization in Epidemiology is designed to consist of 49 credit hours of coursework over a minimum of two years plus one to four years for completion of the dissertation. The coursework is organized into two blocks of 26 and 23 credit hours. The curriculum outlined below represents an *ideal* sequence for a full-time student. A part-time student may need to deviate from this sequence. Completion of the first block of coursework is prerequisite for sitting for the proficiency examination. After passing the proficiency examination, the student can proceed with the second block of coursework. Successful completion of the second block is prerequisite to sitting for the candidacy examination.

After passing the candidacy examination, the student is admitted to doctoral candidacy. A doctoral candidate must then successfully develop and defend a dissertation proposal that describes an original and independent research project. Upon successful defense of the proposal, the student may then proceed to dissertation research. Upon successful completion of the research, oral defense of the dissertation, and demonstration of the required competencies listed above, the student is awarded the PhD degree.

Coursework

49 total credit hours (beyond admission requirements) consisting of the following:

- 20 credit hours of required courses
- 8 credit hours of seminars in Epidemiology
- 21 credit hours of elective/selective/independent study courses

Note: Students who have completed the MS degree and have been accepted to the PhD program will advance to Block 2/Year 2 of the PhD curriculum upon matriculation. These students will still be required to complete the Seminar and Content Course Electives credits listed in Block 1/Year 1.

Year 1		
Fall		
		Hours
PHEP 621	Statistical Foundations for Epidemiology	4
PHEP 622	Population Pathology	3
PHEP 623	Theoretical Foundations of Epidemiology	3
PHEP 750	Seminars in Epidemiology	2
Hours		12
Spring		
PHEP 618	Epidemiologic Methods II	4
PHEP 750	Seminars in Epidemiology	2
Content Course Electives or Public Health Selectives (see lists below)		6
Hours		12
Summer		
PHEP 778	Doctoral Independent Study in Epidemiology and Population Health (optional, 3-6 credit hours)	optional
Hours		0
Year 2		
Fall		
PHEP 701	Advanced Epidemiologic Methods	3
PHEP 702	Epidemiologic Research Management	3
PHEP 750	Seminars in Epidemiology	2
Content Course Elective or Biostatistics Selective (see lists below)		3
Hours		11
Spring		
Content Course Elective		3
Content Course Elective or Biostatistics Selective (see lists below)		3-6
PHEP 750	Seminars in Epidemiology	2

PHEP 778	Doctoral Independent Study in Epidemiology and Population Health	3-6
	Hours	14
	Minimum Total Hours	49

Elective and Selective Coursework

Content Course Electives consist of courses specialized in either an exposure or disease category and offerings will vary from semester to semester based upon faculty workloads and student programs of study. These may include:

- PHEP 607 Epidemiology of Cancer
- PHEP 611 Nutritional Epidemiology
- PHEP 613 Epidemiology of Aging and Disability
- PHEP 615 Foundations of Global Maternal and Child Health
- PHEP 620 Environmental and Occupational Epidemiology
- PHEP 624 Methods in Reproductive and Perinatal Epidemiology
- PHEP 625 Child Health & Development
- PHEP 626 Introduction to Social Epidemiology

Public Health Electives may be an offering from another SPHIS department.

Biostatistics Electives should be restricted to advanced courses such as PHST 684 Categorical Data Analysis, PHST 683 Survival Analysis, or PHST 750 Statistics for Bioinformatics. These electives are subject to instructor permission. Students must discuss their choices with their advisor and rationalize them with respect to their program of study which must be approved by the Program Director.

A minimum of 26 credit hours of coursework is required before taking the Proficiency Exam.

A minimum of 50 credit hours of coursework is required before taking the Candidacy Exam.

Proficiency Examination

Upon successful completion of the first block of required coursework, the student is eligible to sit for the written proficiency examination, which is administered by a committee of departmental faculty appointed by the chair. The timing of the proficiency examination is determined by the student's faculty advisor and the department chair. The subject matter includes basic knowledge of disease biology and pathophysiology; theory and skills in epidemiologic research methods, including study design and management; and quantitative analytic methods. A student who does not successfully pass the proficiency examination is allowed a second opportunity to pass the exam. Failing the proficiency examination the second time results in dismissal from the program.

Candidacy Examination

After passing the proficiency examination and upon completion of the second block of coursework, the student is eligible to sit for the written and oral candidacy examination, which is administered by a committee appointed by the department chair and composed of graduate faculty. The subject matter includes knowledge of advanced epidemiologic methods; specialized knowledge pertaining to the minor field of specialization; disease biology and pathophysiology, which may be tailored to the student's special area of interest; and knowledge of the research process. Successful passage of the candidacy examination

admits the student to doctoral candidacy. A student who does not successfully pass the candidacy examination may be required to take additional or remedial coursework and is allowed a second opportunity to pass the exam. Failing the candidacy examination the second time results in dismissal from the program.

Dissertation

A dissertation is required of every candidate for the degree of Doctor of Philosophy in Public Health Sciences, specialization in Epidemiology. The dissertation is a scholarly achievement in research and presents an original contribution to knowledge. It should demonstrate a thorough understanding of research techniques in epidemiology and the ability to conduct independent research. The following sections summarize the basic requirements for the dissertation committee, dissertation proposal, and defense. Additional details are available in the department's document "Student Advising, Thesis and Dissertation Committees."

Dissertation Committee

The dissertation is read by a dissertation committee, chaired by the student's faculty advisor and appointed by the Dean of the school on the recommendation of the program director and chair of the department. The committee consists of at least four members and must include one representative of an allied department. The dissertation must be approved by the committee and the chair of the department.

Dissertation Proposal

After successful completion of the qualifying examination, a doctoral candidate must submit a written dissertation proposal to the members of the dissertation committee. The candidate is then orally examined on the dissertation proposal.

Dissertation Preparation

The dissertation is prepared with the formatting according to the guidelines of the Graduate School (<http://louisville.edu/graduate/current-students/thesis-dissertation-information/>).

Dissertation Approval

The dissertation is submitted in completed form to the chair of the department at least thirty days before the end of the term in which the candidate expects to be graduated, and the candidate is not eligible for final examination until the dissertation has been received by the committee and chair.

The dissertation committee schedules an oral defense by the candidate. The time and place for the defense is published to the general academic community, members of which are free to attend the defense. The dissertation is approved by a majority vote of the committee and the concurrence of the department chair.

Dissertation Submission

The following steps must be taken to submit the final copy of the dissertation electronically after oral defense and approval of the committee:

- Final document must be converted to a PDF (following the guidelines as noted above) and sent to the Graduate School and the department's administrative assistant.
- Submit as advised by the Graduate School through the ThinkIR repository. The directions on submission will be provided upon review of the dissertation by the Graduate School.
- The signature page within the electronic version must have the names of your committee members typed under the signature line; the signatures cannot be scanned into the document.

- d. Submit a signed signature page, digital/electronic signature page (<http://louisville.edu/graduate/current-students/thesis-dissertation-information/>) can be found on the Graduate School web-site.

A copy of the final, signed dissertation must also be deposited with the department office.

Public Health Sciences: Specialization in Health Management and Policy (PhD)

Doctor of Philosophy in Public Health Sciences, specialization in Health Management and Policy

Unit: School of Public Health and Information Sciences (<http://louisville.edu/sphis/>) (GH)

Department: Health Management and Systems Sciences (<http://louisville.edu/sphis/departments/health-management-systems-sciences/>)(HMSS)

Program Website (<http://louisville.edu/sphis/departments/hmss/academics-1/>)

Academic Plan Code(s): PHSCPHDHMP

Program Information

The specialization in Health Management and Policy is designed to prepare graduates for careers as researchers and teachers involved in the efforts to protect and promote the health and well-being of communities and populations. It provides graduates with the knowledge and skills necessary to attain academic positions involving scholarly research and instruction in the disciplines of public health management and key policy and management positions in governmental as well as private and voluntary organizations. In addition to an in-depth understanding of the infrastructure and context of public health management, graduates of this specialization are expected to be able to identify issues and questions of importance with regard to the management of the resources of public health and to design and carry out a program of research designed to address these issues and questions. Graduates should be able to demonstrate abilities as an independent investigator as well as a team collaborator.

Competencies

To graduate, a student in the PhD specialization in Public Health Management and Policy must demonstrate the following competencies:

- a. In-depth knowledge of the history of public health, health management, and health services research.
- b. Mastery of experimental research study designs, including qualitative as well as quantitative, and the ability to identify optimal designs for specific hypotheses.
- c. Ability to critically evaluate published research related to health management and health services research.
- d. Expertise in one or more health services research specialties such as health policy, organization theory, long-term care policy, health economics, etc.
- e. Practical knowledge of issues in research management including:
 - i. Formation and leadership of multidisciplinary teams.
 - ii. Staffing, budgeting, tracking.
 - iii. Data quality control and data safety management.
 - iv. Funding mechanisms and grantsmanship.
 - v. Research ethics and regulations.
- f. Professional quality peer-review, oral and poster presentation, report, grant, and manuscript writing.

Demonstration of Competency 1 is achieved by passing the doctoral qualifying examination and by successful completion and defense of the dissertation. Demonstration of Competencies 2 through 6, inclusive, is achieved by successful development, conduct, completion, and defense of the dissertation.

Program of Study

The program of study incorporates a foundation of courses intricate to health services research and healthcare management as well as addressing its multidisciplinary nature. At the PhD level, this requires that students take health management and theoretical foundation, health management research methods, and HMSS PhD seminar courses, and an emphasis area related to providing in-depth knowledge related to effectively managing the resources necessary to carry out the mission of improving access, cost, and quality within the healthcare system.

The student works with his or her faculty advisor to develop a specific program of study for the student's coursework based on the required coursework and emphasis area (see Degree Requirements tab). The student's individualized program of study must be approved by the student, faculty advisor, and the HMSS PhD Committee.

Faculty Advisor

Upon admission to the PhD specialization, each student is assigned a faculty advisor who works with the student to develop a program of study.

HMSS PhD Committee

The purpose of the HMSS PhD Committee is to oversee the overall quality of doctoral education within HMSS. The committee will:

- a. Annually review the progress of PhD students within the curriculum,
- b. Manage the qualifying exam process,
- c. Approve the composition of the dissertation committee,
- d. Approve preliminary dissertation proposals to move to the proposal defense stage, and
- e. Make curriculum quality improvement recommendations to the HMSS faculty for their approval.

Admission Requirements

An applicant who has satisfactorily completed a Master of Public Health degree, or another relevant master degree or a health professional degree is considered for admission to the Public Health Management and Policy specialization. Applicants already holding an advanced degree are evaluated on the basis of appropriateness of previous coursework, training and experience. The graduate work by such applicants is reviewed on a case-by-case basis, and the applicant, if admitted, may be required to take additional course work prior to completing the minimum 51 credit hours required for post-master's doctoral work.

Application materials must be submitted to the Graduate School.

The minimum required documentation for full admission must include:

- Graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>)
- Resume or curriculum vitae

- A personal statement that is a clear, substantive one-page description of your professional and research experience as it relates to your goals in public health and the PhD program.
- Official transcript for each degree
- Official GRE score
- Three letters of recommendation from individuals who have direct knowledge and experience with the applicant's academic or professional work experience.
- If applicant's native language is not English, one of the following:
 - Official TOEFL, IELTS or Duolingo score
 - ECFMG (Educational Commission for Foreign Medical Graduates) certification
 - Degree from an accredited U.S. Institution.
- Foreign credential evaluation for each degree not from an accredited U.S. institution
- Admission interviews by the PhD Committee are required and are in addition to your application for admission. An interview provides the PhD Committee an additional source of information and perspective about your potential fit for the University of Louisville.

The following are recommended criteria for admission:

- Undergraduate and graduate GPA each ≥ 3.0 on 4.0 scale
- GRE performance recommended in 50th percentile or above for verbal and quantitative scores (Comparable scores on the MCAT or DAT are considered.)
 - The recommended GRE requirement for PhD admission may be waived based on the candidate's educational background. Considerations for the waiver may include a Doctor of Medicine (M.D.) or a Master's degree in a quantitative discipline such as economics, math, or statistics. Applicants must request waiver as part of their initial application. The request for the waiver is assessed during initial application review and by the PhD Program Director during the admissions interview.

Application Deadline

Fall semester – March 1st.

Applications received after the priority admission deadline will be considered on a space-available basis.

Spring semester – Applications are not accepted.

Summer semester – Applications are not accepted.

Curriculum

Each doctoral student, in consultation with his or her academic advisor and the HMSS PhD Committee, plans a course of study that uniquely fits the student's career goals. The design of a doctoral program of study that reflects each student's professional skills and research interest is the primary organizing principle of the proposed program.

Program Requirements

51 total credit hours:

- 33 credit hours of required coursework,
- 3 credit hours of public health management seminars, and
- 15 credit hours within an emphasis area.

Some required or emphasis area courses may require additional credit hours in prerequisite courses not already taken by the student. The

specific coursework for a student is established with the student's individualized program of study.

The emphasis in doctoral training goes beyond accumulating course credit. Completion of the coursework is the prelude to sitting for the qualifying examination. Successful passage of the qualifying examination allows the student to enter doctoral candidacy. A doctoral candidate must then successfully develop and present to the HMSS PhD Committee a preliminary dissertation proposal (PDP) that describes the dissertation committee, what the student wishes to accomplish with the dissertation, and an original and independent research project in the prescribed format. Once the PDP is approved by the HMSS PhD Committee, the student may schedule the proposal defense. Upon successful defense of the proposal, a student may then proceed to dissertation research.

Upon successful completion of the research, defense of the dissertation, and demonstration of the required competencies listed below, a student is awarded the PhD degree.

Coursework

Code	Title	Hours
CEPH Accreditation Course		
PHPH 523	Public Health in the United States ¹	3
Minimum Total Hours		3

¹ PHPH 523 fulfills the accreditation requirement that all graduates from the School of Public Health and Information Science receive foundational instruction in public health. The three (3) credit hours for PHPH 523 do not accrue toward the 51 credit hours required for Ph.D. degree completion. Students with a prior degree and/or coursework from a CEPH accredited school or program of public health may be relieved of this requirement, per approval of the Associate Dean for Academic Affairs.

Code	Title	Hours
Required Coursework		
Health Management Foundations		9
PHMS 700	Introduction to Health Services Research	
PHMS 715	Health Policy Research	
PHMS 708	Population Health and Health Disparities	
Theoretical Foundations		6
PHMS 720	Organizational Theory in Health Services Research	
PHMS 740	Microeconomic Theory	
Health Management Research Methods		18
SOC 618	Qualitative Research Methods	
PHST 650	Advanced Topics in Biostatistics	
PHMS 670	Statistical Data Management	
PHMS 671	Statistical Analysis for Population Health	
PHMS 645	Health Services Research Methods I	
PHMS 646	Health Services Research Methods II	
PHMS 725	Economic Evaluation in Health Care	
Seminars		3
PHMS 751	Seminar I in Public Health Management	
PHMS 752	Seminar II in Public Health Management	

PHMS 753 Seminar III in Public Health Management	
Specialization/Emphasis Area (see below)	15
Minimum Total Hours	51

HMSS PhD Seminars

A student in the PhD specialization in Health Management and Policy is required to complete at least three (3) credit hours in the HMSS PhD Seminar series (PHMS 751, PHMS 752, PHMS 753). These group courses are jointly taught by the faculty of the department and are designed to provide a collegial experience that provides an opportunity to integrate learning from other courses, discuss hot topics, brainstorm about research ideas, and acquire professional skills in scientific manuscript and grant writing, oral and poster presentations, grantsmanship, and peer review.

Emphasis Area

As a part of the approved program of study, a student is able to select 15 credit hours of elective coursework that is structured around a specific area within public health. For example, students could choose to do an emphasis area in long-term care policy, population health, global health, etc. Courses may be selected from those offered within the school, other schools or colleges within the university, or from sources outside the university with permission and acceptance of credit by the school and university.

Emphasis areas need to be submitted by each student by the end of the second semester in the Program. Because some courses are only offered every other year, the student and the faculty advisor must plan the emphasis area sequence as soon as reasonably possible.

All emphasis areas need to be first approved by a student's advisor and then presented to the HMSS PhD Committee for approval. The HMSS PhD Committee will review the chosen courses and confirm that they contribute to an overall expertise within the emphasis area designated by the student. The student must provide a written rationale for the choices of elective coursework in his or her emphasis area. These can be tweaked and changed while the student is in the program. However, these changes must also be approved by the HMSS PhD Committee.

Emphasis Area Examples

Code	Title	Hours
Organizational Systems		
SOC 750		3
LEAD 702	Applied Multiple Regression	3
SOC 675	Social Inequality & Stratification	3
PHEP 627	Survey Research Methods	3
SOC 740	Social Policy	3
Health Data Analytics		
PHMS 641	Data Mining I	3
PHST 620	Introduction to Statistical Computing	3
PHMS 644	Biomedical Foundations for Health Analytics	3
PHMS 638	Data Security & Electronic Health Records	3
PHMS 642	Data Mining II	3
Health Policy		
SOC 622	Survey Research and Design	3
SOC 710	Statistics II	3
SOC 715	Statistics III	3

PHPB 705	Policy to Advance Health Equity	3
PHMS 710	Advanced Health Policy and Analysis	3

Qualifying Examination

Upon completion of the required coursework (a minimum of 30 credit hours not including 15 credit hours of emphasis area coursework) and public health management seminars (three (3) credit hours total) for the PhD, the student is eligible to sit for the qualifying examination. The components of the qualifying exam focus on the subject matter drawn from foundation courses and health management research methods. The timing and eligibility for the qualifying exams are determined by the student's faculty advisor and the HMSS PhD Committee. Successful completion of the exam admits the student to doctoral candidacy. A student who does not successfully complete the exam may be required to take additional or remedial coursework and is allowed one opportunity to retake the exam. After admission into candidacy, the student will still be responsible for completing the additional 15 credit hours of required emphasis area coursework.

Dissertation

A dissertation is required of a candidate for the degree of Doctor of Philosophy in Public Health Sciences with a specialization in Health Management and Policy. It is to be a scholarly achievement in research and should demonstrate a thorough understanding of research techniques in health management and the ability to conduct independent research. All dissertations use a three-paper format.

Dissertation Committee

The dissertation shall be read by a reading committee, chaired by the student's faculty advisor, and appointed by the dean of the school upon the advice of HMSS PhD Committee. This committee shall consist of at least four members and must include one representative of an external department. The dissertation must be approved by the committee and the chair of the department.

The composition of the dissertation committee must be reviewed and approved by the HMSS PhD Committee. This is done as part of the preliminary dissertation proposal (PDP) process.

Preliminary Dissertation Proposal

The Preliminary Dissertation Proposal (PDP) process involves a student (1) forming the dissertation committee; (2) writing a preliminary dissertation proposal using the PDP format; (3) the dissertation chair will present the PDP to the HMSS PhD Committee; and (4) the HMSS PhD Committee will provide feedback and approve the PDP to move to the proposal defense stage. Students may not move to the proposal defense stage without HMSS PhD Committee approval of the PDP.

The PDP uses the AHRQ (NIH) research proposal format. This is the general outline students should follow when constructing a PDP.

Total page limit: ten pages, single-spaced, or twenty pages, double-spaced

Sections

- a. Coversheet and Student Letter (three pages, single-spaced, or six pages, double-spaced)
 - i. Project Title
 - ii. Student's Name
 - iii. List Chair and members on Dissertation Committee.
 - iv. Areas of knowledge – identify areas of knowledge (content and methods) necessary for successful completion of a dissertation.

Discuss how these have been met or will be met through courses, independent study, etc.

- v. Student letter – should discuss career goals, background, and interest in health services research, and the anticipated manner in which the proposed dissertation will contribute to career goals. List source of funding for research.
- b. Specific Aims (one page, single spaced, or two pages, double-spaced) – Also list specific hypotheses for each aim. If desired, the overall purpose of this line of investigation may be mentioned in order to indicate the long-term importance of the specific aim being sought through this study.
- c. Research Strategy (six pages, single spaced, or twelve pages, double-spaced) – Section III's format may be tailored to meet the needs of the specific study being proposed. It could be organized for the study as a whole, for each specific aim, or for each paper to be written. However, the following sub-headings usually apply (major methods should be referenced).
 - i. Significance – Explain the importance of the problem or critical barrier to progress in the field that the proposed project addresses. Explain how the proposed project will advance the field and improve scientific knowledge, technical capability, and/or clinical practice in one or more broad fields. Describe how the concepts, methods, technologies, treatments, services, or preventative interventions that drive this field will be changed if the proposed aims are achieved.
 - ii. Innovation – Explain how the application challenges and seeks to shift current research or clinical practice paradigms. Describe any novel theoretical concepts, approaches, or methodologies, instrumentation or interventions to be developed or used, and any advantage over existing methodologies, instrumentation, or interventions. Explain any refinements, improvements, or new applications of theoretical concepts, approaches or methodologies, instrumentation, or interventions.
 - iii. Approach - Describe the overall strategy, methodology, and analyses to be used to accomplish the specific aims of the project. Include how the data will be collected, analyzed, and interpreted as well as any resource sharing plans as appropriate. Discuss the potential difficulties and limitations of the proposed procedures and alternative approaches to achieve the aims. As part of this section, provide a tentative sequence or timetable for the project.

Use this section to provide an account of the student's or committee's preliminary studies pertinent to the proposed study, summarizing methods and preliminary findings. Relevant publications or manuscripts may be attached in the Appendix. If there are no preliminary studies, please indicate so in a sentence.

- d. Protection of Human Subjects (louisville.edu/research/humansubjects)
- e. AHRQ Priority Populations
- f. References Cited
- g. Appendix
 - i. Survey instrument, if applicable

Dissertation Proposal

Once approved by the HMSS PhD Committee, the candidate will submit a written dissertation proposal to all members of the dissertation committee. The candidate is then orally examined on the dissertation

proposal at a time scheduled by the candidate in consultation with the committee chair and full dissertation committee.

Dissertation Preparation

The dissertation is to be prepared in format according to the guidelines of the Graduate School (<http://louisville.edu/graduate/current-students/thesis-dissertation-information/thesis-dissertation-guidelines-1/>). HMSS PhD students do a three-paper dissertation.

Three-Paper Dissertation Guidelines

Students will write a three-paper dissertation. The dissertation will include a brief introduction to the three papers and how they fit together (roughly ten pages). The research questions submitted and approved within the dissertation proposal will define the subject matter for each of the papers in the dissertation.

Prior to the dissertation defense, at least one of the three papers in the dissertation must be submitted for review to a reputable peer-reviewed journal that is agreed upon by the doctoral candidate's dissertation committee. The remaining two papers must be of high enough quality that the dissertation committee feels that they can be submitted to a reputable journal, although they do not need to be submitted prior to the dissertation defense.

Each paper must report on original scholarship and address the research questions in the dissertation proposal. One of the papers may consist of a literature synthesis which leads to specification of a conceptual framework for addressing a research question or questions.

Prior to the dissertation defense, the student must specify a target peer-reviewed journal for each and format each according to the chosen journal's formatting rules. Each paper is expected to conform to the length requirements for the chosen peer-reviewed journal (typically 25-30 pages in length). Co-authors for each paper should be acknowledged in a "Statement of Contributors" but not included as authors in the dissertation itself. They can be listed as authors when the papers are submitted for publication, but not as authors in the dissertation itself.

The following information is in the current guidelines, please review and advise if you have additional questions or concerns. The information is as follows:

Published Work

With the approval of your adviser and your thesis or dissertation committee, you may include part or all of the content of manuscripts published in or accepted for publication by scholarly journals and proceedings as chapters in your thesis or dissertation. If you choose this option, you must:

- a. Be a primary author—i.e., lead author—of the articles (i.e., a person principally involved in the data selection or collection, the data analysis or interpretation, and the writing of the papers).
- b. Obtain the needed copyright clearance from the publisher—i.e., a letter granting permission to include the journal article in your thesis or dissertation.
- c. Include a proper citation to the work, either a footnote or a citation in the reference section of the thesis or dissertation.
- d. Format the work so that it conforms to the requirements as specified in "Guidelines for the Preparation and Processing of Theses and Dissertations" (The Guidelines). In other words, the journal publication cannot simply be pasted into the thesis or dissertation in its published format.

The content and format of each paper included may be similar to or the same as what you submit to the journal/proceedings, except the content must comply with the formatting requirements as outlined in The Guidelines. The bibliography or reference section of each article must become part of the final Reference Section in the thesis and dissertation, as stipulated in The Guidelines. There should be only one abstract and one list of acknowledgments for the thesis or dissertation.

If the publisher grants permission for the publication to be used, the publisher will give instructions on how the approval should be documented in the dissertation. The publisher's official notice of approval must be formatted accordingly and added as an Appendix. Permission to use previously published material in a thesis or dissertation doesn't necessarily give the student permission to sell that material. The student may need to put a restriction on the sale and availability of his/her work according to the publisher's guidelines.

Dissertation Approval

The dissertation is to be submitted in completed form to the chair of the department at least thirty days before the end of the term in which the candidate expects to be graduated, and the candidate is not eligible for final defense until the dissertation has been accepted by the committee and chair.

The doctoral candidate will prepare a dissertation document that will include:

- a. An introduction of at least ten pages that summarizes the three papers.
- b. The papers themselves (refer to Published Work above).
- c. A synthesis section at the end that addresses the implications for practice and research, in non-technical terms, to the extent not addressed in the separate papers.
- d. Any additional material, as appendices, that would not usually be part of a journal article (e.g. a survey instrument) but which the dissertation committee deems relevant.
- e. Statement of contributions: a statement specifying his/her role and those of others in selecting study questions, designing analyses, identifying appropriate methods, analyzing the data, and writing and reviewing the papers. This statement will be signed by each contributor named.
- f. Dissemination plan: this will specify the target peer-reviewed journal for each of the three papers. For each paper that has not been submitted for publication, the student is required to obtain a signature from a faculty member with experience publishing or reviewing for the target journal (or similar ones). The faculty member will sign a statement to the effect that in his/her opinion, the paper is potentially publishable in the journal selected (these signatures will be required by the conclusion of the dissertation defense).

The oral defense is scheduled by the dissertation committee and doctoral candidate. The time and place for the defense is published to the general academic community, members of which are free to attend the defense. The dissertation is approved by a majority vote of the committee and the concurrence of the department chair.

Evaluation by Dissertation Committee

Dissertations will be evaluated by the dissertation committee using the following criteria:

Extent of the student's contribution: The committee should be persuaded that the student played the primary role in the

formulation and write-up of the research for all three papers. For example, if a faculty member provided the data, selected the methodology and directed the analyses, the student's role may not meet the required standard of independence.

Eventual publication of the three papers: The committee should only approve the dissertation if it feels that the three papers are potentially publishable, that is, ready for submission to peer-reviewed journals. Faculty endorsement of the Dissemination Plan will be relevant for this.

Papers published before the final defense are acceptable as described below: In some cases, one or more of the papers may have already been accepted or published by a peer-reviewed journal at the time of the defense. While this satisfies the publication criterion, the committee will still need to evaluate the paper(s) in light of the other criteria, and the paper(s) will need to be reformatted to meet the Graduate School requirements.

The HMSS PhD Committee will allow one paper to be included in the three paper dissertation that was developed while the student was in the PhD program, prior to dissertation proposal defense. The paper published prior to the dissertation proposal defense can only be considered if approved by the chair of the student's PhD committee and the HMSS PhD Committee.

Dissertation Submission

The following steps must be taken to submit the final copy of the dissertation electronically after oral defense and approval of the committee:

- a. Final document must be converted to a PDF (following the guidelines as noted above) and sent to the Graduate School and the department's administrative assistant.
- b. Instructions will be provided from the Graduate School regarding submission of the final dissertation through the University of Louisville Institutional repository, ThinkIR.
- c. The signature page within the electronic version must have the names of your committee members typed under the signature line; the signatures cannot be scanned into the document.
- d. Submit a signed signature page, digital/electronic signature page (<http://louisville.edu/graduate/current-students/thesis-dissertation-information/>) can be found on the the Graduate School web-site and the department administrative assistant.

For questions regarding preparation and submission of dissertations to the Graduate School, contact the Coordinator of Academic Services.

Public Health Sciences: Specialization in Health Promotion and Behavioral Sciences (PhD)

Doctor of Philosophy in Public Health Sciences, specialization in Health Promotion and Behavioral Sciences

Unit: School of Public Health and Information Sciences (<http://louisville.edu/sphis/>) (GH)

Department: Health Promotion and Behavioral Sciences (<http://louisville.edu/sphis/departments/health-promotion-behavioral-sciences/>)

Program Website (<http://louisville.edu/sphis/departments/hpbs/academics/>)

Academic Plan Code(s): PHSCPHDHP

Program Information

The PhD in Public Health Sciences, specialization in Health Promotion and Behavioral Sciences program at the University of Louisville, School of Public Health and Information Sciences is designed to prepare students for careers in higher education, upper level management positions in government and private nonprofit health agencies, and research positions with universities, government agencies and in the private sector. In addition to gaining a solid foundation in the theories and concepts of the discipline, students also achieve competency as independent researchers.

Students interested in health equity and social justice will benefit from the multidisciplinary background of our faculty. In our department, students are uniquely trained to approach complex social and public health issues using theories, methods, and strategies from across diverse disciplines. In addition, our faculty possess a breadth of expertise in various designs, methods, approaches, and subject matter areas to support students in their academic and professional pursuits. Located in the heart of a metropolitan area, our hands-on training strengthens the science and practice of public health, equipping our graduates to be leaders in a variety of settings.

Please refer to the Student Handbook for additional information.

Competencies

By the end of the program, the successful student will be able to:

- *Demonstrate a social justice perspective in considering and being sensitive to issues that influence public health, health policy, and the delivery of health care;*
- *Appraise the role of structural, social, political, behavioral, and psychological determinants in producing and maintaining population health and health inequities;*
- *Apply and critically evaluate multi-level theoretical models of health and health behavior to understanding and intervening in societal, structural, community and organizational influences on public health issues;*
- *Demonstrate expertise in selecting and applying rigorous and ethical research methods to conduct research in the student's cognate area;*
- *Implement pedagogical techniques, with a focus on critical pedagogy, in the process of teaching and learning;*
- *Communicate effectively and clearly both orally and in writing, and present public health issues and research findings in their area of expertise to a variety of audiences; and*
- *Translate evidence into actionable information to develop and advocate for equitable policies and practices.*

It is expected that prior to graduation, students in the program have demonstrated these competencies by completing the curriculum, passing the qualifying exam, successfully defending the dissertation, and participating in collaborative research and service activities.

Curriculum

The typical progression through the health promotion and behavioral science curriculum is:

- Required and elective coursework of 48 credit hours (years one and two)
- Qualifying examination (year three)
- Candidacy

- Dissertation research and preparation (within four years of entering candidacy)
- Oral examination / dissertation defense

Faculty Advisor

The department will assign an academic advisor for each doctoral student upon admission. Upon matriculation in the program, each student will meet with his or her assigned advisor and develop a program of study, which will include courses in public health theory and principles, research design and statistics as well as selected cognate courses. The program of study will identify a set of courses for the development of competencies in areas of public health knowledge that are relevant to the student's area of interest. The program of study may be modified as the student's needs change or course availability is altered.

Admission Requirements

Applicants should have a minimum GPA of 3.0 on a 4.0 scale and, in most cases, should have completed a master's or other graduate degree related to the theme of the doctoral program. Applicants who have a master's degree in a different discipline may be admitted with the stipulation that they complete foundational coursework during their enrollment for the doctoral degree. This coursework is in addition to the outlined curriculum, and does not count towards the credit hours required for the program. Additional coursework is negotiated with the student's academic advisor on a case-by-case basis.

The application, curriculum vitae, personal statement, application fee, three professional or academic letters of recommendation, official transcripts of all college work, and academic writing sample must be submitted through the UofL Graduate School (<https://louisville.edu/graduate/futurestudents/apply-materials/application/>).

The personal statement should be a one- to two-page essay and address the following:

- Discuss your academic and personal background. Explain what attracts you to the field of public health and health promotion.
- Describe your experiences with research, including your role in conducting research and designing research products (i.e., papers, presentations, reports, etc.).
- Discuss your research interests and explain the role health equity and social justice play in framing your research. Describe the type of research you would like to pursue if admitted into the program. Describe any other personal or professional experiences you believe are relevant.
- Explain your long-term career goals and how a PhD in public health sciences will help you reach these goals.

International students for whom English is not their primary language must show English language proficiency by one of the following:

- Test of English as a Foreign Language (TOEFL) score of at least 79 (internet).
- Official IELTS score of at least 6.5 overall band score from the academic module exam.
- Official Duolingo overall score of 105.
- Demonstrate an accredited degree awarded by an acceptable institution which uses English as the primary language of instruction.

- ECFMG (Educational Commission for Foreign Medical Graduates) certification.

For specific information about the degree specialization or the application process, students should contact the PhD Program Committee Chair, Dr. Ryan Combs, at ryan.combs@louisville.edu or (502) 852-1995 or the Department Chair, Dr. Monica Wendel, at monica.wendel@louisville.edu or (502) 852-2305.

Application Deadline

Fall semester – March 1 (International applicants); March 31 (Domestic applicants).

Applications received by December 31 will receive first consideration for admission and funding. Those received after December 31 will be considered based on availability of space in the program.

Spring semester - Applications are not accepted.

Summer semester – Applications are not accepted.

Program Requirements

Curriculum

Students with a master of public health (MPH) and those with master's degrees from other disciplines may be considered for admittance to the PhD program. An MPH degree from a CEPH-accredited school or program of public health verifies assessment of the required 12 Foundational Public Health Knowledge (FPHK) Competencies for the PhD. Students with a master of public health from a non-CEPH-accredited school or program of public health, if admitted, will be required to take PPHP 523 to verify assessment of the FPHK competencies. Students entering from other disciplines may be required to complete one or more of the four MPH core courses for leveling purposes; PPHP 523 will be required if all four MPH core courses are not taken.

The PhD curriculum consists of a minimum of 48 credit hours of course work and a dissertation.

Coursework

Code	Title	Hours
Foundational Requirements		17
PHPB 701	Theoretical Basis of Health Promotion	
PHPB 703	Health Promotion Research Methods and Design	
PHPB 705	Policy to Advance Health Equity	
PHPB 709	Philosophy of Science & Evaluation Theory	
PHPB 710	Social Justice and Health Equity Research	
PHPB 750	Doctoral Seminar in Health Promotion & Behavioral Sciences ¹	
Methods & Analysis		15
PHST 501	Introduction to Biostatistics for Health Sciences II	
PHPB 711	Qualitative Research Methods in Public Health	
Additional courses in research design, instrumentation, and analysis (9 credit hours)		
Teaching Seminar & Lab		1-3
PHPB 730	Teaching Seminar in Health Promotion and Behavioral Sciences (required for all PhD students)	

PHPB 731	Teaching Lab in Health Promotion and Behavioral Sciences (optional for students wishing to gain teaching experience)	
Cognate Area of Study		15
Coursework determined by student and faculty advisor.		
Dissertation		as needed
Minimum Total Hours		48

¹ Students are required to register for two semesters PHPB 750 Doctoral Seminar in Health Promotion & Behavioral Sciences at one (1) credit each, but must attend at least four semesters while pursuing doctoral coursework. The full course is completed over four semesters, with students producing a complete professional portfolio of materials annually.

Qualifying Examination

Upon completion of all formal course work, students will take a written qualifying exam to demonstrate their ability to synthesize and apply concepts from those courses. Results will be given to students within six weeks of completion of the exam. The exam will be evaluated on a pass/fail basis; students who do not pass the exam on their first attempt will be given time to prepare to sit for the exam one additional time. The retake of the exam must be attempted within 6 months at a regularly scheduled exam date (February, July, or October) following the first attempt at the discretion of the specialization and in consultation with the student. If a student fails to pass on the second attempt, the student will be dropped from the program. Once the qualifying exam is successfully completed, students will be admitted to candidacy for the doctoral degree.

See Student Handbook for additional information.

Dissertation

A dissertation, based on original research conducted by the student, is required of a candidate for the degree of Doctor of Philosophy in Public Health Sciences with a specialization in Health Promotion and Behavioral Sciences. The dissertation is to be a scholarly achievement that demonstrates the student's ability to conduct independent research and a thorough understanding of research principles, concepts, and techniques in health promotion. The dissertation must follow the guidelines of the Graduate School (<http://louisville.edu/graduate/current-students/thesis-dissertation-information/>).

See Student Handbook for additional information.

Dissertation Committee

The student's dissertation research will be guided by, and the final product approved by, a Dissertation Committee. The Chair of the Committee, who must come from within the department, will be appointed by the Dean of the School of Public Health and Information Sciences upon the advice of the Chair of the Department of Health Promotion and Behavioral Sciences.

The Dissertation Committee shall consist of at least four members to a maximum of six members. The Chair of the Committee and at least one other committee member must be from the department. At least one of the additional members must be from outside of the department. Students are encouraged to meet with their committee chair regarding prospective committee members who will mentor them throughout this process. A committee member must have a doctoral

degree, be credentialed to teach graduate-level courses relevant to the degree, and have recent involvement in research, scholarship, or creative activity within the previous five years. The Dean of Academic Affairs at SPHIS must approve the members to serve on the committee. The Committee will subsequently be approved by the School of Public Health and Information Sciences.

Dissertation Proposal

The student will work with the Dissertation Committee and especially with the Chair throughout the process of preparing their Dissertation Proposal. The student will schedule meetings to present their dissertation proposal for approval once it has been reviewed by members of the committee. The final oral defense of the dissertation must be completed within four years of entering candidacy after passing the Qualifying Exam.

Dissertation Defense

Once the student has completed work on the dissertation, the student will schedule a date with his/her Dissertation Committee for the final oral examination during which the student will defend the dissertation. The dissertation must be approved by the committee and the Chair of the Department by majority vote before it can be submitted to the Graduate School. The defense is a public event to which members of the University community will be invited as well as those the student worked with on the project.

Dissertation Preparation

The dissertation copy must follow the guidelines of the Graduate School (<http://louisville.edu/graduate/current-students/thesis-dissertation-information/>).

Dissertation Submission

The following steps must be taken to submit the final copy of the dissertation electronically after oral defense and approval of the committee:

- Final document must be converted to a PDF (following the guidelines as noted above) and sent to the Graduate School and the department's administrative assistant.
- The document is submitted as advised by the Graduate School through the ThinkIR repository. The directions on submission will be provided upon review of the dissertation by the Graduate School.
- The signature page within the electronic version must have the names of your committee members typed under the signature line; the signatures cannot be scanned into the document.
- Submit a signed signature page, digital/electronic signature page (<http://louisville.edu/graduate/current-students/thesis-dissertation-information/>) can be found on the Graduate School web-site.

Public Health Training (CERT)

Graduate Certificate in Public Health Training

Unit: School of Public Health and Information Sciences (<https://louisville.edu/sphis/>) GH

Program Website (<https://louisville.edu/sphis/academics/public-health-training-certificate/>)

Academic Plan Code(s): PHTRCGRO

This program is completed entirely online.

Program Information

The Graduate Certificate in Public Health Training provides individuals with the skills required for a career in a public health setting, integrating the four core areas of public health with practical applications for public health practice and preparedness. The 12 credit curriculum is affiliated with the MPH degree and consists of the four core courses that are required of all MPH graduates. Students will learn the foundational theories and methods of epidemiology, biostatistics, health behavior, and health policy.

The Certificate also offers working public health professionals a flexible and convenient option for advancing their foundational public health knowledge, providing this knowledge to those professionals who may not be ready to fully commit to a traditional Master of Public Health (MPH) degree.

Those interested in the possibility of pursuing the Masters of Public Health may use this program as a stepping stone towards completion of the MPH degree.

Admission Requirements

Admission Requirements

Applicants must have completed a baccalaureate degree from an accredited institution with a minimum of 2.75 GPA on a 4.0 scale

The application requirements for programs at the University of Louisville are submitted to the Graduate School and include:

- Graduate application (<http://louisville.edu/graduate/apply/>) submitted to the Graduate School
- Official transcripts indicating conferral of a bachelor's degree
- Curriculum vitae
- A minimum of two letters of recommendation related to the applicant's academic or professional history
- Application fee

Application Deadline

Applications are accepted for the Fall and Spring semester. There are no Summer admissions. There is no formal deadline.

Information contact

Bryan Mathis (bryan.mathis@louisville.edu), Program Coordinator Senior, (502) 852-6263.

Certificate Requirements

Curriculum

12 credit hours of required coursework

Code	Title	Hours
PHST 500	Introduction to Biostatistics for Health Sciences I (Offered Fall semesters)	3
PHMS 501	Introduction to Public Health Practice and Administration (Offered Fall semesters)	3
PHPB 501	Introduction to Public Health Behavior (Offered Spring semesters)	3
PHEP 501	Introduction to Epidemiology (Offered Spring semesters)	3

Minimum Total Hours

12

If a student chooses to pursue the Master of Public Health (MPH) degree at any time after enrolling or completing the Certificate program, then all coursework completed within the preceding three years with a grade of B or better may be applied towards the coursework for the MPH degree.

Public History (CERT)

Graduate Certificate in Public History

Unit: College of Arts and Sciences (<https://louisville.edu/artsandsciences/>) (GA)

Department: History (<http://louisville.edu/history/>)

Program Webpage (<http://louisville.edu/history/graduate-studies/graduate-certificate-in-public-history/>)

Academic Plan Code(s): PHISCHI

Program Information

The graduate certificate in Public History is a specialized program of study that trains students for careers in museums, archives, historical interpretation, and historic preservation. Students may pursue the certificate either in combination with a Master of Arts in History (or a closely related field) or as an independent credential.

Students enrolled in the program take seminars in history and electives in history and related fields. All students are required to complete an internship at a historical institution.

Admission Requirements

Students seeking the certificate as a stand-alone program should apply through the Graduate School (<http://louisville.edu/graduate/>). Create an account. When asked to choose a program, select "Graduate - non-degree." On the next page, select "College of Arts and Sciences," then "Public History (CHI)."

The following materials are required for the certificate program:

- Two letters of recommendation
- Undergraduate transcripts
- GRE scores
- Personal statement of interest in public history (500 words)
- Application fee

History MA students who wish to enroll in the certificate program must complete the online application (see link above) and submit:

- A letter of recommendation from a University of Louisville faculty member
- A personal statement of interest in public history.

All materials from applications for the MA program will also be considered.

Program Requirements

Code	Title	Hours
HIST 597	Introduction to Public History	3
HIST 608	Practicum in Public History (Internship)	3
Two 600-level non-public history courses in the Department of History		6
Two public history electives at the 500 level or above		6
Minimum Total Hours		18

Students in the MA program in History may apply up to six (6) credit hours from the degree program toward the Public History certificate.

Sample of public history electives:

- HIST 607 Oral History
- HIST 610 Introduction to Historic Preservation
- ARTH 647 Introduction to Critical and Curatorial Studies I and ARTH 648 Critical and Curatorial Studies II
- PADM 609 Nonprofit Management

Real Estate Development (CERT)

Graduate Certificate in Real Estate Development

Unit: College of Arts and Sciences (<https://louisville.edu/artsandsciences/>) (GA)

Department: Urban and Public Affairs (<https://louisville.edu/upa/>)

Program Webpage (<http://louisville.edu/upa/programs/gcred/>)

Academic Plan Code(s): RED_CRE

Program Information

The Department of Urban and Public Affairs offers an twelve (12) credit hour Graduate Certificate in Real Estate Development designed to equip graduates with the skills needed to make better real estate decisions with respect to investment considerations and site analysis and planning. The program will be particularly attractive to Urban Planning students desiring to work in the private sector; however, the program will also be appealing to students enrolled in other graduate programs at the university or who wish to complete the certificate on a stand-alone basis.

The program may be completed in conjunction with the Master of Urban Planning (MUP) program without the need to take any additional coursework beyond what is required for the MUP program. For MUP students, the certificate courses satisfy the requirements for the specialization in Community Development.

Admission Requirements

Applicants must have a bachelor's degree (any major is acceptable), and provide a completed graduate admissions application (<https://louisville.edu/graduate/futurestudents/apply-materials/application/>), transcripts of all undergraduate/graduate course work and a personal statement. Please provide names of two references in the personal statement.

Admission is competitive and generally requires a minimum undergraduate GPA of 3.00. All applicants for whom English is a second language must also submit official TOEFL scores of 79 or higher on the internet-based test, 213 or higher on the computer-based test. English proficiency can also be met by submitting official IELTS scores of at least 6.5 overall band score from the academic module exam or official Duolingo overall score of 105. Students holding a bachelor's or advanced degree from an accredited institution in the United States may be exempt from this requirement.

Program Requirements

The program requires twelve (12) credit hours, and may be completed in one semester as a full-time student. It may be completed in-person in up to four years as a part-time student. Courses may be waived by

the Program Coordinator based on previous study; however, substitute course work will be required.

The following courses are required:

Code	Title	Hours
Required Courses:		
PLAN 614	Real Estate Market Analysis	3
PLAN 631	Real Estate Principles	3
Electives (Choose 2 from the list below):		
PLAN 603	Urban Economics	6
PLAN 605	Land Use & Planning Law	
PLAN 636	Site Planning	
PLAN 607	Land Use Planning	
PADM 611	Financial Management of Nonprofits	
Minimum Total Hours		12

Although the program does not require an internship, students who are also in the MUP program may wish to complete the required planning internship by working in a real estate development firm.

The Graduate Certificate in Real Estate Development program prepares students to meet the requirements for certification and/or licensure. If you plan to pursue professional licensure or certification you should first determine your state's criteria for examination and licensure to see how/if our program meets those requirements prior to enrollment. We recommend that you also contact your state's licensing board directly to verify that the requirements have not changed recently and to answer any questions especially those regarding additional requirements beyond the degree.

More information about certification or licensure is available at the following website: <https://louisville.edu/oapa/licensure-information> (<https://louisville.edu/oapa/licensure-information/>) (you may search by school or by the name of the program then click on 'View Details' to display the information).

For programs with an online option, more information about certification or licensure is available here: <https://louisville.edu/online/About-Us?tab=disclosures> (<https://louisville.edu/online/About-Us/?tab=disclosures>).

School Social Work (RANK1)

Rank 1 Program in School Social Work

Unit: College of Education and Human Development (<https://louisville.edu/education/>) (GE)

Department: Special Education, Early Childhood, and Prevention Science (<https://louisville.edu/education/departments/sped/>)

Program Website (<https://louisville.edu/education/degrees/rank/>)

Academic Plan Code(s): SW_ _RK1

Program Information

Rank 1 programs are not degree programs.

The Rank 1 program in School Social Work includes the School Social Work Specialization. It is designed for the Advanced Practitioner P-12.

Rank 1 programs are planned graduate level programs designed for Kentucky teachers seeking rank change for salary purposes. They are recognized only in the state of Kentucky. By state regulation, Rank 1

status is sixty (60) credit hours of approved graduate credit including a master's degree.

Admission Requirements

Students in this Rank-1 program are required to satisfy/provide the following:

- Complete graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) to the Graduate School
- Signed Professional Code of Ethics/Technology User Agreement
- Completion of Official Program along with School Social Work specialization program sheet.

Students may apply to the program by first going to the Graduate School (<http://graduate.louisville.edu/sigs/apply/>) website. Admission requirements include the following credentials:

- Teaching certificate
- TOEFL/IELTS/Duolingo (Students holding a baccalaureate or advanced degree from an accredited institution in the U.S. are exempt from this requirement.)
- There may be additional admission requirements, depending on the Rank 1 program that you select. Please contact the Teaching and Learning Department for specific information.
- Official transcripts with a GPA of 2.75 in the Bachelor's degree and a GPA of 3.0 in the Master's degree.
- Applicants who have attended a college or university outside of the United States are also required to submit an evaluation of their transcript through either WES (World Education Services) (<http://wes.org/>) or ECE (Educational Credential Evaluators) (<http://ece.org/>). Please note that transcript evaluations can sometimes take several weeks.

Please have transcripts sent to:

**Graduate School
Graduate Admissions**
University of Louisville
Louisville, KY 40292

If transcripts are sent electronically, please have them sent to gradadm@louisville.edu.

Contact information:

Kent School of Social Work
Dr. Shawnise Miller
(502) 852-3600

CEHD Graduate Student Services
(502) 852-2628

Certification Requirements

Rank 1 Program in School Social Work

Code	Title	Hours
Inquiry (Critical Thinker)		
MSSW 668	Program Evaluation in Social Work	3
MSSW 669	Advanced Research Practice II	3
Leadership		
Select one of the following:		3
EDSP 652	Academic and Behavior Response to Intervention	

ECPY 740	Psychometrics and Affective Instrument Development	
LEAD 575	Instructional Technology	
LEAD 607	Principles of Educational Leadership	
Diversity		
Select one of the following: ¹		
EDSP 545	Exceptional Children in the Regular Classroom	3
or EDSP 540	Introduction to Exceptional Children	
Action (Problem Solver)		
EDSP 669	Single Case Research Methods and Designs	3
Area of Emphasis		
Select at least 15 credit hours:		15
MSSW 630	School Social Work: Policy and Practice	
EDSP 644	Applied Behavior Analysis ²	
MSSW 615	Mental Health	
MSSW 636	Death & Grief	
ECPY 605	Human Development	
ECPY 607	Learning Theory and Human Growth and Development	
Electives		
Select 3 credit hours:		3
ECPY 624	Foundations of School Counseling	
ECPY 639	Prevention & Treatment of Substance Abuse	
ECPY 732	Counselor Education Seminar: Promoting Social Change-Leadership	
MSSW 662	Substance Use and Substance Use Disorders	
MSSW 642	Psychopathology	
MSSW 657	Group Methods	
MSSW 660	Motivation and Change: The Process of Change and Strategies to Elicit Intrinsic Motivation.	
EDSP 510	Legal Issues in Special Education	
EDSP 671	Behavior Intervention	
EDSP 673	Research Seminar in Autism Spectrum Disorders	
Minimum Total Hours		33

Exit Requirements

Hallmark Assessment Task for EDSP 669 or equivalent project that demonstrates proficiency in the Advanced-Level Kentucky Teacher Standards.

Course project must address all of the Advanced-Level Kentucky Teacher Standards. Successful completion of portfolio.

Additional Requirements

A minimum of fifteen (15) credit hours of 600-level courses is required. Up to fifteen (15) credit hours of graduate credit may be transferred to the Rank 1 program, as long as the student will have completed sixty (60) credit hours of approved graduate credit.

Including a master's degree at the end of the Rank 1 program: transfer credit must be officially accepted by the advisor and final acceptance is dependent upon receipt of official transcripts.

In the Rank 1 program at least fifteen (15) credit hours of new graduate coursework must be taken at the University of Louisville.

To complete the program, students must have a minimum 3.0 cumulative grade point average. No credit shall be accepted for carrying a grade lower than a B-minus.

Some courses are required for students completing the School Social Work specialization and Rank 1 program.

This degree program sheet must be accompanied by a signed School Social Work specialization program sheet as well.

¹ One of these courses in the Diversity section must be completed for School Social Work Specialization

² Courses are required for students completing the School Social Work Specialization and Rank I program.

Secondary Education (RANK1)

Rank I Program in Secondary Education

Unit: College of Education and Human Development (<https://louisville.edu/education/>) (GE)

Department: Elementary, Middle and Secondary Education (<https://louisville.edu/education/departments/mise/>)

Program Webpage (<https://louisville.edu/education/degrees/rank/>)

Academic Plan Code(s): SE_RK1SAP

Program Information

Rank I programs are not degree programs.

Rank I programs are planned, graduate-level programs designed for Kentucky teachers seeking rank change for salary purposes. They are recognized only in the state of Kentucky. By state regulation, Rank I status is 60 credit hours of approved graduate credit including a master's degree.

Teachers who complete a Rank I program may obtain a rank change for salary purposes in Kentucky. Through a Rank I program, teachers may increase their depth of knowledge in their teaching areas or in additional areas of certification, as appropriate.

Admissions Requirements

Students may apply to the program by first going to the Graduate School web site and completing the graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>).

Admission requirements include the following credentials:

- Official transcripts with a GPA of 2.75 in the Bachelor's degree and a GPA of 3.0 in the master's degree.
- Applicants who have attended a college or university outside of the United States are also required to submit an evaluation of their transcript through either WES (World Education Services) (<http://wes.org/>) or ECE (Educational Credential Evaluators) (<http://ece.org/>). Please note that transcript evaluations can sometimes take several weeks.
- TOEFL/IELTS/Duolingo (Students holding a baccalaureate or advanced degree from an accredited institution in the U.S. are exempt from this requirement.)
- Teaching certificate in grades 8-12, P-12, or 5-12 and a master's degree/Rank II
- Signed Professional Code of Ethics/Technology User Agreement

Please have transcripts sent to:

Graduate School
Graduate Admissions
University of Louisville
Houchens Building, Suite 105
Louisville, KY 40292

If transcripts are sent electronically, please have them sent to the following email: gradadm@louisville.edu

Rank I Program in Secondary Education Advanced Practitioner

(For students who have earned a master's degree)

Code	Title	Hours
Inquiry		
Select one of the following:		3
EDAP 639	Education Research in P-12 Setting	
LEAD 601	Applied Statistics	
Advocacy		
Leadership (Professional Leader)		
Select one of the following:		3
EDAP 624	Curriculum Theory	
EDAP 637	Using Assessment to Improve Student Achievement	
EDAP 677	Developing Collaborative Groups: Facilitating, Coaching and Mentoring	
LEAD 636	Creating Equitable & Reliable Learning Environments	
Diversity		
Select one of the following:		3
EDAP 521	Teaching English Learners in the Classroom	
EDAP 638	Instructional Strategies for Diverse Learners	
EDAP 642	Literacy Learning and Cultural Differences	
EDTP 503	Developing Cross-Cultural Competence: Teaching Students from Diverse Backgrounds	
Area of Emphasis		12
Electives		6
Action (Problem Solver)		3
EDAP 681	Teacher Leadership in Practice	
Minimum Total Hours		30

Minimum of fifteen (15) credit hours in 600-level courses is required.

Up to fifteen (15) credit hours of graduate credit may be transferred to the Rank I program, as long as the student will have completed sixty (60) credit hours of approved graduate credit including a master's degree at the end of the Rank I program. Transfer credit must be officially accepted by the advisor and final acceptance is dependent upon receipt of official transcripts.

In the Rank I program, at least fifteen (15) credit hours of new graduate coursework must be taken at the University of Louisville.

To complete the program, students must have a minimum 3.0 cumulative grade point average. No grade lower than B-minus will be accepted.

Midpoint Requirement

Candidates are required to submit a mid-point performance assessment at the completion of fifteen (15) credit hours of coursework. The faculty advisor will assess the candidate's performance assessment, which must be at the exemplary or target level. The performance assessment must address content, classroom environment, teaching, assessing, and reflection, through an artifact (such as a video), to document professional learning.

Exit Requirements: Hallmark Assessment Task to be completed in EDAP 681 or equivalent project that demonstrates proficiency in the Kentucky Academic Standards.

Secondary Education (MAT)

Master of Arts in Teaching in Secondary Education (SE MAT)

Unit: College of Education and Human Development (<https://louisville.edu/education/>) (GE)

Department: Elementary, Middle, and Secondary Education (<https://louisville.edu/education/departments/mise/>)

Program Website (<https://louisville.edu/education/degrees/mat-se/>)

Academic Plan Code(s): By subject area, see below.

Program Information

The Master of Arts in Teaching degree in Secondary Education leads to certification in:

- Biology (SE_ _MATBIO)
- Chemistry (SE_ _MATCHE)
- Earth & Space Science (SE_ _MATESS)
- English (SE_ _MATENG)
- Mathematics (SE_ _MATMAT)
- Physics (SE_ _MATPHY)
- Social Studies Education (grades 8-12) (SE_ _MATSST)
- World Language Education (Spanish and French) (grades P-12) (SE_ _MATSPA and SE_ _MATFRE)

Admission Requirements

Candidates considering application to the MAT program should contact the Education Advising and Student Services office (teacher@louisville.edu) (<http://louisville.edu/cgi-bin/uofl.mail?teacher/>) prior to applying for admission.

Candidates who meet the following criteria may be eligible to apply to the Master of Arts in Teaching program:

- Graduate application (<http://louisville.edu/graduate/apply/>) to Graduate School. This should be completed three to four weeks prior to the application deadline.
- Praxis II (<http://louisville.edu/education/degrees/info/mat-mse-praxis-ii/>) Content Exam registration and/or scores
- Bachelor's Degree from Accredited College or University (<http://louisville.edu/education/degrees/info/bachelors/>) with major in content area with a minimum 2.75 Grade Point Average (official transcripts (<http://louisville.edu/education/degrees/info/transcripts/>) required)
- Prerequisite Course Requirements (<http://louisville.edu/education/degrees/info/mat-mse-prereq/>)
- C or higher in ENGL 102

- f. C or better in oral communication course
- g. TOEFL (<http://louisville.edu/education/degrees/info/toefl/>)/IELTS (<https://www.ielts.org/>)/Duolingo (<https://www.duolingo.com/>)
- h. Professional Writing Requirements (<https://louisville.edu/education/degrees/info/mat-mse-professional-statement/>)
- i. Three Letters of Recommendation (<http://louisville.edu/education/degrees/info/lor/>)
- j. Signed Professional Code of Ethics/Technology User Agreement/Statement of Understanding of Admissions Guidelines
- k. Acceptable interview

Admission is competitive. Candidates who meet minimum academic requirements are not guaranteed admission to the program.

Program Requirements

Code	Title	Hours
EDTP 631	Integrated Teaching and Learning I	3
EDTP 632	Integrated Teaching and Learning II	3
EDTP 633	Integrated Teaching and Learning III	3
<i>The above courses must be completed prior to the content methods course.</i>		
Content Methods, choose one from the following courses:		3
EDTP 622	High School English Methods	
EDTP 623	High School Mathematics Methods	
EDTP 624	High School Science Methods	
EDTP 625	High School Social Studies Methods	
EDTP 629	World Language Methods, P-12	
EDTP 619	Student Teaching: High School	9
or EDTP 618	Student Teaching: Middle and High School	
or EDTP 612	Student Teaching: P-12	
EDTP 503	Developing Cross-Cultural Competence: Teaching Students from Diverse Backgrounds ¹	3
EDTP 620	Reading and Writing Across the Curriculum ¹	3
Technology Course (select course appropriate for content certification area): ¹		3
EDTP 580	Digital Citizenship: Technology and Teaching	
EDTP 581	Technology Applications for Mathematics Teaching	
EDTP 582	Technology Applications for Science Teachers	
Minimum Total Hours		30

¹ Can be taken at any point in the program.

Mid-Point Assessment: Prior to Student Teaching

Satisfactory dispositions assessment; no lower than a "C" in content methods class; within three (3) credits of meeting content requirements; all course(s) passed; electronic documentation of 200 hours of diverse and approved field experiences; satisfactory performance on all Hallmark Assessment Tasks; Target performance or better on all rubrics."

Certification Assessment: After Student Teaching

Satisfactory dispositions assessment; passing scores on required PRAXIS exams; completion of degree requirements.

Degree Assessment

All certification and degree course work completed with a 3.0 cumulative GPA (no more than two "C's" in degree courses); 2.5 cumulative GPA in content course requirements; a "C" or higher in student teaching; satisfactory performance on all Hallmark Assessment Tasks; Target performance or better on all rubrics.

Degree Candidacy

Students not enrolled during the semester in which they intend to graduate must register for degree candidacy as outlined in the Graduate Catalog (<http://catalog.louisville.edu/archive/2023-2024/graduate/general-policies-procedures-requirements/>).

Praxis Disclaimer

Teacher certification requirements are subject to change. Before registering for certification test(s), please refer to the Education Professional Standards Board (EPSB) website at epsb.ky.gov (<http://www.epsb.ky.gov>) or ets.org/praxis/ky (<http://www.ets.org/praxis/ky/>) for current requirements.

The Master of Arts in Teaching in Secondary Education program and all related content areas prepares students to meet the requirements for certification and/or licensure. If you plan to pursue professional licensure or certification you should first determine your state's criteria for examination and licensure to see how/if our program meets those requirements prior to enrollment. We recommend that you also contact your state's licensing board directly to verify that the requirements have not changed recently and to answer any questions especially those regarding additional requirements beyond the degree.

More information about certification or licensure is available at the following website: <https://louisville.edu/oapa/licensure-information> (<https://louisville.edu/oapa/licensure-information/>) (you may search by school or by the name of the program then click on 'View Details' to display the information).

For programs with an online option, more information about certification or licensure is available here: <https://louisville.edu/online/About-Us?tab=disclosures> (<https://louisville.edu/online/About-Us/?tab=disclosures>)

Secondary Education - Alternative Certification 8-12 (MAT)

Master of Arts in Alternative Route to 8-12 Certification in Secondary Education

Unit: College of Education and Human Development (<https://louisville.edu/education/>) (GE)

Department: Elementary, Middle and Secondary Teacher Education (<http://louisville.edu/education/departments/mise/>)

Program Website (<https://louisville.edu/education/degrees/mat-ac/>)

Academic Plan Code(s): By subject area, see below.

Program Information

The Alternative Certification program is designed to assist the local school districts in meeting the demand for qualified teachers in high need content areas. The program provides candidates with an opportunity to pursue initial teacher certification while working as a full-time teacher on a temporary provisional certificate.

Employment is not required for initial acceptance to this program. However, candidates must be employed in a Kentucky-accredited school by the start of the school year in order to continue in the program. This program is a two-year, 30 credit hour program resulting in initial teacher certification and a Master of Arts in Teaching degree.

The Master of Arts in Teaching degree in Secondary Education leads to certification in:

- Biology (SE_ _MATBIO)
- Chemistry (SE_ _MATCHE)
- Earth & Space Science (SE_ _MATESS)
- English (SE_ _MATENG)
- Mathematics (SE_ _MATMAT)
- Physics (SE_ _MATPHY)
- Social Studies Education (grades 8-12) (SE_ _MATSST)
- World Language Education (Spanish and French, grades P-12) (SE_ _MATSPA and SE_ _MATFRE)

Admission Requirements

Candidates who meet the following criteria may be eligible to apply to the Master of Arts in Teaching, Alternative Certification program. Candidates considering application to the MAT program should contact the Education Advising and Student Services office (teacher@louisville.edu (<http://louisville.edu/cgi-bin/uofl.mail?teacher>)) prior to applying for admission. Admission is competitive. Candidates who meet minimum academic requirements are not guaranteed admission to the program.

- a. Complete graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>). This should be completed three to four weeks prior to the application deadline.
- b. Passing scores on Praxis II Content Exam(s) (<http://louisville.edu/education/degrees/info/mat-ac-praxis-ii/>)
- c. Bachelor's Degree (<http://louisville.edu/education/degrees/info/bachelors/>) in content area from Accredited College or University with a Minimum 2.75 Grade Point Average (official transcripts (<http://louisville.edu/education/degrees/info/transcripts/>) required)
- d. Prerequisite Course Requirements (<http://louisville.edu/education/degrees/info/mat-mse-prereq/>) – Applicants may apply to the program with up to six credit hours of content remaining to complete.
- e. C or better in ENGL 102 (or equivalent)
- f. C or better in oral communication course
- g. TOEFL (<http://louisville.edu/education/degrees/info/toefl/>)/IELTS (<https://www.ielts.org/>)/Duolingo (<https://www.duolingo.com/>)
- h. Professional Writing Requirements (<https://louisville.edu/education/degrees/info/mat-mse-professional-statement/>)
- i. Three Letters of Recommendation (<http://louisville.edu/education/degrees/info/lor/>)
- j. Experience working with diverse groups of children/adolescents
- k. Signed Professional Code of Ethics/Technology User Agreement/Statement of Understanding of Admissions Guidelines
- l. Acceptable interview

Program Requirements

Code	Title	Hours
EDTP 631	Integrated Teaching and Learning I	3
EDTP 632	Integrated Teaching and Learning II	3
Choose one methods course from the following:		3

EDTP 622	High School English Methods	
EDTP 623	High School Mathematics Methods	
EDTP 624	High School Science Methods	
EDTP 625	High School Social Studies Methods	
EDTP 629	World Language Methods, P-12	
EDTP 633	Integrated Teaching and Learning III	3
EDTP 627	Practicum for Alternative Certification Program (two semesters)	3
Mid-Point Assessment ¹		
EDTP 503	Developing Cross-Cultural Competence: Teaching Students from Diverse Backgrounds	3
Choose the technology course appropriate for your content certification area:		3
EDTP 580	Digital Citizenship: Technology and Teaching	
EDTP 581	Technology Applications for Mathematics Teaching	
EDTP 582	Technology Applications for Science Teachers	
EDTP 620	Reading and Writing Across the Curriculum	3
EDTP 678	Supporting the Second Year Alternative Certification Teacher I	1-3
EDTP 679	Supporting the Second Year Alternative Certification Teacher II	1-3
Minimum Total Hours		30

To maintain your Temporary Provisional Certificate, you MUST be enrolled in Alternative certification coursework.

¹ **Midpoint Assessment:** Completion of all courses listed above; satisfactory dispositions assessment; no lower than 2.0 GPA in content methods class(es); 2.0 or higher GPA in Practicum for Alternative Certification; 2.50 cumulative GPA in content course requirements; satisfactory performance on all Hallmark Assessment Tasks; Target performance or better on all rubrics.

Certification Assessment: Satisfactory dispositions assessment; passing scores on PRAXIS content and PLT exams; completion of degree requirements.

Degree Assessment: All program course work with 3.0 cumulative GPA (and no more than a total of two "C's" in degree courses); satisfactory performance on all Hallmark Assessment Tasks; Target performance or better on all rubrics.

Degree Candidacy: Students who are not enrolled during the semester in which they are graduating must register for degree candidacy as outlined in the Graduate Catalog, under the section called academic policies and requirements.

Praxis Disclaimer: Teacher certification requirements are subject to change. Before registering for the test(s), please refer to the Education Professional Standards Board (EPSB) website at www.epsb.ky.gov/ (<http://www.epsb.ky.gov/>) or [ets.org/praxis/ky/](http://www.ets.org/praxis/ky/) (<http://www.ets.org/praxis/ky/>) for current requirements.

The Master of Arts in Alternative Route to 8-12 Certification in Secondary Education program and all related content areas prepares students to meet the requirements for certification and/or licensure. If you plan to pursue professional licensure or certification you should first determine your state's criteria for examination and licensure to see how/if our program meets those requirements prior to enrollment. We recommend

that you also contact your state's licensing board directly to verify that the requirements have not changed recently and to answer any questions especially those regarding additional requirements beyond the degree.

More information about certification or licensure is available at the following website: <https://louisville.edu/oapa/licensure-information> (<https://louisville.edu/oapa/licensure-information/>) (you may search by school or by the name of the program then click on 'View Details' to display the information).

For programs with an online option, more information about certification or licensure is available here: <https://louisville.edu/online/About-Us?tab=disclosures> (<https://louisville.edu/online/About-Us/?tab=disclosures>)

Six Sigma (CERT)

Graduate Certificate in Six Sigma

Unit: Speed School of Engineering (<http://engineering.louisville.edu>) (GS)
Department: Engineering Management (<https://engineering.louisville.edu/academics/areasofstudy/engineering-management/>)
Academic Plan Code(s): SSBBCGRO

Program Information

This program is completed entirely online (<https://louisville.edu/online/programs/certificate-programs/online-graduate-certificate-in-six-sigma/>).

The Six Sigma graduate certificate delivers comprehensive knowledge and skills in process improvement. The program will prepare students and professionals to receive the Six Sigma Black Belt Certification from the Institute of Industrial and Systems Engineers (IISE) while taking nine Engineering Management credit hours that can be used towards a college degree.

Graduates of the certificate program will have the skills necessary to successfully lead Six Sigma projects in the manufacturing, healthcare, or service industry.

Admission Requirements

The admission standards for the Graduate Certificate program in Six Sigma Black Belt are as follows:

- a. All admission applications for the Graduate Certificate program shall include the following:
 - i. Completed graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) for the Graduate School,
 - ii. Application fee,
 - iii. Official transcript certifying at least a bachelor's degree. All transcripts not in English must be certified as authentic and translated verbatim into English.
- b. The minimum requirement for admission is the baccalaureate degree or its equivalent from an accredited institution.
- c. The successful applicant will typically have an undergraduate grade point average of 2.75 or above (on a 4.00 scale).

GMAT/GRE scores are not required.

Students enrolling in this graduate certificate program will need to have sufficient statistics (one semester of Introduction to Statistics) and math (one semester of Calculus I) for program admission. Students can enroll

in a Graduate Certificate program either as a non-degree seeking student or as a student simultaneously enrolled in a graduate degree program and this graduate certificate program. Students who wish to earn a graduate degree must meet all admission criteria for the degree program.

Certificate Requirements

Code	Title	Hours
EM 613	Operations Management	3
EM 661	Engineering Statistics II	3
EM 684	Applications for Process Improvement I	1.5
EM 685	Applications for Process Improvement II	1.5
Minimum Total Hours		9

The certificate program of study must be completed with a 3.00 GPA or better for all graduate courses used to satisfy certificate requirements.

Social Work (MSSW)



Master of Science in Social Work

Unit: Kent School of Social Work and Family Science (<https://louisville.edu/kent/>) (GK)
Department: Social Work (<http://louisville.edu/kent/>)
Program Website (<https://louisville.edu/kent/academics/master-of-science-in-social-work/>)
Academic Plan Code(s): SW_ _MSW30, SW_ _MSW300, SW_ _MSW60, SW_ _MSW600, or by concentration (See Concentrations Areas tab).

Program Information

This program has degree options that can be completed in a traditional classroom format or entirely online (<http://louisville.edu/online/programs/masters/master-of-science-in-social-work/>).

The mission of the Kent School of Social Work and Family Science MSSW program is to prepare students for ethical, evidence-informed, advanced social work practice with diverse, vulnerable, and marginalized individuals, families, groups, organizations, and communities. We take an anti-oppressive stance in educating students for careers as advanced social work practitioners who apply critical thinking skills and available evidence to inform practice that responds to complex social problems. Graduates will use these skills to actively pursue social change, advocating with and on behalf of vulnerable and marginalized client systems. The program will contribute to the mission of the University as a great place to learn by providing engaged service and outreach opportunities that improve the quality of life for local and global communities. The educational part of our mission is accomplished through theoretically and empirically driven approaches to pedagogy

in our on-campus and online instruction and transformative learning experiences.

Accreditation of the MSSW

The Master of Science in Social Work program is accredited by the Council on Social Work Education (CSWE).

MSSW Concentrations

Though it is not required for students to tailor their education while obtaining the MSSW degree, the MSSW program offers several concentration areas. In general, these concentrations require the student to take prescribed electives (please refer to the Concentration Areas tab) and may offer the opportunity to engage in a field placement tailored to their population of interest. Accepted students can declare their interest in pursuing a concentration through a designated form provided after admission.

Concentration options include:

Alcohol and Drug Counseling

Substance abuse is widely recognized as one of the top health problems in the USA and is attracting increasing attention and funding. However, there is an identified shortage of qualified addiction counselors—and students who prepare themselves for a career in chemical dependency can hope to gain immediate employment after graduation and possibly before. In this regard, students should be aware of professional certification, the Certified Alcohol and Drug Counselor (CADC) certification, that is valued by addiction treatment agencies with comparable respect and compensation as the Licensed Clinical Social Work (LCSW) qualification. Those who are interested in initiating their careers in a clinical substance abuse treatment setting can begin to fulfill specialized requirements of the CADC certification while completing normal requirements of the MSSW program. The Kent School's alcohol and drug concentration will:

- Satisfy many of the requirements of the CADC program,
- Teach specialized knowledge and skills, and
- Position students for employment and advancement in a broad array of specialized substance abuse roles.

Students can opt to pursue this concentration without submitting any additional documentation for consideration.

Gerontology

The nation's burgeoning aging population is increasing the demand for well-trained and competent social workers to respond to the needs of older adults and their families. The US Department of Labor reports that geriatric social work is one of the most rapidly growing occupations, with the promise of job security.

Students can opt to pursue this concentration without submitting any additional documentation for consideration.

Mental Health

The mental health concentration prepares students to enter into the mental health field by focusing on theoretical perspectives regarding the course and etiology of mental illness, diagnostic and assessment skills, evidence-based approaches, knowledge of mental health services, policies, and programs in the context of social work practice and values.

Students can opt to pursue this concentration without submitting any additional documentation for consideration.

Military Social Work

The military social work concentration is designed to prepare students to provide services to persons who have served or are serving in the military and their families. The concentration focuses on theoretical perspectives and policy implications concerning problems facing service members and their families as well as programs and application of interventions to ameliorate them. It is recognized that those seeking assistance from problems associated with military service may be seen in a myriad of programs both inside and outside the frame of the more traditionally recognized military service delivery systems.

Students can opt to pursue this concentration without submitting any additional documentation for consideration.

Psychosocial Oncology

In addition to The Kent School of Social Work offers the first concentration in psychosocial oncology in the nation. The high rate of cancer on local, national, and global levels and the potential shortage of oncology social workers are creating the demand for skilled practitioners. Responding to the growing need for social workers who are trained in cancer care, this program will prepare students with the knowledge and skills for meeting the psychosocial health needs of persons with cancer and their families. Students will learn how to apply skills such as assessment, counseling, palliative care, program planning, and evaluation in cancer care settings. Our students work in a variety of health settings in the full range of care for cancer patients. *This concentration requires an approved specialized practicum placement. Therefore, students must submit additional documentation and receive approval to pursue the concentration.*

School Social Work—available to KY residents only

MSSW students who want to practice social work in a school setting will complete the requirements to meet the criteria for the school social work certification in Kentucky. Students who select this concentration learn how to help children and families overcome barriers to learning through home intervention. Those who complete the specialization meet the Kentucky Council on Teacher Education's requirements for certification as a school social worker. *This concentration requires an approved specialized practicum placement. Therefore, applicants and students must submit additional documentation and receive approval to pursue the concentration.*

MSSW Dual Programs— *not available to exclusively online students*

The Kent School offers a joint program that combines the MSSW with a graduate certificate in Latin American and Latino Studies. Additionally, the Kent School offers joint degrees with the Couple and Family Therapy Program (MSSW/MS CFT), the Brandeis School of Law (MSSW/JD), the Department of Pan-African Studies (MSSW/MA), the Department of Women's, Gender and Sexuality Studies (MSSW/MA), the Department of Philosophy/Healthcare Ethics (MSSW/MA), and the Louisville Presbyterian Seminary (MSSW/MDiv).

Applications must be submitted independently to each academic unit/institution. In general, these programs require that the student take additional coursework, take the three MSSW electives in the other

program and potentially take a targeted specialized practicum that has the focus of and is approved by the other program.

For more complete descriptions of these programs, please refer to the prospective students link on the Kent School website (<http://www.louisville.edu/kent/>).

MSSW/Latin American and Latino Studies (LALS) Graduate Certificate

The dual MSSW/LALS graduate certificate allows students to gain a comprehensive understanding of the diverse cultures of Latin America and Latino communities in the United States. By combining the MSSW and LALS Graduate Certificate, students can develop a deeper appreciation for the social, cultural, and economic issues facing Latin American and Latino communities in the US. The MSSW/LALS dual program prepares graduates to become effective and compassionate social work practitioners with a deep understanding and appreciation for the complexities of the Latin American and Latino communities.

MSSW/MS in Couple and Family Therapy

The dual MSSW/MS CFT degree program allows students to complete coursework accredited to educate and prepare future licensed professionals in both Social Work and Couple and Family Therapy (<https://louisville.edu/kent/academics/couple-and-family-therapy/>) (formerly Marriage and Family Therapy). This dual degree program within the Kent School of Social Work and Family Science is dedicated to developing professionals in CFT (MFT) and master's-level Social Work to work with at-risk individuals & families within their community contexts.

MSSW/Master in Divinity

The dual MSSW/MDiv program recognizes the value of professional education in two interrelated fields and encourages students who have an interest in both ministry and social work to pursue these degrees simultaneously. A student may enter the dual degree program from social work or theology.

MSSW/Juris Doctor

The dual MSSW/JD program recognizes the value of interdisciplinary study and encourages students having an interest in both social work and law to pursue these degrees simultaneously. Social workers and lawyers often seek to address identical or related societal concerns, albeit from different perspectives; understanding both disciplines enhances one's effectiveness in both professional capacities. Law courses strengthen the social worker's understanding of legal doctrine and structures that have an impact on social institutions and human conditions; social work courses help lawyers to better understand human behavior, conflict resolution, and social welfare institutions.

MSSW/MA in Pan-African Studies

The dual MSSW/MA in Pan-African studies program recognizes the value of professional education in two interrelated fields and encourages students who have an interest in both Pan-African Studies and Social Work to pursue these degrees simultaneously. Social workers and Pan-African studies scholars often seek to address identical or related societal concerns, albeit from different perspectives; understanding both disciplines enhances one's effectiveness in both the analysis of and engagement with contemporary social and cultural issues. Pan-African Studies courses strengthen the social worker's understanding of the historical foundations for policies and structures that have an impact on social institutions and human conditions; social work courses help Pan-African scholars or activists to better understand human behavior,

conflict resolution and social welfare institutions. A Pan-African Studies and Social Work combination provides the tools of social change for a historic problem of racial injustice.

MSSW/MA in Women's, Gender and Sexuality Studies

The dual MSSW/MA in Women's, Gender and Sexuality program recognizes the value of professional education in two interrelated fields and encourages students who have an interest in both Women's, Gender and Sexuality and Social Work to pursue these degrees simultaneously. Social workers and Women, Gender, and Sexuality scholars often seek to address identical or related societal concerns, albeit from different perspectives; understanding both disciplines enhances one's effectiveness in both the analysis of and engagement with contemporary social and cultural issues. Women's, Gender and Sexuality courses strengthen the social worker's understanding of the historical foundations for policies and structures that have an impact on social institutions and human conditions; social work courses help Women's, Gender, and Sexuality scholars or activists to better understand human behavior, conflict resolution, and social welfare institutions. A Women's, Gender and Sexuality and Social Work combination provides the tools of social change for a historic problem of gender inequality and injustice.

MSSW/MA in Interdisciplinary Studies, concentration in Healthcare Ethics

The dual MSSW/MA in Interdisciplinary Studies, concentration in Healthcare Ethics degree program focuses on providing our social work graduates a contextual experience within the interdisciplinary fields that comprise bioethics in addition to the development of social work skills. Bioethics is an inherently interdisciplinary field, located principally at the intersection of philosophy, the law, and the health care professions, such as clinical medicine and nursing, but drawing as well from social science disciplines as diverse as sociology, clinical psychology, and social work. In addition to any career options presented by the MSSW, degree holders may then participate in hospital ethics committees, teach medical ethics and humanities, or be prepared for future doctoral-level work in medical ethics and humanities.

MSSW Admission Requirements

Admission to the Kent School of Social Work and Family Science MSSW program is competitive. The selection process includes an evaluation of each applicant's demonstrated and potential abilities as a student, practitioner, and leader in the social work field. Applicants should utilize the MSSW Application Checklist to ensure that all application requirements and relevant deadlines are met, which can be found on the MSSW Admissions page of Kent's website (<https://louisville.edu/kent/admissions-1/mssw-admissions/mssw-admissions/>). Attending an MSSW prospective student session is beneficial and will likely assist applicants in strengthening their application. Please consult the Kent School website (<https://louisville.edu/kent/admissions-1/mssw-admissions/mssw-prospective-student-info-request-form/>) for a list of scheduled prospective student sessions.

An undergraduate GPA of 3.0 is recommended for consideration to the MSSW program.

Applicants to the MSSW program must meet the following requirements:

- A bachelor's degree from a regionally accredited institution of higher learning
- A minimum of 27 credit hours in the social sciences, i.e., communications (six (6) credit hours), natural sciences (three (3)

credit hours), humanities (nine (9) credit hours), and social sciences (nine (9) credit hours)

The application file is complete when all of the following are received by the Graduate School:

- **Graduate Admission Application.** Application forms are available online (<http://louisville.edu/graduate/apply/>), and there is a non-refundable application processing fee. It is suggested that you apply online and pay your application with a credit card.

- **Official academic transcripts** are required from every college/university attended, including those at which students were enrolled for academic credit as non-degree students and/or credits that transferred to another college. All transcripts must bear the official seal and signature of the institution attended. Official electronic transcripts are also accepted and encouraged. UofL transcripts for the University of Louisville graduates will be provided automatically, with no request needed. All other transcripts must be sent directly from the Registrar or appropriate officer of each institution. Paper official transcripts should be sent directly to:

Graduate School
University of Louisville
Houchens Building, Suite 105
Louisville, KY 40202

- **Two (2) Recommendation Letters.** List the email addresses of two (2) recommenders in the "Recommendation" section of the Online Graduate Application (<http://louisville.edu/graduate/apply/>). Recommendation forms are automatically emailed after the recommender's information is entered and the send to recommender button is clicked.

- One recommendation must be from a former professor. Applicants who have not been enrolled in classes within the past two (2) years must substitute a professional reference. Please direct all questions pertaining to acceptable recommenders to msswkent@louisville.edu.
- Personal recommendations are not accepted. These include relatives, co-workers, friends, mentors, personal therapists, clergy, advisors, etc.
- The Kent School of Social Work and Family Science reserves the right to request additional supportive material from persons acquainted with the applicant's academic or practice capabilities if deemed necessary.
- **Advanced Standing Applicants Only:** Applicants who wish to be considered for the 30 credit hour Advanced Standing program must submit their BSW Final Practicum Field Evaluation (or a fall final evaluation if currently in a BSW program) and one letter of recommendation. Applicants who obtained a BSW within the last seven years from an undergraduate social work program accredited or in candidacy by CSWE may be eligible to apply to the Advanced Standing, 30 credit hour program. There is a preferred, though not required, cumulative GPA of 3.00 and a social work GPA of 3.25.

- **Resume.** Please include current/past employment as well as volunteer and service roles served. This document can be uploaded in the "Upload Materials" section of the Online Graduate

Application (<http://louisville.edu/graduate/apply/>) or emailed to gradadm@louisville.edu after you have submitted the online application.

- **Admission Essay.** Under the "Education and or Life Experiences Responses" section of the Online Graduate Application (<http://louisville.edu/graduate/apply/>), applicants must respond to their choice of two (2) prompts and the Diversity Statement.
- The Kent School of Social Work and Family Science MSSW Program takes an anti-oppressive stance in educating students for careers as specialized social work practitioners who apply critical thinking skills and available evidence to inform practice that responds to complex social problems. Upload to the application, a 2-part, three (3) page double-spaced, 12-font essay with sources cited addressing the following:
 - Analyze a systemic/institutionally oppressive policy or practice and discuss the scope, the population affected, causes and consequences, as well as what social workers can do to combat the oppressive policy or practice.
 - Review the NASW Code of Ethics Preamble and Ethical Principles and discuss how your personal values and beliefs are or are not compatible with NASW values. How will you reconcile any conflicts between your personal values and the requirement of the profession? View the Code of Ethics here: <https://www.socialworkers.org/About/Ethics/Code-of-Ethics/Code-of-Ethics-English> (<https://nam11.safelinks.protection.outlook.com/?url=https%3A%2F%2Fwww.socialworkers.org%2FAbout%2FEthics%2FCode-of-Ethics%2FCode-of-Ethics-English&data=05%7C01%7Ckrista.young%40louisville.edu%7Cb3521eab8e314f85b52108db6cf56f9d%7Cdd246e4a54344e158ae391ad9797b209%7C0%7C0%7C6382235736199%7CTWFpbGZsb3d8eyJWljoicMC4wLjAwMDAiLCJQIjoiV2luMzliLCJBTiI6Ik1h%7C3000%7C%7C%7C&sdata=ve32EurnnZmWLZkZNX6quVMf%2Bahc%2FEeQ2eaffzDubFA%3D&reserved=0>).
 - Please contact msswkent@louisville.edu with any questions about the admissions essay.

Kent School BSW to MSSW Admission Criteria

The University of Louisville BSW students may be eligible for special Advanced Standing admission to the MSSW program by providing only one letter of recommendation from a BSW professor, a copy of their BSW Final or Fall Practicum Evaluation (current BSW seniors will have their evaluations provided for them automatically) in addition to the other application requirements. The University of Louisville transcripts will be provided automatically. For more information, contact msswkent@louisville.edu or visit the Kent School's Admission page (<https://louisville.edu/kent/admissions-1/mssw-admissions/mssw-admissions/>). The Admissions Committee may request additional admissions materials prior to admission if necessary.

Cardinal Express to Success Admission Criteria

The MSSW Cardinal Express to Success admission requirements is exclusive for Historically Black Colleges and Universities (HBCUs) and Hispanic-Serving Institutions (HSIs) students and graduates who are seeking to pursue their MSSW degree. This approach acknowledges and promotes diversity, equity, and inclusion in the MSSW program by providing a pathway for HBCU and HSI students and graduates to

access advanced education and training in the field of social work. The Cardinal Express to Success Program is open to all eligible applicants regardless of race, color, national origin, sex, disability, or age. Applicants can contact the Admissions Team at hbcucard@louisville.edu or visit the Kent School's Admission page (<https://louisville.edu/kent/admissions-1/mssw-admissions/mssw-admissions/>) for additional details about the application process. The Admissions Committee may request additional admissions materials prior to admission if necessary.

MSSW Dual Programs

If you wish to pursue any of the dual degree programs, you must also complete the other unit's application process. All dual degree options may not offer fully online opportunities, so students in the Online MSSW program may be ineligible for some dual degrees.

International students

All MSSW candidates who completed their undergraduate degrees outside of the US are required to have their transcripts evaluated by the credential services World Education Services at [wes.org](http://www.wes.org) (<http://www.wes.org>) or Educational Credential Evaluators at [ece.org](http://www.ece.org) (<http://www.ece.org>). Any candidate may be required to participate in a brief telephone interview as part of the admissions process. Candidates who are required to complete an I-20 form should note that they will be placed in a practicum program as part of their education. Admitted students to the on-campus program should contact UofL's International Center to determine if any other immigration documentation is necessary to begin practicum at louisville.edu/internationalcenter (<http://louisville.edu/internationalcenter/>).

ALL candidates for whom English is not their primary language must:

- show English proficiency by demonstration of a specified level of proficiency on the TOEFL exam, IELTS or Duolingo examination or by providing an official transcript from an acceptable English language institution
- Minimum TOEFL scores: 213 on the computer-based TOEFL or a score of 79-80 on Internet-based TOEFL is required. More information on TOEFL at www.ets.org/toefl (<http://www.ets.org/toefl/>).
- Minimum IELTS score: 6.5 for more information review www.ielts.org (<https://www.ielts.org/>)
- Duolingo score of 105 for more information review englishtest.duolingo.com/applicants ([https://nam11.safelinks.protection.outlook.com/?url=http%3A%2F%2Fenglishtest.duolingo.com%2Fapplicants&data=04%7C01%7Ccheryl.schroader%40louisville.edu%7C0baa30a62e8345914a7c08d9faf80847%7Cdd246e4a54344e158ae391ad9791b209%7C0%7C637816765462146305%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLjBtIiwiZW50cm9udGVudCI6IjE1aWw1LCJXVCi6Mn0%3D%7C3000&sdata=touQ%2Brap6mVG4VBHkhRok5SfbyjKR0nFk0ySeS6clh8%3D&reserved=0\)](https://nam11.safelinks.protection.outlook.com/?url=http%3A%2F%2Fenglishtest.duolingo.com%2Fapplicants&data=04%7C01%7Ccheryl.schroader%40louisville.edu%7C0baa30a62e8345914a7c08d9faf80847%7Cdd246e4a54344e158ae391ad9791b209%7C0%7C637816765462146305%7CUnknown%7CTWFpbGZsb3d8eyJWIjoiMC4wLjAwMDAiLCJQIjoiV2luMzliLjBtIiwiZW50cm9udGVudCI6IjE1aWw1LCJXVCi6Mn0%3D%7C3000&sdata=touQ%2Brap6mVG4VBHkhRok5SfbyjKR0nFk0ySeS6clh8%3D&reserved=0)).

MSSW Online US Citizens Living Abroad & Outside of Kentucky

Applicants who live outside of the US will need to consult with the Field Education Office in advance of applying to the MSSW program to ensure the feasibility of meeting the practicum placement requirements in accordance with CSWE policies at fieldedu@louisville.edu. A qualified practicum supervisor must be readily available (e.g., the supervisor has an MSSW/MSW degree from a CSWE accredited institution or

similar CSWE type accreditation) and/or the applicant must participate in identifying a qualified practicum supervisor with the support of the Field Education Office. Both applicants outside of the US and outside of Kentucky must be willing to participate in the process of identifying a qualified practicum supervisor with the support of the Field Education Office. MSSW Online applicants in rural areas must consider that they may be required to travel to their practicum placements if no qualifying practicums are available in their local area.

MSSW Admission Deadlines

The final deadline varies as explained below, but because entry into the program is highly competitive, applicants are encouraged to submit their applications early to ensure a space. All admissions materials must be received in the Graduate School by the listed date in order for an applicant to be considered for admission by a particular deadline.

Kent School deadlines for admission are classified as follows:

Fall Start: August

- Priority Deadline: June 1st
- Deadline: July 15th

Spring Start: January

- Priority Deadline: October 30th
- Deadline: November 15th

Summer Start: May

- Priority Deadline: March 1st
- Deadline: April 1st

Exceptions to deadlines

Applications submitted past the deadline may be considered on case-by-case bases if space allows and only if the applicant is willing to pursue courses with availability and potentially delay field/practicum start until the following semester. Please contact the MSSW Admissions Office at msswkent@louisville.edu for questions about the MSSW Program and the Practicum Education Office at fieldedu@louisville.edu for field/practicum questions.

Program Requirements

The MSSW program offers flexibility through its variety of degree completion options. Courses are offered on multiple days, times, and can be completed in a traditional classroom format, entirely online, or a combination of the two.

The coursework includes two academic year-long field/practicum placements that require on average 16 to 18 hours per week in the field/practicum placement.

Though not required, students have the opportunity to tailor their education by exploring an optional concentration while obtaining their MSSW.

For concentration elective course requirements, please refer to the Concentration Areas tab.

MSSW 60 Credit Hour Regular Program

Students who are admitted and do not have a Council on Social Work Education (CSWE) accredited Bachelor of Social Work degree enter the 60 credit hour **regular program**. This program can be completed on-campus or online within two to four years. The next listing provides a basic description of the courses needed to complete this program:

Generalist Coursework

Code	Title	Hours
MSSW 601	Human Behavior in the Social Environment I	3
MSSW 619	Human Behavior in the Social Environment II	3
MSSW 602	Social Welfare Policy I	3
MSSW 622	Social Welfare Policy II	3
MSSW 603	Diversity, Oppression, and Social Justice Practice	3
MSSW 604	Micro Social Work Practice	3
MSSW 605	Macro Social Work Practice	3
MSSW 670	Generalist Social Work Practicum I	3
MSSW 671	Generalist Social Work Practicum II	3
MSSW 626	Research Methodology and Design	3

Minimum Total Hours 30

¹ 16 clock hours per week

Specialized Coursework

(Prerequisite: all Generalist Courses)

Code	Title	Hours
MSSW 641	Social Justice Policy	3
MSSW 640	Evidence-Based Practice with Individuals, Families, and Groups	3
MSSW 642	Psychopathology	3
MSSW 677	Mezzo Practice and Integrated Social Work Practice with Complex Cases	3
MSSW 668	Program Evaluation in Social Work	3
MSSW 672	Specialized Social Work Practicum I	3
MSSW 673	Specialized Social Work Practicum II	3
Select three MSSW Electives		9

Minimum Total Hours 30

¹ 18 clock hours per week

MSSW 30 Credit Hour Advanced Standing Program

Students holding a CSWE-accredited Bachelor of Social Work degree who have demonstrated good academic performance in their social work courses may be enrolled in the 30 credit hour **advanced standing** Program.

This program equates to completing the 30 credit hour specialized portion of the 60 credit hour program. No academic credit is given for life or work experience. Advanced Standing is limited to applicants who have earned BSW degrees within the last seven years, at the time of enrollment in the Kent School. This program can be completed on-campus or online within one to two years.

The next listing provides a basic description of the courses needed to complete this program;

Specialized Coursework

Code	Title	Hours
<i>BSW degree required</i>		
MSSW 641	Social Justice Policy	3
MSSW 640	Evidence-Based Practice with Individuals, Families, and Groups	3
MSSW 642	Psychopathology	3
MSSW 677	Mezzo Practice and Integrated Social Work Practice with Complex Cases	3
MSSW 668	Program Evaluation in Social Work	3
MSSW 672	Specialized Social Work Practicum I	3
MSSW 673	Specialized Social Work Practicum II	3
Select three MSSW electives		9

Minimum Total Hours 30

¹ 18 clock hours per week

Concentration Area Requirements

Alcohol and Drug Counseling

Academic Plan Code(s): SW_ _MSW30A, SW_ _MSW60A, SWONMSW30A, SWONMSW60A

Code	Title	Hours
MSSW 660	Motivation and Change: The Process of Change and Strategies to Elicit Intrinsic Motivation.	3
MSSW 661	Special Issues in Alcohol and Drug Counseling	3
MSSW 662	Substance Use and Substance Use Disorders	3

Minimum Total Hours 9

Gerontology

Academic Plan Code(s): SW_ _MSW30G, SW_ _MSW60G, SWONMSW30G, SWONMSW60G

Code	Title	Hours
MSSW 681	Social Gerontology	3
MSSW 682	Social Work Practice with Older Persons	3
One of the following:		3
MSSW 615	Mental Health	
MSSW 636	Death & Grief	
MSSW 662	Substance Use and Substance Use Disorders	
MSSW 684	Spirituality and Social Work	

Minimum Total Hours 9

Mental Health

Academic Plan Code(s): SW_ _MSW30M, SW_ _MSW60M, SWONMSW30M, SWONMSW60M

Code	Title	Hours
Required Elective		
MSSW 615	Mental Health	3
Choose two from the following electives:		6
MSSW 657	Group Methods	
MSSW 659	Introduction to Family Therapy Practice	
MSSW 660	Motivation and Change: The Process of Change and Strategies to Elicit Intrinsic Motivation.	
MSSW 636	Death & Grief	
Minimum Total Hours		9

Military Social Work

Academic Plan Code(s): SW_ _MSW30V, SW_ _MSW60V, SWONMSW30V, SWONMSW60V

Code	Title	Hours
MSSW 627	Military Social Work	3
Choose 2 of the following electives:		6
MSSW 615	Mental Health	
MSSW 659	Introduction to Family Therapy Practice	
MSSW 662	Substance Use and Substance Use Disorders	
Minimum Total Hours		9

Psychosocial Oncology

Academic Plan Code(s): SW_ _MSW30P, SW_ _MSW60P, SWONMSW30P, SWONMSW60P

Code	Title	Hours
MSSW 647	Psychosocial Practice in Oncology I Social Work Practice with Individuals and Families in Healthcare	3
MSSW 648	Psychosocial Practice in Oncology II: Social Work Practice to Promote Health Equity	3
Choose one elective course from the following:		3
MSSW 633	Social Work and Human Sexuality	
MSSW 636	Death & Grief	
MSSW 684	Spirituality and Social Work	
PHEP 501	Introduction to Epidemiology (previously PHEP 601)	
Other courses of interest—to be approved by chair		
MSSW 672 & MSSW 673	Specialized Social Work Practicum I & Specialized Social Work Practicum II (Field Practicum (2 days per week in cancer care setting))	6
Minimum Total Hours		15

School Social Work

Academic Plan Code(s): SW_ _MSW30S, SW_ _MSW60S, SWONMSW30S, SWONMSW60S

Code	Title	Hours
EDSP 644	Applied Behavior Analysis	3
MSSW 630	School Social Work: Policy and Practice	3
MSSW 672	Specialized Social Work Practicum I	3
MSSW 673	Specialized Social Work Practicum II	3
Self-selected elective of interest		3
Student Portfolio		
Minimum Total Hours		15

The Master of Science in Social Work program and the concentration areas of Alcohol and Drug Counseling and School Social Work prepares students to meet the requirements for certification and/or licensure. If you plan to pursue professional licensure or certification you should first determine your state's criteria for examination and licensure to see how/if our program meets those requirements prior to enrollment. We recommend that you also contact your state's licensing board directly to verify that the requirements have not changed recently and to answer any questions especially those regarding additional requirements beyond the degree.

More information about certification or licensure is available at the following website: <https://louisville.edu/oapa/licensure-information> (<https://louisville.edu/oapa/licensure-information/>) (you may search by school or by the name of the program then click on 'View Details' to display the information).

For programs with an online option, more information about certification or licensure is available here: <https://louisville.edu/online/About-Us?tab=disclosures> (<https://louisville.edu/online/About-Us/?tab=disclosures>)

Doctor of Social Work (DSW)

Doctor of Social Work

Unit: Kent School of Social Work and Family Science (<https://louisville.edu/kent/>) (GK)

Department: Social Work (<https://louisville.edu/kent/academics/dsw-doctor-of-social-work/>)

Program Website (<https://louisville.edu/online/programs/doctoral/online-doctor-of-social-work/>)

Academic Plan Code(s): SW_ _DSWO

This program is completed entirely online (<https://louisville.edu/online/programs/doctoral/online-doctor-of-social-work/>).

The Doctor of Social Work degree is intended to prepare social workers to assume advanced professional roles such as master practitioner, educator, administrator, policy practitioner, or leader in settings where social workers practice. The degree program will educate social workers holding a master's degree with at least three years of post-master's experience to become future practitioner scholars in teaching and social service leadership.

The overall goal of the degree program is to offer advanced education, training, and mentoring to social workers holding a master's degree with at least three years of post-master's experience who wish to become social work teaching faculty or leaders in public or private social service organizations throughout Kentucky, the nation, and abroad.

The integrated curriculum will equip students with both leadership and teaching skills so they will be able to assume either or both social service leadership and teaching faculty positions.

Admission Requirements

To apply to the Doctor of Social Work (DSW) program in social work, send the following materials by February 1 to:

Graduate School

Graduate Admissions

University of Louisville

Houchens Building, Room 105

Louisville, KY 40292

- Completed Graduate Admissions Application (<http://louisville.edu/graduate/apply/>) for Admission to the University of Louisville's Doctor of Social Work (DSW) Program offered in the Kent School of Social Work and Family Science.
- Application fee
- Official transcripts from each college/university attended, and documentation of the receipt of a master's degree in Social Work, e.g. MSW, MSSW, from a CSWE accredited program or international equivalent.
- Current Resume or Curriculum Vita
- Three letters of recommendation from individuals familiar with the applicant's work and/or academic ability and performance such as current or former supervisors and instructors
- A writing sample demonstrating the applicant's writing and analytical ability responding to the required writing prompt
- Personal statement of goals for pursuing the Doctor of Social Work degree
 - What is your purpose for pursuing the Doctor of Social Work (DSW) degree at this point in your career?

What have you learned from your past academic and social work practice experience for you to be successful in the Doctor of Social Work (DSW) program?

What are the primary challenges you anticipate and supports you will need from the DSW program to successfully complete the online program?

The Kent School of Social Work strives for diversity, equity, and inclusion and is actively committed to becoming an anti-racist organization. What contributions, if any, do you see yourself making to these efforts as a DSW student in the Kent School of Social Work?

The personal statement is expected to be between 2-3 pages, single spaced using 12pt Font.

- Three years of post-master's degree social work experience
- Master's GPA of 3.0 (note: applicants with a master's GPA of below 3.0 showing potential for success as demonstrated in their other submitted application materials and/or in the interview for admission into the Doctor of Social Work program will be given consideration for admission)

The admission process involves the following:

- DSW Admissions Committee review of application materials
- Applicants may be interviewed per DSW Admissions Committee's recommendations
- DSW Program recommendation to the Graduate School

Program Requirements

Code	Title	Hours
Core Courses		
DSW 730		3
DSW 701		3
DSW 705	Program Evaluation	3
DSW 706		4
DSW 707		3
DSW 708	Social Work Teaching & Learning: Theories, Methods & Assessment	4
DSW 709	Teaching in Social Work: Course Design, Instruction & Evaluation	3
DSW 710	Policy Analysis & Advocacy: Contemporary Issues	3
DSW 702	Implementation Science, Program Development, & Administration	3
DSW 703		3
DSW 704		3
DSW 711		3
DSW 712	Capstone Project I	3
DSW 713	Capstone Project II	3
Minimum Total Hours		44

Practicum Experiences

Students complete two practicum experiences. In the fall semester of the second year, students complete a leadership practicum concurrently with Applied Social Service Leadership, Management & Practice typically in the student's place of employment. In the spring semester of the second year, students complete a teaching practicum concurrently with Social Work Teaching & Learning: Theories, Methods & Assessment.

Graduation Requirements

- Minimum cumulative GPA of 3.0 at program completion
- Successful completion of all courses in the curriculum plan
- Proficiency rating of at least 85% on the qualifying assessment
- Successful defense of a thesis or capstone project
- Completion of all school and university requirements for awarding of the degree
- Completion of the program within four years from the time of passing the qualifying assessment

Doctoral Qualifying Assessment

The qualifying assessment allows students to demonstrate their abilities to apply and integrate their skills and readiness to address complex issues within capstone projects.

Doctoral Capstone Project

After admission to candidacy, students complete an original capstone project under the supervision of a faculty mentor and other content expert mentors. Students will defend their capstone projects.

Social Work (PhD)

Doctor of Philosophy in Social Work

Unit: Kent School of Social Work and Family Science (<https://louisville.edu/kent/>) (GK)

Department: Social Work (<https://louisville.edu/kent/academics/doctor-of-philosophy-in-social-work/>)

Program Website (<https://louisville.edu/kent/academics/doctor-of-philosophy-in-social-work/>)

Academic Plan Code(s): SW_ _PHD

Program Information

Mission statement: The program develops scholars prepared to create knowledge through research that informs interventions and policies and educates future social workers to address critical social problems and pursue social justice. The program also prepares its graduates for positions in academic and related research settings.

Goals:

- Graduates will demonstrate advanced critical thinking skills and knowledge necessary to be leaders in the social work profession as researchers, academicians and advocates for social justice.
- Graduates will demonstrate mastery of an area of theoretical and methodological expertise to address specific social problems.
- Graduates will demonstrate mastery of research methodology and advanced statistics, including both quantitative and qualitative methods.
- Graduates will demonstrate mastery of the knowledge and skills necessary to prepare future social workers to address complex social problems.

For additional information about the PhD Program in the Raymond A. Kent School of Social Work and Family Science, click here (<http://louisville.edu/kent/academics/doctor-of-philosophy-in-social-work/>).

Program Components:

The components of the program include: (a) coursework, (b) comprehensive examination, (c) dissertation, and (d) mentoring and professional development. The program requires a total of 50 credit hours. A revised curriculum is nearing final stages; minor adjustments are possible.

Additional Information:

For more information, policies and procedures, please view the PhD Social Work Program Handbook (<https://louisville.edu/kent/academics/PhDHandbook2223.pdf>)

Admission Requirements

Interested applicants will want to view the PhD Admissions page (<https://louisville.edu/kent/academics/phd-social-work-apply/>), and our PhD Application Guidance (<https://louisville.edu/kent/academics/ph.d.-links/ph.d.-application-checklist/>) reference to walk through the general application process. Materials are due December 1st of each year. New cohort members can typically look forward to entry for the following Fall Semester.

Application materials include the following:

- Graduate Admissions Application (<http://louisville.edu/graduate/apply/>)
- Doctoral program application
- Non-refundable application processing fee
- Official Transcripts
- Letters of recommendation
- Writing sample
- Personal statement
- Resume
- TOEFL/IELTS/Duolingo (if required)

The admission process involves the following:

- Review of application materials by the doctoral admissions committee
- Admission committee interviews with those recommended
- Recommendations of selected applicants are forwarded to the Graduate School

*Note: Admission is typically limited to individuals who hold a Master in Social Work degree—i.e., MSW, MSSW—from programs accredited by the Council on Social Work Education (CSWE) or international equivalents. Two years of full-time post-master's degree experience is advised. However, applicants without a Master's degree in social work, but with a Master's degree in another related discipline are welcome to apply and will be considered on a case by case basis.

Program Requirements

Code	Title	Hours
Core Courses		
<i>Year 1/Fall</i>		
SW 729	Pro Seminar I: Foundations of Scholarly Writing	1
SW 732	Theory I: Philosophy of Science & the Development and Application of Theory in Social Work Research	3
SW 733	Foundation Research Methods	3
SW 734	Introduction to Social Statistics and Data Analysis	3
<i>Year 1/Spring</i>		
SW 741	Systemic Change: Identifying and Intervening in Issues of Social Justice	3
SW 742	Theory II: Theory-Driven Analysis of Social Problems to Inform Practice & Social Welfare Policy	3
SW 743	Advanced Research Methods	3
SW 744	Applied Regression Analysis	3
<i>Year 1/Summer</i>		
SW 750	Independent Study: Examination of Scholarly Literature	3
or SW 751	Independent Study: Mentored Research Experience	
SW 752	Qualitative Methods: Design, Data Collection, and Analysis	3
<i>Year 2/Fall</i>		

SW 761	Advanced Scholarly Writing to Fund and Disseminate Research to Diverse Audience	3
SW 765	Advanced Qualitative Research: Design, Data Collection, and Analysis	3
SW 764	Teaching in Social Work ¹	3
Elective		3
<i>Year 2/Spring</i>		
SW 780	Pro Seminar II: Comprehensive examination Preparation	1
Elective or SW 750 or 751 Independent Study		3
SW 781	Teaching Practicum ¹	3
Elective		3
<i>Year 2/Summer</i>		
SW 799	Dissertation Preparation	6
<i>Years 3 and 4</i>		
DOCT 600	Doctoral Candidacy	0
Minimum Total Hours		56

¹ SW 764 and SW 781 may be replaced by DSW 708 and DSW 709 at the discretion of the program director.

The coursework consists of 56 credit hours, including 38 credit hours of core curriculum, twelve (12) hours of individualized curriculum (i.e. independent studies and electives), and six (6) credit hours of dissertation preparation. Six of the twelve (12) individualized credit hours must be in research methods or statistics.

Comprehensive Examination

The comprehensive examination evaluates knowledge and skill deemed critical prior to beginning the dissertation component. Students are eligible to write their comprehensive examination upon successful completion of all required coursework. A thorough description of the comprehensive examination details the following requirements: (a) eligibility, (b) students' exam committees, (c) exam committee roles and responsibilities, (d) expected content of the exam, (e) length of exam and time allotments, and (f) evaluation of student performance.

Following the passage of the comprehensive examination, students are admitted to *Candidacy* status and proceed with their dissertation:

2nd Year: Summer : Dissertation Preparation (six (6) credit hours)

Dissertation

The primary requirement of a dissertation is that it contributes to the knowledge base of the social work profession. It must represent independent work and be based on original research. Dissertation committees have at least four members and must include one member outside of the Kent School. If the outside member does not have a primary appointment as UofL faculty but is otherwise qualified, they may be granted ad hoc approval to participate. Dissertation information such as deadlines and preparation guidelines dictated by the University are at the Graduate School website (<https://louisville.edu/graduate/current-students/thesis-dissertation-information/>). Please note semester deadlines and that the Request to Schedule Final Oral Defense form must be completed by the student. The required steps to complete the dissertation at the Kent School can be found in the Dissertation Guidelines.

Sociology (MA)

Master of Arts in Sociology (SOCIMA)

Unit: College of Arts and Sciences (<https://louisville.edu/artsandsciences/>) (GA)

Department: Sociology (<https://louisville.edu/sociology/>)

Program Website (<https://louisville.edu/sociology/graduate-studies/ma-in-sociology/>)

Academic Plan Code(s): SOCIMA, SOCIMA_ACC

Program Information

The Department of Sociology, in the College of Arts and Sciences, offers graduate training leading to the Master of Arts in Sociology. The 34 credit hour program of study seeks to provide graduate education at the highest standards, introducing students to the current state of sociological knowledge and methods through quality classroom instruction, faculty-student collaboration, and independent student research and practical learning opportunities.

The program is designed to prepare students for the pursuit of a PhD in sociology or for moving directly into the workforce for a career in government, nonprofits, or the private sector.

Degree Overview

Accelerated BA-BS/MA in Sociology

The Department of Sociology offers an accelerated master's degree program, which is designed to allow motivated undergraduates the opportunity to earn graduate credit hours in sociology during their senior year. As undergraduates, accelerated students may earn between six and nine (6-9) credit hours (taking two-three graduate level courses), which are applied toward both the undergraduate degree as well as the graduate degree, allowing students to begin the graduate program in sociology with credits already applied toward their MA degree. Students must apply by the end of their Junior year.

The graduate courses taken during the student's senior year will depend on the courses the student has remaining to complete his/her undergraduate degree in sociology. The undergraduate advisor works individually with accelerated students regarding their course schedules.

NOTE: Students in the accelerated program in sociology may only apply their graduate credits earned as an undergraduate toward the graduate degree in sociology at the University of Louisville.

To be admitted to the program, a student must have: an undergraduate GPA of 3.35 or better at the time of application (see Admissions tab for more information).

Admissions Requirements

Applicants are examined holistically using the following information in the admissions decisions: GPA, quality of the undergraduate program from which the applicant graduated, two academic letters of recommendation, a personal statement, and possibly an interview with the candidate. Beginning with applicants for Fall 2021, GRE scores are no longer required, although students may submit them if they wish to have them considered.

The Department of Sociology is committed to fostering diversity by considering factors such as race, ethnicity, gender, sexuality, age, and social class in its graduate and undergraduate programs; as such, background factors and circumstances will be considered when reviewing applications.

While admission solely on meeting—or not meeting—certain criteria, chances are improved with the following:

- Undergraduate GPA of 3.2;
- Previous undergraduate course work in statistics, methods, and theory* (with a grade of B+ or better in statistics and a grade of B in methods and social theory)*; and
- International students should also have either (a) a TOEFL score of 213 (on computer-based test) or 79-80 (on the internet-based test), (b) a IELTS score of at least 6.5 or (c) Duolingo score of 105.

*Students may be allowed to make up deficiencies or use equivalent undergraduate courses for these prerequisites. Students who have completed similar courses in these areas may be asked to provide both the course syllabus and completed course work to determine equivalency. Students should contact Dr. Jonetta Weber (jonettaweber@louisville.edu) to discuss any questions regarding these prerequisites.

In exceptional cases, students not qualified for regular admission may be conditionally admitted.

We encourage anyone interested in our graduate program to apply, regardless of grade point averages from undergraduate work or previous graduate work. When making our admission decisions, we holistically consider GPAs alongside personal statements and letters of recommendation (and other materials), knowing that a low GPA can be offset by other personal strengths. We do, however, prefer individuals with undergraduate GPAs of 3.2 or above, and (if applicable) graduate degree GPAs of 3.5 or above. We also encourage anyone who is considering applying to our graduate program to visit our department and meet with our faculty members and current graduate students.

Application Requirements

All applicants must submit to the Graduate Admissions Office:

- A graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>)
- Official copies of transcripts from all colleges attended (students with a foreign transcript must submit an evaluation of the transcript from World Education Services ([www.WES.org](http://www.wes.org)) or Educational Credentials Evaluators ([www.ECE.org](http://www.ece.org)) ([http://www.ece.org/](http://www.ece.org)))
- Two references (preferably from former instructors, and in sociology, if possible) in the form of a discursive letter of recommendation *and* completion of the Letter of Evaluation form
- A *curriculum vitae* or résumé
- TOEFL, IELTS or Duolingo scores, if an international student
- A personal statement (~500-750 words) addressing the points below and giving the department's Graduate Committee a basis for evaluating the student's interest in and ability to complete the program:

- Please explain your reasons for applying to the master's program in sociology at the University of Louisville.
- Discuss your professional or occupational objectives and how you envision the department's program fitting into those objectives.
- Describe the areas of sociology you find especially interesting for study and/or research and identify the sociology faculty with whom you might be interested in working.
- Reflect on your experiences, skills, and/or knowledge related to your potential to engage in applied research in this graduate program.

Students may supplement their application file with GRE scores, but GRE scores are not required for admission.

Application Deadlines and Graduate Assistantships

The Sociology Department has available annually a limited number of graduate assistantships.

The **application deadline for students *not* seeking funding** is June 1 for fall admission and November 1 for spring admission. (Late applications may be considered on an individual basis.) The Department of Sociology does not admit students during the summer session.

The **application deadline for students seeking funding** (including graduate assistantships (<http://louisville.edu/sociology/graduate-studies/graduate-assistantships-ma/>)) is January 5 of the preceding year for fall admission and October 1 for spring admission. The materials must also be accompanied by a letter of interest (a) indicating that the applicant wishes to be considered for an assistantship, and (b) elaborating why the applicant is a good candidate for an assistantship.

Accelerated BA-BS/MA in Sociology Application Procedure

Students must apply for admission to the program no later than the end of their junior year to be eligible to enroll in graduate coursework in their final year of the program. The following must be submitted to the Graduate School:

- Graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>)
- Two references (preferably from sociology instructors) in the form of a discursive letter of recommendation *and* completion of the Letter of Evaluation form (<https://louisville.app.box.com/s/w9jkkbu3cg10q7jtbwxo5rdkn2d1mjaa/>)
- *Curriculum vitae* (CV) or résumé.

Applicants must also submit to the Department of Sociology a personal statement (~500-750 words) addressing the points below and giving the department's Graduate Committee a basis for evaluating the student's interest in and ability to complete the program, as well as providing a sample of the student's writing:

- Please explain your reasons for applying to the accelerated master's program in sociology. What are your professional or occupational

objectives (including any study beyond the master of arts in sociology)? How does this department's program fit into those objectives?

- What areas of sociology do you find especially interesting for study and/or research?
- What positions of responsibility and/or important accomplishments to date, including those in the academic or occupational areas, if any, have you had, and what, specifically, do you believe you have gained from such experience? (Those positions could include employment, participation or leadership in organizations or groups, or volunteer work, etc.)
- Please summarize your experiences, skills, interests, and/or knowledge related to your potential to engage in research methods in this graduate program. (For example, what did you learn, do, and/or focus on for research-related courses or term papers?)

Program Requirements

Code	Title	Hours
SOC 604	Proseminar in Sociology-MA	1
SOC 609	Statistics I	3
SOC 615	Research Methods	3
SOC 618	Qualitative Research Methods	3
SOC 622	Survey Research and Design	3
SOC 655	Social Problems	3
SOC 685	Race and Ethnicity	3
or SOC 675	Social Inequality & Stratification	
SOC 690	Independent Study-MA (second course may be a graduate-level sociology elective)	6
SOC 691	Topical Seminar in Sociology (topic will vary from year to year but focus on a social institution)	3
SOC 693	Thesis Analysis	3
SOC 695	Thesis Research	6
Minimum Total Hours		37

Sociology, Applied (PhD)

Doctor of Philosophy in Applied Sociology

Unit: College of Arts and Sciences (<https://louisville.edu/artsandsciences/>) (GA)

Department: Sociology (<https://louisville.edu/sociology/>)

Program Website (<https://louisville.edu/sociology/graduate-studies/phd-in-applied-sociology/>)

Academic Plan Code(s): ASOPHD

Program Information

The Department of Sociology offers a PhD in Applied Sociology, which is focused on training professional researchers at the highest level to follow the discipline's focus on bringing scientific understandings to the study of social issues and problems. Training is designed to prepare students for both academic careers and meeting the growing demand for applied sociologists who are qualified to address directly the problems facing not only our state but also our nation and the world.

Admissions Requirements

Applicants are examined holistically using the following information in the admissions decisions: GPA, quality of the program from which the applicant graduated, three academic letters of recommendation, a

personal statement, and an interview with the candidate. Beginning with applicants for Fall 2021, GRE scores are no longer required, although students may submit them if they wish to have them considered.

The Department of Sociology is committed to fostering diversity by considering factors such as race, ethnicity, gender, sexuality, age, and social class in its graduate and undergraduate programs; as such, background factors and circumstances will be considered when reviewing applications.

While admission is not based solely on meeting—or not meeting—certain criteria, chances of admission are improved with the following:

- Graduate GPA of 3.5;
- Previous graduate course work in statistics, methods, and theory*;
- Completed thesis (or original independent work of research from another accredited graduate program); and
- International students should also have either a) TOEFL score of at least 213 (on computer-based test) or b) 79-80 (on the internet-based test) or an IELTS score of at least 6.5 or Duolingo score of 105.

*Students may be allowed to make up deficiencies or use equivalent graduate courses regarding these prerequisites. Students who have completed similar courses in these areas may be asked to provide both the course syllabus and completed course work to determine equivalency. Students should contact Dr. Jonetta Weber (<http://louisville.edu/cgi-bin/uofl.mail?name=jonettaweber>) to discuss any questions regarding these prerequisites.

In exceptional cases, students not qualified for regular admission may be conditionally admitted.

We encourage anyone interested in our graduate program to apply, regardless of grade point averages from undergraduate work or previous graduate work. When making our admission decisions, we holistically consider GPAs alongside personal statements and letters of recommendation (and other materials), knowing that a low GPA can be offset by other personal strengths. We do, however, prefer individuals with undergraduate GPAs of 3.2 or above, and (if applicable) graduate degree GPAs of 3.5 or above. We also encourage anyone who is considering applying to our graduate program to visit our department and meet with our faculty members and current graduate students.

Application Deadline

The deadline for applications for admission to the fall semester is June 1 and November 1 for the spring semester. (Late applications may be considered on an individual basis.) The Department of Sociology does not admit students during the summer session.

Students interested in being considered for a doctoral assistantship (<http://louisville.edu/sociology/academic-programs/doctoral/doctoral-assistantships.html>) must submit their application materials (along with a letter of interest a) indicating that they wish to be considered for an assistantship and b) elaborating why they feel they would be a good candidate for an assistantship) by January 5 for the fall semester and October 1 for the spring semester.

Application Requirements

Applicants must submit to the Graduate Admissions Office:

- A graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>)
- Official copies of transcripts from all colleges attended (students with a foreign transcript must submit an evaluation of the transcript from World Education Services (www.WES.org) or Educational Credentials Evaluators (www.ECE.org) (<http://www.ece.org/>))
- Three references (preferably from former instructors, and in sociology, if possible) in the form of a discursive letter of recommendation *and* completion of the University of Louisville Letter of Evaluation form (<https://louisville.app.box.com/s/w9jkkbu3cg10q7jtbwxo5rdkn2d1mjaa/>)
- A curriculum vitae (CV) or résumé
- TOEFL, IELTS or Duolingo scores (if an international student)
- A writing sample (either the student's thesis or another work of original independent research)
- A personal statement (~500-750 words) addressing the points below and giving the Department's Graduate Committee a basis for evaluating the student's interest in and ability to complete the program:
 - Please explain your reasons for applying to the doctoral program in sociology at the University of Louisville.
 - Discuss your professional or occupational objectives and how you envision the department's program fitting into those objectives.
 - Describe the areas of sociology you find especially interesting for study and/or research and identify the sociology faculty with who you might be interested in working.

Students may supplement their application file with GRE scores, but GRE scores are not required for admission.

Application Deadlines

The **application deadline for students *not* seeking funding** is June 1 for fall admission and November 1 for spring admission. (Late applications may be considered on an individual basis.) The Department of Sociology does not admit students during the summer session.

The **application deadline for students seeking funding** (including graduate assistantships (<http://louisville.edu/sociology/graduate-studies/graduate-assistantships-ma/>)) is January 5 of the preceding year for fall admission and October 1 for spring admission. The materials must also be accompanied by a letter of interest (a) indicating that the applicant wishes to be considered for an assistantship, and (b) elaborating why the applicant is a good candidate for an assistantship.

Program Requirements

Code	Title	Hours
<i>Year 1</i>		
Fall		9-10
	SOC 704 Proseminar in Sociology-PhD (only if SOC 604 Proseminar not taken in SOC MA Program) ^{1 hr}	
	SOC 735 Classical Theory OR SOC 738 Contemporary Theory (rotating each year) ^{3 hrs}	
	SOC 691 Topical Seminar OR an outside elective (topic will vary from year to year but focus on a social institution) ^{3 hrs}	

	SOC 685 Race and Ethnicity, SOC 691 Special Topics: Sociology of Gender, or SOC 675 Social Inequality & Stratification (on rotating basis, offered every third year) ^{3 hrs}	
Spring		9
	SOC 710 Statistics II ^{3 hrs}	
	SOC 740 Social Policy or SOC 691 Topical Seminar (these two courses will rotate each year; seminar topic will vary) ^{3 hrs}	
	SOC 790 Independent Study OR an outside elective ^{3 hrs}	
Summer		
	SOC 706 Exam Prep (only taken by funded students) ^{3-9 hrs}	
<i>Year 2</i>		
Fall		9
	SOC 715 Statistics III ^{3hrs}	
	SOC 735 Classical Theory or SOC 738 Contemporary Theory (rotating each year) ^{3 hrs}	
	SOC 685 Race and Ethnicity, SOC 691 Special Topics Sociology of Gender, or SOC 675 Social Inequality & Stratification (on rotating basis, offered every third year) ^{3 hrs}	
Spring		9
	SOC 740 Social Policy or SOC 691 Topical Seminar (these two courses will rotate each year; seminar topic will vary) ^{3 hrs}	
	SOC 795 Dissertation Research ^{6 hrs}	
Summer		
	Doctoral Candidacy	
Minimum Total Hours		36-37

Spanish (MA)

Beginning Fall 2023, the Master of Arts in Spanish is not accepting applications for admission.

Master of Arts in Spanish

Unit: College of Arts and Sciences (<https://louisville.edu/artsandsciences/>) (GA)

Department: Classical and Modern Languages (<https://louisville.edu/modernlanguages/>)

Program Website (<https://louisville.edu/languages/spanish/graduate-programs/>)

Academic Plan Code(s): SPANMA, SPANMA_ACC

Program Information

The Master of Arts in Spanish at the University of Louisville offers broad-based coverage of fields in Hispanic studies, including literary/cultural studies, Spanish linguistics, and translation/interpretation. Through a combination of core courses taught exclusively in Spanish, electives taken either in Spanish or in contiguous programs of study, and faculty-directed research, students develop mastery in one of these fields, preparing themselves for increased cultural competence in the global workplace; more effective service to the Hispanic community; and/or greater competitiveness in doctoral programs in Hispanic studies or Spanish linguistics.

The Spanish MA also serves current primary and secondary school teachers of Spanish seeking to deepen their knowledge of the discipline.

Study abroad opportunities are available and may be supported by one of several departmental travel grants.

Degree Summary

Code	Title	Hours
	Core Coursework	24
	Electives	6
Minimum Total Hours		30

Accelerated BA/MA in Spanish

The combined BA/MA program is an accelerated option for motivated and highly prepared undergraduates at the University of Louisville who wish to prepare themselves for the global economy, a multicultural community, and a changing workplace through the study of language, culture, linguistics, translation, and interpreting. Students admitted to the program may apply up to nine (9) credit hours of graduate coursework towards both the BA in Spanish and the MA in Spanish. After completing the undergraduate program and receiving the BA, the student will enter the graduate program and complete the remaining requirements for the MA.

To be considered for admission to the accelerated program, students must:

- Have a minimum overall grade point average (GPA) of 3.35.
- Complete a graduate application for admission to the Spanish BA/MA, students must apply for admission to the program no later than the end of their junior year to be eligible enroll in graduate coursework in their final year of the program.
- Submit two letters of evaluation.

Full details are available on the program website.

Beginning Fall 2023, the Master of Arts in Spanish is not accepting applications for admission.

Admission Requirements

A prerequisite for admission to the Spanish MA is advanced proficiency in Spanish (speaking, aural comprehension, reading, and writing) and significant previous study of the Spanish language and Hispanic literature and cultures. Applicants who do not hold a BA in Spanish or the equivalent by their intended start date may be required to take remedial coursework to make up for any deficiencies.

Applications are considered throughout the academic year for admission in fall, spring, or summer, although priority will be given to applications received at least six weeks prior to the intended start date. The Director of Graduate Studies in Spanish reviews applications and, in consultation with the Spanish graduate faculty, makes all admission decisions. In rare cases, applicants may be admitted on a conditional basis even though application materials are incomplete.

The complete application includes:

- Graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) and application fee.

- Transcripts from all accredited institutions where undergraduate and/or graduate credit was earned (submitted directly to the Graduate School by the institution). Minimum GPA required for undergraduate work: 3.0 on a four-point scale.
- Two letters of evaluation (submitted directly to the Graduate School by the evaluators). Detailed comments should accompany the evaluation form and address specifically the applicant's proficiency in both Spanish and English, preparation in Hispanic studies, and potential to do graduate work.
- A personal statement of 400-500 words, written in Spanish, discussing how the MA in Spanish relates to the applicant's professional or personal goals.
- A sample of academic writing of at least five pages, preferably a research paper written as part of the requirements for a university-level course. (May be in English or Spanish.)
- All applicants for whom English is a second language must also submit official TOEFL scores of 79 or higher on the internet-based test, 213 or higher on the computer-based test. English proficiency can also be met by submitting official IELTS scores of at least 6.5 overall band score from the academic module exam or official Duolingo overall score of 105. Students holding a bachelor's or advanced degree from an accredited institution in the United States may be exempt from this requirement.

NOTE: While submission of GRE scores is not required for admission to the Spanish MA program, it is strongly recommended for applicants who wish to be considered for a graduate teaching assistantship.

All application materials should be submitted electronically to the Graduate School.

Beginning Fall 2023, the Master of Arts in Spanish is not accepting applications for admission.

Program Requirements

The MA in Spanish requires 30 credit hours of academic coursework at the graduate level, of which at least 18 credit hours must be taken at the 600-level. Upon approval of the Director of Graduate Studies, up to six (6) credit hours of graduate coursework taken at another institution or through an accredited study abroad program may be applied toward the degree.

Required Coursework

Code	Title	Hours
SPAN 524	Introduction to Hispanic Linguistics	3
SPAN 544	Advanced Grammar and Stylistics	3
SPAN 644	Approaches to Hispanic Literature	3
or SPAN 648	Hispanic Cultural Studies	
SPAN 668	Directed Study Project	3
Emphasis Area		9
Select an area of emphasis, Translation and Interpretation or Language, Culture, and Linguistics		
Electives at 500 or 600 level		9
Minimum Total Hours		30

Special Education, Non-Teaching (MEd)

Master of Education in Special Education

Unit: College of Education and Human Development (<http://louisville.edu/education/>) (GE)
 Department: Special Education, Early Childhood, and Prevention Science (<https://louisville.edu/education/departments/sped/>)
 Program Website (<http://louisville.edu/education/degrees/med-se/>)
 Academic Plan Code(s): SPE_MED

Program Information

This program can be completed in a traditional classroom format or entirely online (<http://louisville.edu/online/programs/masters/master-of-education-in-special-education/>).

This program is not designed to lead to teacher certification.

The non-teaching master's degree in Special Education is designed to advance the knowledge and expertise of professionals who are delivering services for children and adolescents with disabilities through comprehensive-care centers, institutions, hospitals, clinics, day care centers, preschools, and community programs.

Admission Requirements

Admission requirements for this program include the following:

- Admission to the College of Education and Human Development
- Baccalaureate degree in special education, psychology, speech language pathology, occupational therapy or social work from an accredited institution
- Professional certification/license/experience in a field related to autism/intellectual disability
- Statement of professional goals
- Two letters of recommendation
- Test of English as a Foreign Language required of all international students from countries in which English is not the native language; and 2.75 cumulative grade point average. (GRE – Not Required)

Program Requirements

Code	Title	Hours
Inquiry (Critical Thinker)		6
EDSP 540	Introduction to Exceptional Children	
EDSP 644	Applied Behavior Analysis	
Advocacy (Professional Leader)		6
EDSP 627	Applications of Assistive Technology	
EDSP 652	Academic and Behavior Response to Intervention	
Action (Problem Solving)		3
EDSP 639	Education Research in P-12 Setting	
Midpoint Assessment		
Area of Emphasis in Special Education		15
Select at least 15 credit hours		
Minimum Total Hours		30

Midpoint Assessment: Cumulative GPA of 3.0 or higher; grade no lower than B-minus in all coursework; Exemplary or Target performance on

all Hallmark Assessment Tasks to date; scored Exemplary or Target on Rubrics for Advanced Candidates.

Exit Assessment: Cumulative GPA of 3.0 or higher, grade no lower than B-minus in all coursework; Exemplary or Target performance on all Hallmark Assessment Tasks; scored Exemplary or Target on Rubrics for Advanced Candidates; positive recommendation from the Special Education Program Committee.

Degree Candidacy: Students not enrolled during the semester in which they intend to graduate must register for degree candidacy as outlined in the Graduate Catalog (<http://catalog.louisville.edu/archive/2023-2024/graduate/general-policies-procedures-requirements/>). (<http://catalog.louisville.edu/archive/2023-2024/graduate/general-policies-procedures-requirements/>)

Special Education, Non-Teaching (MED) Concentration in Autism Spectrum Disorders and Applied Behavior Analysis

Master of Education in Special Education - Concentration in Autism Spectrum Disorders and Applied Behavior Analysis

Unit: College of Education and Human Development (<http://louisville.edu/education/>) (GE)
 Department: Special Education, Early Childhood, and Prevention Science (<https://louisville.edu/education/departments/sped/>)
 Program Website (<https://louisville.edu/education/degrees/med-se-a/>)
 Academic Plan Code(s): SPE_MEDAUT

Program Information

This program is not designed to lead to teacher certification.

The non-teaching master's degree in Special Education is designed to advance the knowledge and expertise of professionals who are delivering services for children and adolescents with disabilities through comprehensive-care centers, institutions, hospitals, clinics, day care centers, preschools, and community programs.

Admission Requirements

Admission requirements for this program include the following:

- Admission to the College of Education and Human Development
- Baccalaureate degree in special education, psychology, speech language pathology, occupational therapy or social work from an accredited institution
- Professional certification/license/experience in a field related to autism/intellectual disability
- Statement of professional goals
- Two letters of recommendation
- Test of English as a Foreign Language required of all international students from countries in which English is not the native language; and 2.75 cumulative grade point average. (GRE – Not Required)

MEd in Special Education, concentration in Autism Spectrum Disorders and Applied Behavior Analysis

Academic Plan Code(s): SPE_MEDAUT

Code	Title	Hours
Inquiry (Critical Thinker)		9
EDSP 644	Applied Behavior Analysis	
EDSP 654	Radical Behaviorism	
EDSP 669	Single Case Research Methods and Designs	
Advocacy: (Professional Leader)		6
EDSP 651	Professional and Ethical Practice of Applied Behavior Analysis	
EDSP 673	Research Seminar in Autism Spectrum Disorders	
Action (Problem Solver)		3-12
EDSP 653	Practicum in Applied Behavior Analysis	
Midpoint Assessment		
Area of Emphasis		12
EDSP 570	Autism: Introduction and Understanding	
EDSP 671	Behavior Intervention	
EDSP 546	Behavior Analytic Approach to Communication	
EDSP 650	Behavior Assessment	
Minimum Total Hours		30-39

Midpoint Assessment: Cumulative GPA of 3.0 or higher; grade no lower than B-minus in all coursework; completion of intervention proposal and presentation with a rating of Satisfactory; Exemplary or Target performance on all Hallmark Assessment Tasks to date; scored Exemplary or Target performance on Advanced Program rubrics.

Exit Assessment: Cumulative GPA of 3.0 or higher; grades no lower than B-minus in all coursework; completion of intervention proposal and presentation with a rating of Satisfactory; Exemplary or Target performance on all Hallmark Assessments; scored Exemplary or Target performance on Advanced Program rubrics; positive recommendation from the Special Education Program Committee.

Degree Candidacy: Students not enrolled during the semester in which they intend to graduate must register for degree candidacy as outlined in the Graduate Catalog (<http://catalog.louisville.edu/archive/2023-2024/graduate/general-policies-procedures-requirements/>).

The Master's in Special Education Non-Teaching Concentration in Autism Spectrum Disorders and Applied Behavior Analysis program prepares students to meet the requirements for certification and/or licensure. If you plan to pursue professional licensure or certification, you should first determine your state's criteria for examination and licensure to see how/if our program meets those requirements prior to enrollment. We recommend that you also contact your state's licensing board directly to verify that the requirements have not changed recently and to answer any questions especially those regarding additional requirements beyond the degree.

More information about certification or licensure is available at the following website: <https://louisville.edu/oapa/licensure-information> (<https://louisville.edu/oapa/licensure-information/>) (you may search by school or by the name of the program then click on 'View Details' to display the information).

For programs with an online option, more information about certification or licensure is available here: <https://louisville.edu/online/About->

[Us?tab=disclosures \(https://louisville.edu/online/About-Us/?tab=disclosures\)](https://louisville.edu/online/About-Us/?tab=disclosures)

Special Education (MEd)



Master of Education in Special Education

Unit: College of Education and Human Development (<http://louisville.edu/education/>) (GE)

Department: Special Education, Early Childhood, and Prevention Science (<http://louisville.edu/education/departments/sped/>)

Program Website (<https://louisville.edu/education/degrees/med-se/>)

Academic Plan Code(s): See Degree Requirements tab.

Program Information

This program can be completed in a traditional classroom format or entirely online (<http://louisville.edu/online/programs/masters/master-of-education-in-special-education/>).

The MEd in Special Education with a concentration in Learning and Behavior Disorders, or Moderate and Severe Disabilities, is designed for the Kentucky certified teacher to add certification. Bachelor's-level certified teachers may use the program to add certification in LBD or MSD, and complete the required Rank II/master's degree. Teachers who have already earned a master's degree may use the program to add certification and complete the Rank I.

Learning and Behavior Disorders

Through the MEd in Special Education with a concentration in Learning and Behavior Disorders program, teachers increase their knowledge and expertise in teaching students with Behavior Disorders, Learning Disabilities, Mild Mental Disabilities, and Orthopedic Impairments at all grade levels from kindergarten through high school.

Moderate and Severe Disabilities

The MEd in Special Education with a concentration in Moderate and Severe Disabilities program prepares candidates to teach students with intellectual disabilities that impede academic achievement and adaptive behavior skills (e.g., communication, social behavior, and daily living activities). This program can be completed in a traditional classroom format or entirely online (<http://louisville.edu/online/programs/masters/master-of-education-in-special-education/>).

Elementary teachers work primarily with beginning or remedial skills in academic content (English language arts, math, science, and social studies) and adaptive behaviors. Middle Grades and Secondary teachers address these skills in addition to preparing students to transition to vocations or to post-secondary education.

Degree Summary

Code	Title	Hours
Core Coursework *		18
Area of Emphasis (Concentration)		18
Minimum Total Hours		36

* EDSP 540 and Teacher Certification are prerequisites for program entry.

Admission Requirements

Applicants are required to submit the following materials:

- Graduate Application to the Graduate School (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>)
- Admission to the College of Education and Human Development
- Baccalaureate degree or its equivalent from an accredited institution
- Official transcripts with a 2.75 minimum GPA in the Bachelor's degree and a 3.0 or higher GPA for graduate work
- Two letters of recommendation
- Personal statement
- Signed Professional Code of Ethics/Technology User Agreement/Statement of Understanding of Admissions Guidelines

Note: The GRE is no longer required for this degree program.

Candidates who earned a baccalaureate (and/or advanced) degree outside the United States and whose native language is not English must submit official TOEFL/IELTS/Duolingo scores that meet minimum criteria, and must submit an evaluated transcript from WES (World Education Services) or ECE (Educational Credential Evaluators).

Program Requirements

MEd in Special Education with a concentration in Learning and Behavior Disorders (grades P-12)

Academic Plan code(s): SPE_MEDSLB

Code	Title	Hours
<i>Prerequisite for entry into the program</i>		
Teacher Certification		
EDSP 540	Introduction to Exceptional Children (or equivalent)	
Inquiry (Critical Thinker)		9
EDSP 644	Applied Behavior Analysis ¹	
EDSP 639	Education Research in P-12 Setting	
EDSP 669	Single Case Research Methods and Designs	
Advocacy (Professional Leader)		6
EDSP 652	Academic and Behavior Response to Intervention	
EDSP 627	Applications of Assistive Technology	
Action (Problem Solver)		3
EDSP 645	Learning and Behavior Disorders Practicum ¹	
Midpoint Assessment		
Area of Emphasis		18
EDSP 647	Teaching Mathematics to Students with Disabilities	
EDSP 512	Methods for Students with Learning and Behavior Disorders ¹	

EDSP 516	Assessment Procedures for Students with Learning & Behavior Disorders ¹	
EDSP 675	Characteristics, Needs, and Responses to Students with EBD ¹	
EDSP 518	Teaching Reading Special Education P-12 ¹	
EDSP 570	Autism: Introduction and Understanding or EDSP 650 Behavior Assessment	
Minimum Total Hours		36

Midpoint Assessment: Cumulative GPA of 3.0 or higher; grade no lower than B- in all coursework; Exemplary or Target performance on all Hallmark Assessment Tasks to date (EDSP 512, 516, 644, 518); scored Exemplary or Target performance on all Advanced Program rubrics.

Exit Assessment: Cumulative GPA of 3.0 or higher; grade no lower than B- in all coursework; scored Exemplary or Target performance on all Hallmark Assessment Tasks; scored Exemplary or Target performance on all Advanced Program rubrics; positive recommendation from the Special Education Program Committee.

Degree Candidacy: Students not enrolled during the semester in which they intend to graduate must register for degree candidacy as outlined in the Graduate Catalog (<http://catalog.louisville.edu/archive/2023-2024/graduate/general-policies-procedures-requirements/>).

Successful completion of appropriate PRAXIS Exams is required for Learning and Behavior Disorders teacher certification.

PRAXIS Disclaimer:

"Teacher certification requirements are subject to change. Before registering for PRAXIS test(s), please refer to the Education Professional Standards Board (EPSB) website at epsb.ky.gov/ (<http://www.epsb.ky.gov/>) or ets.org/praxis (http://www.ets.org/praxis/ky/?WT.ac=praxishome_states_150414) for current requirements."

¹ Course is required for certification.

MEd in Special Education with a concentration in Moderate and Severe Disabilities (grades P-12)

Academic Plan Code(s): SPE_MEDMSV, SPEMEDMSO

This program can be completed in a traditional classroom format or entirely online (<http://louisville.edu/online/programs/masters/master-of-education-in-special-education/>).

Code	Title	Hours
<i>Prerequisite for admission to the program:</i>		
Teacher Certification		
EDSP 540	Introduction to Exceptional Children	
Inquiry (Critical Thinker)		9
EDSP 644	Applied Behavior Analysis ¹	
EDSP 639	Education Research in P-12 Setting	
EDSP 669	Single Case Research Methods and Designs	
Advocacy (Professional Leader)		6
EDSP 652	Academic and Behavior Response to Intervention	
EDSP 627	Applications of Assistive Technology	
Action (Problem Solver)		3

EDSP 635 Moderate and Severe Disabilities Practicum	3
Mid-Point Assessment	
Area of Emphasis	18
EDSP 594 Foundational Concepts in Intellectual and Physical Disability ¹	
EDSP 520 Assessment of Students with Moderate/Severe Disabilities	
EDSP 609 Moderate/Severe Disabilities Curriculum and Methods I ¹	
EDSP 611 Moderate/Severe Disabilities Curriculum and Methods II ¹	
EDSP 570 Autism: Introduction and Understanding	
EDSP 546 Behavior Analytic Approach to Communication ¹	
Minimum Total Hours	39

Midpoint Assessment: Cumulative GPA of 3.0 or higher; grade no lower than B- in all coursework; scored Exemplary or Target performance on all Hallmark Assessment Tasks to date (EDSP 520, 609, 611, 644); scored Exemplary or Target performance on all Advanced Program rubrics.

Exit Assessment: Cumulative GPA of 3.0 or higher; grade no lower than B- in all coursework; scored Exemplary or Target performance on all Hallmark Assessment Tasks; scored Exemplary or Target performance on all Advanced Program rubrics; positive recommendation from the Special Education Program Committee.

Degree Candidacy: Students not enrolled during the semester in which they intend to graduate must register for degree candidacy as outlined in the Graduate Catalog (<http://catalog.louisville.edu/archive/2023-2024/graduate/general-policies-procedures-requirements/>).

Successful completion of the appropriate PRAXIS Exams is required for Moderate and Severe Disabilities teacher certification.

Praxis Disclaimer:

"Teacher certification requirements are subject to change. Before registering for the test(s), please refer to the Education Professional Standards Board (EPSB) website at www.epsb.ky.gov (<http://www.epsb.ky.gov/>) or <http://www.ets.org/praxis/ky> (<http://www.ets.org/praxis/ky/>) for current requirements."

¹ Course is required for certification.

The Master of Education in Special Education program prepares students to meet the requirements for certification and/or licensure. If you plan to pursue professional licensure or certification you should first determine your state's criteria for examination and licensure to see how/if our program meets those requirements prior to enrollment. We recommend that you also contact your state's licensing board directly to verify that the requirements have not changed recently and to answer any questions especially those regarding additional requirements beyond the degree.

More information about certification or licensure is available at the following website: <https://louisville.edu/oapa/licensure-information> (<https://louisville.edu/oapa/licensure-information/>) (you may search by school or by the name of the program then click on 'View Details' to display the information).

For programs with an online option, more information about certification or licensure is available here: [https://louisville.edu/online/About-](https://louisville.edu/online/About-Us?tab=disclosures)

[Us?tab=disclosures](https://louisville.edu/online/About-Us?tab=disclosures) (<https://louisville.edu/online/About-Us?tab=disclosures>)

Special Education - Advanced Practitioner P-12 (RANK1)

Rank 1 Program in Special Education - Advanced Practitioner P-12

Unit: College of Education and Human Developments (<http://louisville.edu/education/>) (GE)

Department: Special Education, Early Childhood, and Prevention Science (<http://louisville.edu/education/departments/sped/>)

Program Webpage (<http://louisville.edu/education/degrees/rank/>)

Academic Plan Code(s): SPE_RK1

Program Information

Rank 1 programs are not degree programs.

Rank 1 programs are planned graduate level programs designed for Kentucky teachers seeking rank change for salary purposes. They are recognized only in the state of Kentucky. By state regulation, Rank 1 status is sixty (60) credit hours of approved graduate credit including a master's degree.

Admission Requirements

- Complete graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>)
- Official transcripts with a minimum 2.75 GPA in the Bachelors degree and 3.0 GPA or higher for graduate work
- Kentucky teaching certificate
- Master's degree/Rank II
- Signed Professional Code of Ethics/Technology User Agreement form

Candidates who earned a baccalaureate (and/or advanced) degree outside the U.S., and whose native language is not English, must submit official TOEFL/IELTS/Duolingo scores that meet minimum criteria, and must submit an evaluated transcript from WES (World Education Services) (<https://www.wes.org/>) or ECE (Educational Credential Evaluators) (<https://www.ece.org/ECE/>).

Program Requirements

Code	Title	Hours
Inquiry (Critical Thinker)		3
Select one of the following		
EDSP 639	Education Research in P-12 Setting (Select one of the following:)	
LEAD 601	Applied Statistics	
Advocacy (Professional Leader)		
Leadership		3
Select one of the following:		
EDSP 651	Professional and Ethical Practice of Applied Behavior Analysis	
EDSP 652	Academic and Behavior Response to Intervention	
EDAP 624	Curriculum Theory	
EDAP 637	Using Assessment to Improve Student Achievement	
LEAD 603	Administrative Leadership in a Reform Environment	

LEAD 613	Administration and Supervision in Special Education	
LEAD 636	Creating Equitable & Reliable Learning Environments	
Diversity		3
Select one of the following:		
EDSP 545	Exceptional Children in the Regular Classroom	
EDAP 521	Teaching English Learners in the Classroom	
EDAP 638	Instructional Strategies for Diverse Learners	
EDAP 642	Literacy Learning and Cultural Differences	
EDTP 503	Developing Cross-Cultural Competence: Teaching Students from Diverse Backgrounds	
Action (Problem Solver)		3
Select one of the following:		
EDSP 669	Single Case Research Methods and Designs	
EDSP 650	Behavior Assessment (Or capstone course equivalency approved by advisor)	
Area of Emphasis		15
Elective		3
Minimum Total Hours		30

Midpoint Requirement: Candidates are required to submit a mid-program performance assessment to their faculty advisor at the completion of fifteen (15) credit hours of coursework. The faculty advisor will assess the candidate's performance, which must be at the exemplary or target level. The performance assessment must address content, classroom environment, teaching, assessing, and reflection, and an artifact such as a video, to document professional learning.

Exit Requirement: Project that demonstrates exemplary or target in all of the Kentucky Teacher Performance Standards.

A minimum of fifteen (15) credit hours in 600-level courses is required. Up to fifteen (15) credit hours of graduate credit may be transferred to the Rank 1 program, as long as the student will have completed sixty (60) credit hours of approved graduate credit including a master's degree at the end of the Rank 1 program. Transfer credit must be officially accepted by the advisor and final acceptance is dependent upon receipt of official transcripts.

In the Rank 1 program, at least fifteen (15) credit hours of new graduate coursework must be taken at the University of Louisville.

To complete the program, students must have a minimum 3.0 grade point average. No credit shall be accepted for carrying a grade lower than B-minus.

Special Education, Concentration in Learning Behavior Disorders P-12, Alternative Certification (MAT)

Master of Arts in Teaching Special Education, Concentration in Learning Behavior disorders P-12

Unit: College of Education and Human Development (<https://louisville.edu/education/>) (GE)

Department: Special Education, Early Childhood and Prevention Science (<http://louisville.edu/education/departments/sped/>)

Program Website (<http://louisville.edu/education/degrees/mat-se-lbd/>)

Academic Plan Code(s): SPE_MATLBD, SPE_MATLBO

Program Information

This program can be completed in a traditional classroom format or entirely online (<http://louisville.edu/online/programs/masters/master-of-arts-in-teaching-in-special-education/>).

The special education licensure program provides a strong foundation in general education content, special education theory and methods, and teaching experience. Extensive classroom experience allows students to develop the skills, competencies, and confidence for successful teaching, including strategies for inclusion, behavior management, social skill instruction, and modifying instruction in the general curriculum. Students also benefit from the supervision and mentorship of experienced practitioners and field supervisors. The program's special education professors are experienced practitioners who are experts in their fields as researchers, teachers, and administrators.

The Alternative Certification program requires that students who are admitted to this program become employed as an LBD teacher on a temporary provisional certificate. Classes start in the Summer each year, and admitted students must secure employment before the start of the Fall term. Those who are not employed, have the option to pursue the traditional version of this program, which requires field placements and student teaching. Completion of this degree/licensure program will only lead to certification as an LBD teacher (not an Elementary, Middle or Secondary content area teacher).

Admission Requirements

Candidates who meet the following criteria may be eligible to apply to the Master of Arts in Teaching program:

- Complete graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>). This should be completed three to four weeks prior to the application deadline.
- Bachelor's Degree from Accredited College or University (<http://louisville.edu/education/degrees/info/bachelors/>) with a Minimum 2.75 Grade Point Average (official transcripts (<http://louisville.edu/education/degrees/info/transcripts/>) required)
- Grade of C or better in ENGL 102 (<https://catalog.louisville.edu/search/?P=ENGL%20102>), or equivalent
- Grade of C or better in oral communication course
- TOEFL (<http://louisville.edu/education/degrees/info/toefl/>)/IETLS (<https://www.ielts.org/>)/Duolingo (<https://www.duolingo.com/>)
- Professional Writing Requirements (<http://louisville.edu/education/degrees/info/mat-mse-professional-statement/>)
- Three Letters of Recommendation (<http://louisville.edu/education/degrees/info/lor/>)
- Acceptable interview
- Signed Professional Code of Ethics/Technology User Agreement/Statement of Understanding of Admissions Guidelines

Questions about admission should be directed to teacher@louisville.edu.

Admission is competitive. Candidates who meet minimum academic requirements are not guaranteed admission to the program.

Program Requirements

Alternative Route in Special Education, Concentration in Moderate/Severe Disabilities P-12 (MAT)

Code	Title	Hours
Student Characteristics		
EDSP 540	Introduction to Exceptional Children	3
EDSP 675	Characteristics, Needs, and Responses to Students with EBD	3
Pedagogy		
EDSP 512	Methods for Students with Learning and Behavior Disorders	3
EDSP 516	Assessment Procedures for Students with Learning & Behavior Disorders	3
EDSP 644	Applied Behavior Analysis	3
EDSP 518	Teaching Reading Special Education P-12	3
Mid-Point Assessment		
EDSP 647	Teaching Mathematics to Students with Disabilities	3
EDSP 614	Transition Programs and Services for Children and Youth with Disabilities	3
EDSP 645	Learning and Behavior Disorders Practicum	3
EDSP 510	Legal Issues in Special Education	3
Minimum Total Hours		30

Midpoint Assessment: Completion of all courses listed above; satisfactory dispositions assessment; Cumulative GPA of 3.0 or higher; grade no lower than B- in all coursework; satisfactory performance on all Hallmark Assessment Tasks (including EDSP 512, 516, and 644); Target performance or better on all rubrics.

Degree Assessment: Cumulative GPA of 3.0 or higher; grade no lower than B- in all coursework; satisfactory performance on all Hallmark Assessment Tasks; Target performance or better on all rubrics.

Certification Assessment: Satisfactory dispositions assessment; passing scores on required PRAXIS exams; completion of degree requirements.

Degree Candidacy: Students not enrolled during the semester in which they intend to graduate must register for degree candidacy as outlined in Academic Policies, Procedures, and Requirements (<https://catalog.louisville.edu/graduate/general-policies-procedures-requirements/>).

Praxis Disclaimer: Teacher certification requirements are subject to change. Before registering for certification test(s), please refer to the Education Professional Standards Board (EPSB) website at epsb.ky.gov/ (<http://www.epsb.ky.gov/>) or ets.org/praxis/ky (<http://www.ets.org/praxis/ky/>) for current requirements.

The MAT in Special Education Concentration in Learning Behavior Disorders (Alternative Certification) program prepares students to meet the requirements for certification and/or licensure. If you plan to pursue professional licensure or certification, you should first determine your state's criteria for examination and licensure to see how/if our program meets those requirements prior to enrollment. We recommend that you also contact your state's licensing board directly to verify that the requirements have not changed recently and to answer any questions especially those regarding additional requirements beyond the degree.

More information about certification or licensure is available at the following website: <https://louisville.edu/oapa/licensure-information> (<https://louisville.edu/oapa/licensure-information/>) (you may search by school or by the name of the program then click on 'View Details' to display the information).

For programs with an online option, more information about certification or licensure is available here: <http://louisville.edu/online/About-Us> (<http://louisville.edu/online/About-Us/>) (please scroll down near the bottom of the page and click on the licensing disclosures tab).

Special Education, Concentration in Moderate/Severe Disabilities P-12 (MAT)

Master of Arts in Teaching in Special Education, Concentration in Moderate/Severe Disabilities P-12

Unit: College of Education and Human Development (<https://louisville.edu/education/>) (GE)

Department: Special Education, Early Childhood and Prevention Science (<http://louisville.edu/education/departments/sped/>)

Program Website (<http://louisville.edu/education/degrees/mat-se-msd/>)

Academic Plan Code(s): SPE_MATMSD, SPE_MATMSO

Program Information

This program can be completed in a traditional classroom format or entirely online (<http://louisville.edu/online/programs/masters/master-of-education-in-special-education/>).

This program leads to Kentucky certification for Moderate and Severe Disabilities, grades P-12. Applicants to the program should have excellent academic credentials as well as successful experience working with children and/or adults with Moderate and Severe Disabilities. Completion of this degree/licensure program will lead to certification as an MSD teacher only (not an Elementary, Middle or Secondary content area teacher).

Students must complete weekly field hours in school or community placements that serve individuals with moderate and severe disabilities. Prior to the end of the program a 12-week student teaching placement must be successfully completed.

Admission Requirements

Candidates who meet the following criteria may be eligible to apply to the Master of Arts in Teaching program:

- Complete graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>). This should be completed three to four weeks prior to the application deadline.
- Bachelor's Degree from Accredited College or University (<http://louisville.edu/education/degrees/info/bachelors/>) with a Minimum 2.75 Grade Point Average (official transcripts (<http://louisville.edu/education/degrees/info/transcripts/>) required)
- Grade of C or better in ENGL 102, or equivalent
- Grade of C or better in oral communication course
- TOEFL (<http://louisville.edu/education/degrees/info/toefl/>)/IELTS (<https://www.ielts.org/>)/Duolingo (<https://www.duolingo.com/>)

- f. Professional Writing Requirements (<http://louisville.edu/education/degrees/info/mat-mse-professional-statement/>)
- g. Three Letters of Recommendation (<http://louisville.edu/education/degrees/info/lor/>)
- h. Acceptable interview
- i. Signed Professional Code of Ethics/Technology User Agreement/Statement of Understanding of Admissions Guidelines

Questions about admission should be directed to teacher@louisville.edu (<http://louisville.edu/cgi-bin/uofl.mail?teacher>).

Admission is competitive. Candidates who meet minimum academic requirements are not guaranteed admission to the program.

Program Requirements

Code	Title	Hours
Student Characteristics		
EDSP 540	Introduction to Exceptional Children	3
EDSP 594	Foundational Concepts in Intellectual and Physical Disability	3
Pedagogy		
EDSP 520	Assessment of Students with Moderate/Severe Disabilities	3
EDSP 609	Moderate/Severe Disabilities Curriculum and Methods I	3
EDSP 611	Moderate/Severe Disabilities Curriculum and Methods II	3
EDSP 614	Transition Programs and Services for Children and Youth with Disabilities	3
EDSP 644	Applied Behavior Analysis	3
Midpoint Assessment		
EDSP 518	Teaching Reading Special Education P-12	3
EDSP 546	Behavior Analytic Approach to Communication	3
EDSP 570	Autism: Introduction and Understanding	3
EDSP 608	Student Teaching: Moderate and Severe Disabilities	3
EDSP 647	Teaching Mathematics to Students with Disabilities	3
Research		
EDSP 697	Topical Seminar	2
EDSP 697	Topical Seminar	1
Minimum Total Hours		39

Midpoint Assessment: Cumulative GPA of 3.0 or higher; no grade lower than B- in all coursework; Electronic documentation of 200 hours of diverse and approved field experiences; satisfactory performance on all Hallmark Assessment Tasks; Target performance or better on all rubrics.

Degree Assessment: Cumulative GPA of 3.0 or higher; no grade lower than B- in all coursework; satisfactory performance on all Hallmark Assessment Tasks; Target performance or better on all rubrics.

Certification Assessment: Satisfactory dispositions assessment; passing scores on required PRAXIS exams; completion of degree requirements.

Degree Candidacy: Students not enrolled during the semester in which they intend to graduate must register for degree candidacy as outlined in Academic Policies, Procedures, and Requirements (<http://>

catalog.louisville.edu/archive/2023-2024/graduate/general-policies-procedures-requirements/).

Praxis Disclaimer: Teacher certification requirements are subject to change. Before registering for certification test(s), please refer to the Education Professional Standards Board (EPSB) website at epsb.ky.gov/ (<http://www.epsb.ky.gov/>) or ets.org/praxis/ky (<http://www.ets.org/praxis/ky/>) for current requirements.

The Master of Arts in Teaching in Special Education program with a concentration in Moderate/Severe Disabilities P-12 prepares students to meet the requirements for certification and/or licensure. If you plan to pursue professional licensure or certification you should first determine your state's criteria for examination and licensure to see how/if our program meets those requirements prior to enrollment. We recommend that you also contact your state's licensing board directly to verify that the requirements have not changed recently and to answer any questions especially those regarding additional requirements beyond the degree.

More information about certification or licensure is available at the following website: <https://louisville.edu/oapa/licensure-information> (<https://louisville.edu/oapa/licensure-information/>) (you may search by school or by the name of the program then click on 'View Details' to display the information).

For programs with an online option, more information about certification or licensure is available here: <https://louisville.edu/online/About-Us?tab=disclosures> (<https://louisville.edu/online/About-Us/?tab=disclosures>)

Special Education, Concentration in Moderate/Severe Disabilities P-12, Alternative Certification (MAT)

Master of Arts in Teaching in Special Education Concentration in Moderate/Severe Disabilities P-12

Unit: College of Education and Human Development (GE) (<http://louisville.edu/education/>)

Department: Special Education, Early Childhood, and Prevention Science (<http://louisville.edu/education/departments/sped/>)

Program Website (<https://louisville.edu/education/degrees/mat-se-msd-ac/>)

Academic Plan Code(s): SPE_MATMSD, SPE_MATMSO

Program Information

This program can be completed in a traditional classroom format or entirely online (<http://louisville.edu/online/programs/masters/master-of-education-in-special-education/>).

This program leads to Kentucky certification for Moderate and Severe Disabilities, grades P-12. Applicants to the program should have excellent academic credentials as well as successful experience working with children and/or adults with Moderate and Severe Disabilities (MSD). Completion of this degree/licensure program will lead to certification as an MSD teacher only (not an Elementary, Middle or Secondary content area teacher).

The Alternative Certification program requires that students who are admitted to this program become employed in an MSD classroom on a temporary provisional certificate. Classes start in the Summer each year. Admitted students must secure employment before the start of the

fall term. Those who are not employed, have the option to pursue the traditional version of this program, which requires field placements and student teaching.

Admission Requirements

Candidates who meet the following criteria may be eligible to apply to the Master of Arts in Teaching program:

- Complete graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>). This should be completed three to four weeks prior to the application deadline.
- Bachelor's Degree from Accredited College or University (<http://louisville.edu/education/degrees/info/bachelors/>) with a minimum 2.75 Grade Point Average (official transcripts (<http://louisville.edu/education/degrees/info/transcripts/>) required)
- C or better in ENGL 102 (or equivalent)
- C or better in oral communication course
- TOEFL (<http://louisville.edu/education/degrees/info/toefl/>)/IELTS (<https://www.ielts.org/>)/Duolingo (<https://www.duolingo.com/>)
- Professional Writing Requirements (<http://louisville.edu/education/degrees/info/mat-mse-professional-statement/>)
- Three Letters of Recommendation (<http://louisville.edu/education/degrees/info/lor/>)
- Acceptable interview
- Signed Professional Code of Ethics/Technology User Agreement/Statement of Understanding of Admissions Guidelines

Questions about admission should be directed to teacher@louisville.edu (<http://louisville.edu/cgi-bin/uofl.mail?teacher>).

Admission is competitive. Candidates who meet minimum academic requirements are not guaranteed admission to the program.

Program Requirements

Alternative Route in Special Education, Concentration in Moderate/Severe Disabilities P-12 (MAT)

Code	Title	Hours
Student Characteristics		
EDSP 540	Introduction to Exceptional Children	3
EDSP 594	Foundational Concepts in Intellectual and Physical Disability	3
Pedagogy		
EDSP 520	Assessment of Students with Moderate/Severe Disabilities	3
EDSP 609	Moderate/Severe Disabilities Curriculum and Methods I	3
EDSP 611	Moderate/Severe Disabilities Curriculum and Methods II	3
EDSP 614	Transition Programs and Services for Children and Youth with Disabilities	3
EDSP 644	Applied Behavior Analysis	3
EDSP 518	Teaching Reading Special Education P-12	3
EDSP 546	Behavior Analytic Approach to Communication	3
EDSP 570	Autism: Introduction and Understanding	3
EDSP 635	Moderate and Severe Disabilities Practicum	3

EDSP 647	Teaching Mathematics to Students with Disabilities	3
Research		
EDSP 697	Topical Seminar (Single Case Designs for Evaluating Specialized Instruction - Must be taken in last 3 hours)	1-3
EDSP 697	Topical Seminar (Applications of Single Case Designs - Must be taken in last 3 hours)	1-3
Minimum Total Hours		39

Mid-Point Assessment: Completion of all courses listed above; satisfactory dispositions assessment; Cumulative GPA of 3.0 or higher; no grade lower than B- in all coursework; satisfactory performance on all Hallmark Assessment Tasks; Target performance or better on all rubrics.

Degree Assessment: Cumulative GPA of 3.0 or higher; grade no lower than B- in all coursework; satisfactory performance on all Hallmark Assessment Tasks; Target performance or better on all rubrics.

Certification Assessment: Satisfactory dispositions assessment; passing scores on required PRAXIS exams; completion of degree requirements.

Degree Candidacy: If not enrolled during the semester in which you are graduating, you will need to register for a degree candidacy as outlined in General Policies, Procedures and Requirements (<http://catalog.louisville.edu/archive/2023-2024/graduate/general-policies-procedures-requirements/>).

Praxis Disclaimer: Teacher certification requirements are subject to change. Before registering for certification test(s), please refer to the Education Professional Standards Board (EPSB) website at epsb.ky.gov (<http://www.epsb.ky.gov/>) or ets.org/praxis/ky (<http://ets.org/praxis/ky/>) for current requirements.

The MAT in Special Education Concentration in Moderate/Severe Disabilities (Alternative Certification) program prepares students to meet the requirements for certification and/or licensure. If you plan to pursue professional licensure or certification, you should first determine your state's criteria for examination and licensure to see how/if our program meets those requirements prior to enrollment. We recommend that you also contact your state's licensing board directly to verify that the requirements have not changed recently and to answer any questions especially those regarding additional requirements beyond the degree.

More information about certification or licensure is available at the following website: <https://louisville.edu/oapa/licensure-information/> (<https://louisville.edu/oapa/licensure-information/>) (you may search by school or by the name of the program then click on 'View Details' to display the information).

For programs with an online option, more information about certification or licensure is available here: <https://louisville.edu/online/About-Us?tab=disclosures> (<https://louisville.edu/online/About-Us/?tab=disclosures>)

Sport Administration (MS)



Master of Science in Sport Administration

Unit: College of Education and Human Development (<https://louisville.edu/education/>) (GE)

Department: Health and Sport Sciences (<https://louisville.edu/education/departments/hss/>)

Program Webpage (<https://louisville.edu/education/degrees/ms-sa/>)

Academic Plan Code(s): SPADMS, SPADMS_O

Program Information

This program can be completed in a traditional classroom format or entirely online (<http://louisville.edu/online/programs/masters/master-of-science-in-sport-administration/>).

The Master of Science in Sport Administration is accredited by the Commission on Sport Management Accreditation (COSMA).

The College of Education and Human Development's Sport Administration program at the University of Louisville prepares students for a variety of management positions in the sport industry. The goals of the faculty and the program are to create an active learning environment for each student and to encourage students to demonstrate a commitment to education, community involvement, and their fellow students. A strong foundation in education, community service, peer networks, and alumni networks is invaluable to students as they prepare to enter the sport industry. Exceptional theoretical and practical knowledge gained through the Sports Administration Program will also provide students with the foundation to become the next generation of leaders, decision makers, and managers in the sport industry.

Degree Summary

Code	Title	Hours
Core Coursework		27
Electives		9
Minimum Total Hours		36

Admission Requirements

Admission will be based on a holistic approach using the following:

- GPA: Students are recommended to have earned a grade-point average of at least 2.75 on a 4.0 point scale in their undergraduate program.
- Prior course work
- Experience
- Two letters of recommendation

- Resume
- A personal statement explaining interest in the program and long-term objectives

In addition, the student must complete the application procedure as required by the Graduate School (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>).

Admission to the program is competitive.

Program Requirements

Code	Title	Hours
Core		
SPAD 604	Sport Finance and Economics	3
SPAD 625	Sport Management and Leadership	3
SPAD 635	Research in Sport Administration	3
SPAD 637	Sport Analytics	3
SPAD 645	Sport Communication Theory and Practice (replaced SPAD 605, effective 2018-19)	3
SPAD 683	Strategic Sport Marketing	3
SPAD 684	Sport Policy	3
SPAD 689	Legal Aspects in the Sport Industry	3
SPAD 692	Internship in Sport Administration	3
Electives		
Select nine (9) credit hours of courses approved by advisor		9
Minimum Total Hours		36

Exit Requirement

To complete the program, students must have a minimum 3.0 GPA. No credit shall be accepted for carrying a grade lower than C (no C-minus).

Structural Engineering (CERT)

Graduate Certificate in Structural Engineering

Unit: Speed School of Engineering (GS) (<https://engineering.louisville.edu>)

Department: Civil and Environmental Engineering (<https://engineering.louisville.edu/academics/departments/civil/>)

Academic Plan Code(s): STENCSE, STENCSEO

Program Information

This program can be completed in a traditional classroom format or entirely online (<http://louisville.edu/online/programs/certificate-programs/structural-engineering/>).

The Civil and Environmental Engineering Department at the J.B. Speed School of Engineering offers an online graduate certificate program in structural engineering to help professionals gain expertise in the field. This certificate provides an excellent opportunity for professionals with a BS in Civil Engineering degree who:

- May have received a job assignment that requires knowledge in structural engineering
- May have fundamental knowledge in Civil Engineering but may need additional skills and formal education in the field of structural engineering
- May need a credential alternative to a full master's degree

- May want to save time and money by choosing to complete a certificate program

The graduate certificate in structural engineering is comprised of four courses (three required core courses and one elective) for a total of twelve (12) credit hours. The online program can be completed within one year.

Credits earned may be applied to the Master of Science in Civil Engineering. Students must apply and be admitted to the master's degree program separately.

Admission Requirements

The admission standards for the Graduate Certificate program in Structural Engineering are as follows:

- All admission applications for the Graduate Certificate program shall include:
 - A completed graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) for the Graduate School,
 - An application fee,
 - Official transcript certifying at least a bachelor's degree. All transcripts not in English must be certified as authentic and translated verbatim into English.
- The minimum requirement for admission is the baccalaureate degree in Civil Engineering or its equivalent from an accredited institution.
- The successful applicant will typically have an undergraduate grade point average of 2.75 or above (on a 4.00 scale).
- International students whose primary language is not English must show English language proficiency. Applicants must either submit an official TOEFL, IELTS or Duolingo score or demonstrate a degree award from an acceptable English language institution. The successful applicant will typically have a total TOEFL score of 80 or higher, an overall IELTS score of 6.5 or higher or a Duolingo score of 105.

Students can enroll in a Graduate Certificate program either as a non-degree seeking student or as a student simultaneously enrolled in a graduate degree program and this graduate certificate program. Students who wish to earn a graduate degree must meet all admission criteria for the degree program.

All students enrolled in a graduate certificate program are expected to make steady and satisfactory progress toward the completion of the certificate. Students who are not enrolled for a period of more than 12 months will be considered to have withdrawn from the certificate program. Students who seek to return after such a period of time must contact the graduate program director.

Certificate Requirements

The following certificate requirements are mandatory for all Graduate Certificate candidates:

- The Certificate Program of Study must be completed with a 3.00 GPA or better for all graduate courses used to satisfy certificate requirements.
- Graduate certificate students must take all certificate course work at the University of Louisville. No transfer credits will be accepted toward a graduate certificate.

Program Requirements

Code	Title	Hours
CEE 522	Fundamentals of Prestressed Concrete	3
CEE 626	Masonry Design	3
or CEE 523	Timber Design	
CEE 524	Bridge Design	3
Approved Engineering Electives (600 level)		
Students will choose one of the following:		
CEE 523	Timber Design	3
CEE 626	Masonry Design	
CEE 665	Pavement Design	
CEE 694	Special Topics in Civil Engineering (Building Information Modeling)	
Minimum Total Hours		12

The Certificate Program of Study must be completed with a 3.00 GPA or better for all graduate courses used to satisfy certificate requirements.

Graduate certificate students must take all certificate course work at the University of Louisville. No transfer credits will be accepted toward a graduate certificate.

Studio Art and Design (MFA)

Master of Fine Arts in Studio Art and Design

Unit: College of Arts and Sciences (<http://louisville.edu/artsandsciences/intro/>) (GA)

Department: Art and Design (<https://louisville.edu/art/>)

Program Website (<http://louisville.edu/art/graduate/mfa-in-studio-art-and-design.html>)

Academic Plan Code(s): SAD_MFA

Program Information

The Department of Art and Design, endowed as the Hite Institute of Art and Design, offers a Master of Fine Arts (MFA) in Studio Art and Design with a 60 credit hour curriculum, structured according to guidelines established by the College Art Association of America (CAA), that is professionally compliant with rigorous evaluation standards, quality and variety of courses, and a faculty mentoring structure that will ensure students accomplish the program objectives and graduate prepared to function effectively and meaningfully in a multicultural and global economy.

The program is selective to allow students generous access to faculty who will give them individual attention, respect their direction, and challenge them to explore new avenues of artistic discovery. Courses are offered in ceramics, drawing, fibers, glass, painting, photography, printmaking, sculpture, mixed media, and new media, and, under the guidance of a faculty mentor, students may choose to focus in one medium or to explore and combine a variety of media. The program also encourages a multidisciplinary approach that challenges students to develop their creative practice in relation to cultural, social, philosophical, and ethical concerns while providing a broad perspective on art and social roles.

Students in the program benefit from the Hite Institute's substantial resources, including multiple galleries on campus and in downtown Louisville, partnerships with local art museums and galleries, and an active speaker and colloquia schedule featuring internationally

recognized artists, prominent curators, and gallery directors. Students will interact with the wider arts community by participating in the university's collaboration with local and regional museums and cultural institutions. Joint projects and internship programs with these organizations strengthen ties between the university and the community and give students unique opportunities to participate in civic life.

All MFA students receive a scholarship or a teaching assistantship.

Admission Requirements

Successful applicants will have a superior academic background and a strong commitment to art. MFA students are expected to have a thorough understanding of the principles of form, proficiency in various media and technical skills, as well as a fluency in language and discourse in historic and contemporary contexts.

The minimum requirements for admission are:

- an undergraduate degree in studio art from an accredited college or university
- with a minimum of 48 credit hours of undergraduate work in studio courses and
- twelve (12) credit hours in art history courses.
- A BFA in Studio Art is recommended.
- Applicants must have a minimum undergraduate grade point average of 3.0 on a 4.0 scale.
- Applicants must present a portfolio of work that shows technical and conceptual competency and demonstrates the promise necessary to succeed.

Students who do not meet the minimum credit requirements in undergraduate-level courses (such as those who have completed a BA rather than a BFA degree) will be required to address any deficiencies by taking undergraduate courses before admission to the program. These courses will not count toward the requirements for the MFA degree. Students must maintain a 3.0 GPA in all coursework, including undergraduate courses taken to remove deficiencies.

Application Requirements

- a. Applicants to the MFA program must fulfill the general admission requirements of the College of Arts and Sciences. To meet the College of Arts and Sciences requirements applicants must hold a bachelor's degree from an accredited institution with a grade point average of 3.0 on a 4.0 scale and have completed an undergraduate major or the equivalent in the intended field of study.
- b. Applicants must submit the following to the Graduate School:
 - i. An online Graduate Application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>)
 - ii. An application processing fee
 - iii. At least two letters of recommendation specific to the program
 - iv. Official transcripts of all college work.
 - v. The GRE is not required for application to the MFA program. However, all applicants for whom English is a second language must also submit official TOEFL scores of 79 or higher on the internet-based test, and 213 or higher on the computer-based test. English proficiency can also be met by submitting official IELTS scores of at least 6.5 overall band score from the academic module exam or an official Duolingo overall score of 105. Students holding a bachelor's or advanced degree from an

accredited institution in the United States may be exempt from this requirement.

- vi. In addition, applicants must have completed a minimum of 48 credit hours of undergraduate work in studio art courses and twelve (12) credit hours in art history courses.
- c. Applicants must submit the following additional materials directly to the Hite Institute of Art & Design, Department of Art & Design, via SlideRoom (\$10 fee). Access the online Slideroom Application Portal here: hite.slideroom.com/ (<https://hite.slideroom.com/>):
 - i. A portfolio of 20 images that demonstrates competence in conceptual and technical skills;
 - ii. An Artist's Statement relevant to the submitted artwork of no more than 500 words;
 - iii. A Statement of Intent of no more than 500 words detailing the applicant's educational and professional goals in the field of Art and Design;
 - iv. A resume (no longer than two pages).

Program Requirements

The MFA program requires a minimum total of 60 credit hours (31 credit hours must be at the 600 level).

Upon entering the MFA program, the student may choose to follow either the three-year program or the two-year accelerated program and will select an advisor/mentor with whom he/she/they will develop a plan of study. In consultation with this mentor, the student will select courses that follow this plan and ensure timely progress toward graduation. The instructor of each course will evaluate the student's level of achievement and progress in that particular class. Additionally, the student's progress will be reviewed and evaluated in each of the two required seminar courses. Each student's faculty mentor will, on a regular basis, review the progress of the students they are supervising and provide the information necessary for the Director of Graduate Studies for Studio Art and Design to provide an annual review for the Graduate School.

For students enrolled in the three-year program, upon completion of the first year and a minimum of 18 credit hours, and again upon completion of the second year and a minimum of 36 credit hours, the student will undergo an MFA review where their progress will be evaluated by a committee comprised of a minimum of three members of the faculty. The MFA student's faculty mentor will serve as chair of the committee. Students enrolled in the two-year program will undergo the above MFA review upon completion of the first year and a minimum of 30 credit hours. Students who receive a favorable evaluation will be allowed to continue in the program and prepare a body of artwork for their thesis exhibition. Students who do not pass an MFA Review will be re-evaluated in the following semester. Students who receive two unsatisfactory evaluations may be recommended for dismissal.

Each MFA candidate will work closely with his/her/their mentor to develop a body of work for the thesis and exhibition. During the last semester of study, the student must demonstrate artistic accomplishments through a thesis exhibition, a written thesis, and a final oral exam. The thesis committee will evaluate the student's achievement and successful completion of the MFA program.

Required Coursework

Code	Title	Hours
Graduate Seminar Requirements		6
ART 600	Graduate Seminar (first semester)	

ART 689	MFA Seminar (third semester)	
Teaching, Internship/Service Learning, Professional Development		3-6
ART 696	Teaching Internship I (second semester, prior to receipt of a GTA)	
ART 697	Teaching Internship II (third semester, taken after receipt of a GTA)	
ART 698	Internship in Studio Art (second semester) ¹	
ART 688	Professional Development (second semester)	
Studio Art Practice²		9
ART 690	MFA Projects (second semester)	
ART 690	MFA Projects (third semester)	
ART 690	MFA Projects (fourth semester)	
Studio Art Courses³		21-24
ART 500/600 level		
Art History and Art Theory Courses⁴		9
ARTH 642	Theories & Methods in the Visual Arts (first semester)	
ARTH 500/600 level		
500/600 level elective		
Cultural Studies electives outside the Department		6
TWO (2) 500/600 level electives outside the department (Outside department electives must be determined in consultation with the mentor)		
MFA Thesis Project		3
ART 699	MFA Thesis Project	
Minimum Total Hours		60

Satisfactory progress toward the degree requires successfully performing a number of activities, including regular enrollment in graduate courses, consistent satisfaction of course requirements within given time limits, and maintenance of an appropriate grade point average (minimum 3.0).

¹ Students who do not choose to teach select two (2) credit hours of ART 698 instead of ART 696 in their second semester and take a three (3) credit hour studio course in place of ART 697 in their third semester.

² ART 690 is required in the second, third, and fourth semesters.

³ Students who choose not to teach select a three (3) credit hour studio course in place of ART 697 in their third semester.

⁴ A minimum of six (6) hours must be in Art History (ARTH). ARTH 642 is required and must be taken in the first semester. The ARTH elective may be taken online or at another university with the department chair's approval.

Teaching and Learning (LEADMEd)

Master of Education in Teaching and Learning (LEADMEd)

Unit: College of Education and Human Development (<http://louisville.edu/education/>) (ED)

Departments: Elementary, Middle and Secondary Teacher Education (<https://louisville.edu/education/departments/mise/>) and Special Education, Early Childhood, and Prevention Science (<https://louisville.edu/education/departments/sped/>)

Program Website (<https://louisville.edu/education/degrees/med-tl/>)
Academic Plan Code(s): See Degree Requirements tab.

Program Information

This program can be completed in a traditional classroom format or entirely online (<http://louisville.edu/online/programs/masters/master-of-education-in-teacher-leadership/>).

The Master of Education in Teaching and Learning at the University of Louisville was created in collaboration with P-12 classroom teachers, school district specialists, university faculty and school administrators to enhance the skills, knowledge and expertise of the Rank III certified Kentucky teacher, who has earned a bachelor's degree and wants to build his or her capacity to be a leader in the classroom, school and district.

This program may be taken online, face-to-face, or as a hybrid.

Concentration Areas

The curriculum provides opportunities for customization including endorsements, concentrations, or certificates within the program. Concentration options include:

- Interdisciplinary Early Childhood Education
- Elementary Education
- Middle Grades Education
- Secondary Education
- Content Area or Teaching Specialty
- Special Education Core
- Autism
- Learning and Behavior Disorders (for teachers already certified in Special Education)
- Moderate and Severe Disabilities (for teachers already certified in Special Education)

Concentration coursework is selected by the student in consultation with the faculty advisor.

Program Highlights

- Individualized to meet professional goals
- Based on three levels of leadership development
- Specialized courses specific to content areas and grade levels
- Preparation pathway to National Board Application
- Courses taught by nationally recognized faculty
- Focused on meeting needs of diverse learners
- Emphasizes coaching and mentoring
- Places your classroom and school as the focus of course discussions and assessments

Admission Requirements

Applicants to the Master of Education in Teacher Leadership online program must first submit the *Online Graduate Application for Admission* through the Graduate School (<http://graduate.louisville.edu/apply/>).

Applicants must also submit the following:

- **Online Graduate Application for Admission** (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>)
- **Application fee** (non-refundable)
- **Valid Kentucky Teaching Certificate** or **Statement of Eligibility** for candidates outside Kentucky (<http://louisville.edu/online/programs/masters/master-of-education-in-teacher-leadership/apply/#outky>).

- If you are certified in Kentucky, please indicate that on your application. You are not required to submit this documentation as we have access through the Education Professional Standards Board.
- If you are certified in another state, please read the Out of State (<http://louisville.edu/online/programs/masters/master-of-education-in-teacher-leadership/apply/#outky>) disclaimer below.
- **Two letters of recommendation** – please list the email addresses for two recommenders in the online application. Recommenders will receive instructions and forms that they will complete online.
- **Signed code of ethics/technology statement** – use Professional Code of Ethics and CEHD Technology Agreement form [PDF] (<http://louisville.edu/education/degrees/files/ethics-tech-form-08.pdf>). Please upload this document to your online application.
- **Current Resume**
- **Professional Writing Requirements** - please complete the following and upload with your application. Each essay should be double-spaced (Times New Roman 12 point font) and no more than three pages.

Essay #1

In what ways has your cultural heritage and background influenced the way you teach, and impacted your interactions with others who come from a different cultural background? Describe an example of an injustice or inequity that you witnessed, experienced, or became aware of during teaching - and your response at that time. Then, explain how you would respond if it occurred again. Finally, explain how you support respect for diversity in your classroom, and how you demonstrate a commitment to social justice and equity when teaching.

Essay #2

Please review the Professional Dispositions Rubric [PDF] (<http://louisville.edu/education/degrees/forms/dispositions-rubric.pdf>) and consider how you would evaluate your areas of strength as well as those for potential growth in each of the categories. In your essay, please identify three categories that you would rate yourself as "target" or "exemplary" and explain why. Then, identify one area for professional growth, and explain how you envision this program supporting your growth in this area.

- **GRE scores** – not required for those with a 2.75 minimum undergraduate GPA
 - If your cumulative GPA is below 2.75 or for more information, please contact our academic advisor at betty.hampton@louisville.edu. (<http://louisville.edu/cgi-bin/uofl.mail?betty.hampton>) regarding GRE minimum scores requirements.
- **Official transcripts** for any undergraduate work (minimum GPA of 2.75 preferred) and any graduate work (minimum GPA of 3.0 preferred)

Please have transcripts sent to:

Graduate School
University of Louisville
Louisville, KY 40292

For electronic transcripts, please have them sent to: gradadm@louisville.edu (<http://louisville.edu/cgi-bin/uofl.mail?gradadm@louisville.edu>)

Note: Meeting GRE score and/or GPA minimums does not guarantee admission to the program.

Out-of-State Students

Out-of-state prospects who have teacher certification should be advised that we cannot guarantee the program will meet licensure, salary, advancement or other requirements in their state. As part of the admission process, we will require a written statement confirming their interest in the program for personal development and they understand the program is designed to meet Kentucky certification requirements only. For more information, please contact our academic advisor at betty.hampton@louisville.edu. (<http://louisville.edu/cgi-bin/uofl.mail?betty.hampton>)

International Students

Applicants who have attended a college or university outside of the United States are also required to submit an evaluation of their transcript through either WES (World Education Services (<http://wes.org/>)) or ECE (Educational Credential Evaluators (<http://ece.org/>)). Please note that transcript evaluations can sometimes take several weeks.

- **TOEFL/IELTS/Duolingo** – required of all foreign students from countries in which English is not the native language.
 - Students who hold a baccalaureate or advanced degree from an accredited institution in the U.S. are exempt from this requirement.

Enrollment Requirements

Upon admission to the program, students will be assigned a faculty advisor and will work collaboratively with that advisor to complete any additional requirements needed before enrolling.

Program Requirements

Master of Education in Teaching and Learning

Academic Program Code(s): LEADMEDCON, LEDMEDCOO, LEADMEDELE, LEADMEDIEC, LEADMEDMID, LEADMEDSEC

Code	Title	Hours
Teaching and Learning - Level I		
EDAP 637	Using Assessment to Improve Student Achievement	3
EDAP 638	Instructional Strategies for Diverse Learners	3
EDSP 639	Education Research in P-12 Setting	3
<i>Mid-point Assessment</i>		
Successful completion of 15 credit hours; scored Target or better on Rubrics for Advanced Candidates including dispositions assessment, minimum GPA of 3.0.		
Teaching and Learning - Level II		
Concentration Courses ¹		12-15
Elective		0-3
Teaching and Learning - Level III		
EDAP 677	Developing Collaborative Groups: Facilitating, Coaching and Mentoring	3
EDAP 681	Teacher Leadership in Practice	3
Minimum Total Hours		30

Minimum of 18 credit hours in 600-level courses is required.

Transfer credit must be officially accepted by the advisor (maximum of six (6) credit hours); final acceptance is dependent upon receipt of official transcripts.

A maximum of nine (9) credit hours taken in non-degree status can be applied toward a master's degree (upon approval of advisor).

All courses must be completed within six years of admission to the program.

Exit Assessment

Successful completion of all required coursework; scored Target or better on Rubrics for Advanced Candidates including dispositions assessment; minimum 3.0 GPA with no grade lower than C.

Degree Candidacy

Students not enrolled during the semester in which they intend to graduate must register for degree candidacy as outlined in the Graduate Catalog (<http://catalog.louisville.edu/archive/2023-2024/graduate/general-policies-procedures-requirements/>).

¹ Concentration coursework is selected in consultation with the student's faculty advisor.

Master of Education in Teaching and Learning—Special Education

Academic Program Code(s): LEADMEDAUT, LEADMEDAUI, LEADMEDSPE, LEADMEDSPO

Code	Title	Hours
Teaching and Learning - Level I		
EDSP 639	Education Research in P-12 Setting	3
EDSP 644	Applied Behavior Analysis	3
EDSP 669	Single Case Research Methods and Designs	3
<i>Mid-point Assessment</i>		
Successful completion of 15 credit hours; scored Target or better on Rubrics for Advanced Candidates including dispositions assessment, minimum GPA of 3.0.		
Teaching and Learning - Level II		
Concentration Courses ¹		15
Teaching and Learning - Level III		
EDSP 652	Academic and Behavior Response to Intervention	3
EDSP 653 or EDSP 687	Practicum in Applied Behavior Analysis Practicum/Action Research	3
Minimum Total Hours		30

Minimum of 18 credit hours in 600-level courses is required.

Transfer credit must be officially accepted by the advisor (maximum of six (6) credit hours); final acceptance is dependent upon receipt of official transcripts.

A maximum of nine (9) credit hours taken in non-degree status can be applied toward a master's degree (upon approval of advisor).

All courses must be completed within six years of admission to the program.

Exit Assessment

Successful completion of all required coursework; scored Target or better on Rubrics for Advanced Candidates including dispositions assessment; minimum 3.0 GPA with no grade lower than C.

Degree Candidacy

Students not enrolled during the semester in which they intend to graduate must register for degree candidacy as outlined in the Graduate Catalog (<http://catalog.louisville.edu/archive/2023-2024/graduate/general-policies-procedures-requirements/>).

¹ Concentration coursework is selected in consultation with the student's faculty advisor.

Concentration Requirements

Concentrations in the MEd in Teaching and Learning consist of 12-15 credit hours of coursework selected in consultation with the student's faculty advisor.

Teaching English as an International Language - TEIL (CERT)

Graduate Certificate in Teaching English as an International Language

Unit: College of Education and Human Development (<https://louisville.edu/education/>)

Program Webpage (<https://louisville.edu/online/programs/certificate-programs/certificate-in-teaching-english-as-an-international-language/>)

Department: Elementary, Middle and Secondary Teacher Education (<https://louisville.edu/education/departments/mise/>)

Academic Plan Code(s): TEILCILO

Program Information

This program is completed entirely online (<http://louisville.edu/online/programs/certificate-programs/certificate-in-teaching-english-as-an-international-language/>).

The twelve (12) credit hour graduate certificate program in Teaching English as an International Language (TEIL) trains candidates outside of the teacher education programs who wish to teach English language learners in a variety of settings where specialization in English Language Learners is required but a teaching license/certification is optional/not required.

These contexts include teaching/tutoring English language learners (both in U.S. and abroad); working with humanitarian organizations that outreach to refugee and immigrant populations; teaching English in private/parochial schools where students are non-native speakers of English. The program provides training to completers who would use this skill set to equip language learners with the English language skills needed to strengthen themselves and their communities, address pressing social concerns, and ultimately, enact social change.

The learning outcomes of the Graduate Certificate in Teaching English as an International Language program are to provide students with:

- The ability to analyze the context of teaching English outside of the United States.
- A mastery of the various teaching methods and approaches used to teach English.
- The role of English when used both locally and globally.

- d. Considerations of the dynamic between language and power in society.
- e. An understanding of the differences between first and second language acquisition.
- f. The connections between theoretical and applied linguistics.

Admission Requirements

The admission standards for the graduate certificate in Teaching English as an International Language are as follows:

- A completed Graduate application (<https://louisville.edu/graduate/apply/>);
- Application fee;
- Official transcript(s) for all previous post-secondary coursework. All transcripts not in English must be certified by an official agency as authentic and translated verbatim into English.
- The minimum requirement for admission is the baccalaureate degree or its equivalent from an accredited institution or current enrollment in a graduate program at the University of Louisville.
- The successful applicant will have an undergraduate grade point average of 3.0 or above (on a 4.00 scale).
- Applicants are required to submit a 500-word essay outlining their rationale for pursuing this certificate as part of their application package.
- International students whose primary language is not English must show English language proficiency. These applicants must either submit an official TOEFL, IELTS or Duolingo score, or hold a baccalaureate degree award from a U.S. Department of Education recognized English language institution.
- The successful applicant will have a total TOEFL score of 80 or higher on the internet based test, 213 or higher on the computer-based test for verification of English proficiency. English proficiency can also be met by submitting an official IELTS score of 6.5 or higher on the academic module or Duolingo score of 105.

Students can be simultaneously enrolled in another University of Louisville graduate degree program and this graduate certificate program.

Certificate Requirements

All students enrolled in the graduate certificate program are expected to make steady and satisfactory progress toward the completion of the certificate by taking at least one course each academic semester (excluding Winter and Summer sessions). Students who are not enrolled for a period of one academic calendar year will be considered to have withdrawn from the certificate program and must re-apply for re-admission into the program.

The certificate program of study must be completed with a 3.00 GPA overall with a grade of B-minus or better for all graduate courses used to satisfy certificate requirements.

Graduate certificate students must take all certificate course work at the University of Louisville. No transfer credits will be accepted toward this graduate certificate program.

Coursework

Code	Title	Hours
EDAP 518	Survey of Linguistics for Educators	3
EDAP 525	World Englishes	3

EDAP 530	Language, Society & Power	3
EDAP 535	Teaching English as an International Language	3
Minimum Total Hours		12

Theatre Arts (MFA)

Master of Fine Arts in Theatre Arts

Unit: College of Arts and Sciences (<https://louisville.edu/artsandsciences/>) (GA)

Department: Theatre Arts (<http://louisville.edu/theatrearts/>)

Program Website (<http://louisville.edu/theatrearts/graduates/>)

Academic Plan Code(s): TA_MFA

Program Information

Dedicated to Art in Action and offering the only Graduate Certificate in African American Theatre in the United States, our Master of Fine Arts in Performance program offers a three-prong approach. We train actors to act, teach, and make theatre that resonates locally, nationally, and internationally. Our students push boundaries of thinking and challenge conventions of theatre and society through exploration of classical, contemporary, and global dramatic forms. Marrying theory, practice, and engaged outreach, we encourage the application of research, creativity, and sustainability in embodied, socially-conscious performance.

The MFA in Performance offers a three-year course of study that includes classes in acting, movement, voice, drama, and performance theory. Students perform in shows directed by faculty and guest artists and staged in our two main theatres. They also perform in our Repertory Company's touring production and may mount their own performance projects. The Graduate Certificate in African American Theatre, which can be completed alongside the MFA in Performance, features classes in the craft and theory of acting and directing African American theatre.

The African American Theatre Program, founded in 1993, is integral to the Department of Theatre Arts. Further information about the Graduate Certificate in African American Theatre (<http://catalog.louisville.edu/archive/2023-2024/graduate/programs-study/graduate-certificate-african-american-theatre/>) can be found in the Graduate Catalog.

Admission Expectations

- Students must submit an online graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) and submit all required documentation to the Graduate School.
- Evidence of a Bachelor's Degree and 3.0 cumulative grade point average (GPA).
- Audition at the University of Louisville, at a regional or national conference site, or through a video submission
- Transcripts of all undergraduate and (if applicable) graduate work
- Two letters of recommendation
- Personal Statement (500-800 words, double-spaced)
- Department committee reviews application materials and makes a recommendation to the Graduate School.
- All applicants are automatically considered for Graduate Teaching or Research Assistantships that include full tuition, stipend, and health insurance for the academic year (August–May).

Program Requirements

MFA candidates must complete the course requirements listed below. Students are paired with a faculty advisor to review their progress at the end of each semester, evaluating coursework, professionalism, performance projects, and any GTA responsibilities.

Code	Title	Hours
Performance Courses		42
TA 624	Acting for Camera	
TA 691	Graduate Acting I	
TA 692	Graduate Acting II	
TA 693	Graduate Acting III	
TA 694	Graduate Acting IV	
TA 695	Graduate Acting V	
TA 686	Graduate Movement I	
TA 687	Graduate Movement II	
TA 688	Graduate Movement III	
TA 689	Graduate Movement IV	
TA 681	Graduate Voice I	
TA 682	Graduate Voice II	
TA 683	Graduate Voice III	
TA 684	Graduate Voice IV	
Theatre Arts Elective (at the 500+ level, minimum 3 credit hours)		
Academic Courses		12
TA 571	Playscript Interpretation - WR (http://catalog.louisville.edu/undergraduate/general-education-requirements/)	
TA 555	Special Topics in Theatre	
TA 620	Performance Theory	
TA 664	Approaching African-American Theatre	
Related Coursework		8
TA 610	Introduction to Graduate Study in Theatre	
TA 611	Theatre Pedagogy	
TA 654	Independent Study in Community Service	
Elective (at the 600+ level, outside of Theatre Arts, minimum 3 credit hours)		
Performance Projects		10
TA 625	MFA Performance Project I	
TA 626	Thesis Performance	
TA 600	Thesis Guidance	
Minimum Total Hours		72

Transportation Engineering (CERT)

Graduate Certificate in Transportation Engineering (TRENCTE)

Unit: Speed School of Engineering (GS) (<https://engineering.louisville.edu>)

Department: Civil and Environmental Engineering (<https://engineering.louisville.edu/academics/departments/civil/>)

Academic Plan Code(s): TRENCTE, TRENCTEO

Program Information

This program can be completed in a traditional classroom format or entirely online (<http://louisville.edu/online/programs/certificate-programs/transportation-engineering/>).

The Civil and Environmental Engineering Department at the J.B. Speed School of Engineering offers an online graduate certificate program to help professionals gain proficiencies in the field of transportation engineering. This certificate provides an excellent educational opportunity for engineers with a BS in Civil Engineering who:

- May have received a job assignment that requires knowledge in transportation engineering;
- May have fundamental knowledge in civil engineering but may need additional skills and formal education in the field of transportation engineering;
- May need an alternative to a full master's degree; or
- May want to save time and money by choosing to complete a certificate program.

The Graduate Certificate in Transportation Engineering program is comprised of four courses (three required core courses and one elective) for a total of twelve (12) credit hours. The online program can be completed within one year.

Credits earned may be applied to a master's degree in Civil Engineering. Students must apply and be admitted to the master's degree program separately.

Admission Standards

The admission standards for the Graduate Certificate program in Transportation Engineering are as follows:

- All admission applications for the Graduate Certificate program must include:
 - A completed graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) for the Graduate School,
 - An application fee, and
 - Official transcript certifying at least a bachelor's degree. All transcripts not in English must be certified as authentic and translated verbatim into English.
- The minimum requirement for admission is a baccalaureate degree in Civil Engineering or its equivalent from an accredited institution.
- The successful applicant will typically have an undergraduate grade point average of 2.75 or above (on a 4.00 scale).
- International students whose primary language is not English must show English language proficiency. Applicants must either submit an official TOEFL, IELTS or Duolingo score, or demonstrate a degree award from an acceptable English language institution. The successful applicant will typically have a total TOEFL score of 80 or higher, an overall IELTS score of 6.5 or higher or a Duolingo score of 105.

Students can enroll in a Graduate Certificate program either as a non-degree seeking student or as a student simultaneously enrolled in a graduate degree program and this graduate certificate program. Students who wish to earn a graduate degree must meet all admission criteria for the degree program.

All students enrolled in a graduate certificate program are expected to make steady and satisfactory progress toward the completion of the certificate. Students who are not enrolled for a period of more than 12 months will be considered to have withdrawn from the certificate program. Students who seek to return after such a period of time must contact the graduate program director.

Certificate Requirements

Code	Title	Hours
Core Courses		
CEE 560	Traffic Engineering	3
CEE 562	Geometric Design of Highways	3
CEE 664	Fundamentals of Intelligent Transportation Systems	3
Approved electives		
Students will choose one of the following:		3
CEE 660	Transportation Planning and Urban Development	
CEE 661	Environmental Analysis of Transportation Systems	
CEE 662	Airport Planning & Design	
CEE 663	Advanced Traffic Operations	
CEE 665	Pavement Design	
Minimum Total Hours		12

The certificate program of study must be completed with a 3.00 GPA or better for all graduate courses used to satisfy certificate requirements.

Graduate certificate students must take all certificate course work at the University of Louisville. No transfer credits will be accepted toward a Transportation Engineering graduate certificate.

Urban and Public Affairs (PhD)



Doctor of Philosophy in Urban and Public Affairs

Unit: College of Arts and Sciences (<https://louisville.edu/artsandsciences/>) (GA)

Department: Urban and Public Affairs (<https://louisville.edu/upa/>)

Program Website (<https://louisville.edu/upa/programs/phd/>)

Academic Plan Code(s): UPA_PHD

Program Information

The PhD in Urban and Public Affairs is an interdisciplinary degree that prepares graduates for careers in teaching and research, policy analysis, public administration, land use and environmental planning, and economic development. Three field areas are offered: Public Administration, Urban Planning, and Sustainability.

Students are required to complete 60 credit hours of study, of which twelve (12) credit hours are dissertation research. Students must pass a qualifying examination before commencing formal dissertation work. Students should consult the Program Guidelines for details.

Academic Policies

Waivers And Prerequisites

Students who have recently and satisfactorily completed equivalent courses elsewhere may request that up to twelve (12) credit hours of coursework count towards their 60 credit hours of required PhD classes. Students who are not prepared for advanced study or do not hold the prerequisites for a particular course will be required to complete remedial work. Such courses do not count toward degree credit. Students should consult the Program's Student Guide (<http://louisville.edu/upa/programs/phd/>) for details.

Dismissal and Academic Standing

Any student with a grade point standing below 3.0, or experiencing similar academic problems, will be placed on academic probation by the Graduate School. Students are ordinarily not permitted to continue on academic probation for more than one semester. Students not rectifying these academic problems after one semester will be recommended for dismissal. In addition, students receiving more than two grades below a B-minus in any graduate-level course (600 level or above) will be dismissed from the program. No grade below a C-minus will be counted towards the fulfillment of degree requirements. The Program Director will review the performance of students each semester to ensure students are making satisfactory progress. Students not making satisfactory progress are subject to dismissal from the program.

Students who do not complete all program requirements within four years of reaching doctoral candidacy status ordinarily will be dismissed from the program.

Qualifying (Comprehensive) Exam

To qualify for PhD candidacy, students must satisfactorily complete a Comprehensive (or Qualifying) Examination. Students must sit for this exam as soon as they are eligible. The Comprehensive (Qualifying) Examination is held in summer each year.

Consult with the Program Director and refer to the Program's Student Guide (<http://louisville.edu/upa/programs/phd/>) for details about the examination.

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Admission Requirements

Students must complete the Online Graduate Application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>) for admission and submit all original documents required for admission to the Graduate School.

The recommended qualifications for admission to the Urban and Public Affairs doctoral program are as follows:

- Bachelor's degree with at least a 3.0 GPA (on 4.0 scale);
- Master's degree with at least a 3.5 GPA (on a 4.0 scale);
- GRE scores;
- All applicants for whom English is a second language must also submit official TOEFL scores of 79 or higher on the internet-based test, 213 or higher on the computer-based test. English proficiency can also be met by submitting official IELTS scores of at least 6.5 overall band score from the academic module exam or official

Duolingo overall score of 105. Students holding a bachelor's or advanced degree from an accredited institution in the United States may be exempt from this requirement;

- A personal interview with members of the PhD Admissions Committee may be required for applicants not fully satisfying (normal) admissions requirements. Interviews will be conducted online.

Applications must include:

- All transcripts from all institutions attended;
- A statement of purpose of approximately 1000-1500 words, describing the students' background, research interests in Urban and Public Affairs, and intended career goals;
- At least two letters of recommendation (preferably from former professors).

The program gives preference to applicants who intend to study full-time and who can be supported with financial aid (i.e., a Graduate Research Assistantship or a Fellowship). A few (exceptionally qualified) part-time students may be admitted if they can demonstrate they have very flexible schedules, can attend daytime courses, and can fully participate in program and department functions.

Students should consult the Program's Student Guide (<http://louisville.edu/upa/programs/phd/>) for additional details and requirements.

Deadlines

Fall Admissions Deadline: July 15 (before February 1 for a University Fellowship or a Graduate Assistantship)

Spring Admissions Deadline: November 15

Program Requirements

The PhD in Urban and Public Affairs consists of 60 credit hours.

Code	Title	Hours
Core Courses		15
UPA 602	Urban Policy and Governance	
UPA 603	Urban Economics	
UPA 610	Urban Theory and Public Affairs	
UPA 680	Special Topics in Urban and Public Affairs (Advanced Urban Studies)	
UPA 691	Urban Experiential Learning	
Required Field Area Courses		9
UPA 661	Foundations of Public Administration	
UPA 675	Introduction to Sustainability	
UPA 684	Planning Theory & History	
Required Methods Courses ¹		9
UPA 606	Research Design	
UPA 609	Qualitative Methods	
	Advanced Methods Course (3 Credit Hours)	
Field Area Courses		9
<i>Public Administration</i>		
PADM 604	Public Budgeting	
	or PADM 611 Financial Management of Nonprofits	
PADM 605	Public Management	

or PADM 605 Nonprofit Management		
UPA 650	Urban Policy Analysis	
OR		
<i>Sustainability</i>		
SUST 602	Sustainability and the Natural Environment	
UPA 676	Sustainable Social-Ecological Systems	
UPA 679	Environmental Policy	
OR		
<i>Urban Planning</i>		
UPA 683	Land Use Planning	
PLAN 618	Urban Demography and GIS	
PLAN 636	Site Planning	
Electives ¹		6
UPA Elective Course (3 Credit Hours)		
Social Justice-Related Elective Course (3 Credit Hours)		
Dissertation		12
UPA 700	Dissertation Research	
Minimum Total Hours		60

Doctoral Candidacy

After completing all required coursework, including twelve (12) credit hours of dissertation research, and passing the qualifying exam, each student is required to maintain continuous enrollment in DOCT 600 Doctoral Candidacy until they graduate.

Departmental Colloquia

The Department presents colloquia on a variety of urban-related topics 3-4 times per semester. PhD student attendance at these meetings is required.

¹ Courses require approval of the Program Director.

Urban Planning (MUP)

Master of Urban Planning

Unit: College of Arts and Sciences (<https://louisville.edu/artsandsciences/>) (GA)

Department: Urban and Public Affairs (<https://louisville.edu/upa/>)
Program Website (<https://urbanlouisville.org/master-of-urban-planning/>)

Academic Plan Code(s): See Concentration Requirements tab.

Program Information

Fully accredited by the Planning Accreditation Board (PAB) and ranked #23 nationally according in Planning Educators in the 2012 Planetizen guide, the Master of Urban Planning (MUP) Program strives to play an important role in the University of Louisville's urban/metropolitan mission by creating the best possible learning environment for the student whose goal is to become a planning practitioner, by advancing the state of knowledge in the planning field through faculty research, and by bringing that knowledge to bear on the challenges facing the community.

The MUP Program prepares students to work in a wide variety of fields, including land use and environmental planning, urban design, historic preservation, transportation planning, community development, housing planning, economic development planning, real estate development, and sustainability. With the continuing expansion of Louisville and the nation's other metropolitan areas, urban planning is one of the leading

professional fields in terms of demand and job satisfaction, according to surveys by Jobs Rated Almanac and the Encyclopedia of Careers and Vocational Guidance.

Students have the option to specialize in one of two concentration areas: community development or sustainability. Students have the opportunity to benefit from working on real planning problems through the required internship and studio courses. Studio courses are taught at the Urban Design Studio, located in downtown Louisville and operated by the MUP Program.

The degree requires 42 credit hours (two years of full-time study or the equivalent in part-time study), although up to six (6) credit hours of relevant graduate course work may be transferred into the program. Students may enroll on a part-time or full-time basis. Classes are held in the evenings to meet the scheduling needs of persons holding full-time jobs.

Degree Requirements

Code	Title	Hours
Core Coursework		18
Internship and Studio		9
Concentration or Approved Electives in Non-Concentration Option		15
Minimum Total Hours		42

Admission Requirements

Applicants must hold a bachelor's degree (any major is acceptable) and must submit two letters of reference (at least one from someone familiar with the applicant's academic abilities) and a statement of purpose. Graduate Record Examination (GRE) scores are recommended but are not required. Applicants whose native language is not English and who do not hold a degree from a university where the language of instruction is English must submit the results from an English proficiency exam. The minimum acceptable scores are 105 for Duolingo English, 80 for TOEFL, and 6.5 for IELTS.

Admission is competitive; successful candidates have a minimum undergraduate GPA of 3.0 (B).

An application form can be obtained at the program website (<http://louisville.edu/upa/programs/mup/>). All required application materials must first be submitted to the Graduate School (<http://louisville.edu/graduate/apply/>), including the application for admission. Those materials will then be forwarded to the MUP Program for review by the Admissions Committee.

The program will notify the applicant of the Committee's decision.

Program Requirements Master of Urban Planning Degree Program

Code	Title	Hours
Urban Planning Core Courses		18
PLAN 601	Planning Theory & History	
PLAN 603	Urban Economics	
PLAN 604	Applied Research Methods	
PLAN 605	Land Use & Planning Law	
PLAN 618	Urban Demography and GIS	
PLAN 636	Site Planning	
Internship		3

PLAN 606	Internship & Professional Practice	
Capstone		6
PLAN 650	Capstone Studio	
Concentration Area (see tab for coursework)		15
Minimum Total Hours		42

Juris Doctor/Master of Urban Planning Dual Degree Program

The Brandeis School of Law will allow students in the dual degree program to apply nine (9) credit hours of approved courses in urban planning as electives toward the JD degree. The Brandeis School of Law will accept each of these urban planning courses on a pass/fail basis, provided that the student earn at least a B (3.0) in the course. The following MUP courses are approved to be counted as electives toward the JD degree:

Code	Title	Hours
PLAN 601	Planning Theory & History	3
PLAN 607	Land Use Planning	3
PLAN 612	Mediation and Dispute Resolution	3
PLAN 620	Environmental Policy	3
PLAN 609	Public Budgeting	3
PLAN 611	Human Resources Management	3
PLAN 613	Foundations of Public Administration	3
PLAN 624	Urban Transportation Planning	3
PLAN 617	Housing and Community Development	3
PLAN 625	Historic Preservation and Sustainable Practice	3
PLAN 631	Real Estate Principles	3

Any other MUP course approved by the Associate Dean of Student Life at the Brandeis School of Law, upon individual petition by a dual-degree student.

The urban planning program will allow students in the dual degree program to apply nine (9) credit hours of approved courses in law as electives toward the MUP degree. The urban planning program will accept each of these law courses on a pass/fail basis, provided that the student earn at least a C (2.0) in the course. The following JD courses are approved to be counted as electives toward the MUP degree:

- LAW 862 Administrative Law
- LAW 841 Energy Law
- LAW 931 Environmental Law
- LAW 820 Constitutional Law II
- LAW 807 Property II
- LAW 902 Real Estate Transactions
- LAW 839 Water Resources Law and Policy
- Any other JD course approved by the Director of the MUP Program in the School of Urban and Public Affairs, upon individual petition by a dual degree student.

In addition to the above cross-application of urban planning credits toward the JD degree and of law credits toward the MUP degree, students in the dual degree program shall be required to take UPA 678/PADM 688 Land Use and Planning Law, a three (3) credit hour interdisciplinary course cross-listed in both law and urban planning. Land Use and

Planning Law (PADM 688) shall count as a three (3) credit hour graded elective toward the JD degree, and likewise shall count as a three (3) credit hour graded elective toward the MUP degree. To receive MUP credit, the student must earn at least a B (3.0) in the course.

Concentration Requirements

Community Development

Academic Plan Code(s): URPLMUPHCD

Code	Title	Hours
Select five courses from the following:		15
PLAN 614	Real Estate Market Analysis	
PLAN 607	Land Use Planning	
PLAN 622	Urban Design	
PLAN 631	Real Estate Principles	
PADM 611	Financial Management of Nonprofits	
PLAN 680	Special Topics in Urban Planning (Urban Justice & Policy)	
PLAN 624	Urban Transportation Planning	
Minimum Total Hours		15

Sustainability

Academic Plan Code(s): URPLMUPSUS

Code	Title	Hours
Select five courses from the following:		15
PLAN 675	Introduction to Sustainability	
PLAN 607	Land Use Planning	
PLAN 620	Environmental Policy	
PLAN 638	Urban Justice & Policy	
PLAN 676	Sustainable Social-Ecological Systems	
PLAN 680	Special Topics in Urban Planning (Environmental Law)	
UPA 680	Special Topics in Urban and Public Affairs (Water Resources Law & Policy)	
SUST 703	Land and Ecosystem Conservation	
Minimum Total Hours		15

Non-Concentration Option

Academic Plan Code(s): URPLMUP

Code	Title	Hours
Electives		15
Five Urban Planning electives (excludes core requirement courses)		
Minimum Total Hours		15

The Master of Urban Planning program prepares students to meet the requirements for certification and/or licensure. If you plan to pursue professional licensure or certification you should first determine your state's criteria for examination and licensure to see how/if our program meets those requirements prior to enrollment. We recommend that you also contact your state's licensing board directly to verify that the

requirements have not changed recently and to answer any questions especially those regarding additional requirements beyond the degree.

More information about certification or licensure is available at the following website: <https://louisville.edu/oapa/licensure-information> (<https://louisville.edu/oapa/licensure-information/>) (you may search by school or by the name of the program then click on 'View Details' to display the information).

For programs with an online option, more information about certification or licensure is available here: <https://louisville.edu/online/About-Us?tab=disclosures> (<https://louisville.edu/online/About-Us/?tab=disclosures>).

Women's, Gender and Sexuality Studies (CERT)

Graduate Certificate in Women's, Gender and Sexuality Studies

Unit: College of Arts and Sciences (<https://louisville.edu/artsandsciences/>) (GA)

Department: Women's, Gender and Sexuality Studies (<https://louisville.edu/wgs/>)

Program Website (<https://louisville.edu/wgs/graduate-studies/>)

Academic Plan Code(s): WGSTCWG

Program Information

The Women's, Gender and Sexuality Studies graduate certificate is a 15 credit hour program for students who have completed a BS or BA degree in any field. Students with no prior coursework in Women's, Gender and Sexuality Studies may be required to take additional classes in preparation for admission to the certificate program.

Admission Requirements

Admission to the graduate certificate in Women's, Gender and Sexuality Studies is open to any student who has completed a BA or BS degree with a 3.0 overall GPA. Students may pursue the certificate outside the framework of a graduate degree program or in conjunction with a graduate degree program in another University of Louisville department.

Students wishing to pursue the certificate must apply for admission to the Graduate School by:

- Completing the online graduate application (<https://louisville.edu/graduate/apply/>) and submitting the application fee, and
- Submitting an official transcript reflecting previous degrees earned.
- At least two letters of recommendation.

Students must also send directly to Women's, Gender and Sexuality Studies a one-to-two page letter of intent, describing how the Women's, Gender and Sexuality Studies graduate certificate will further their personal or professional goals.

Students wishing to pursue the graduate certificate in conjunction with a graduate degree program in another University of Louisville department should first apply and be admitted to the degree program before applying for admission to the Women's, Gender and Sexuality Studies graduate certificate program.

Program Requirements

- Students must complete a total of 15 credit hours in courses approved for graduate credit in accordance with the policies of the

Graduate School, approved by the Women's, Gender and Sexuality Studies director of graduate studies.

- b. One course among the 15 credit hours must be selected from the list of approved Foundation Courses; 12 hours must be WGST electives. Foundation courses may also be used to satisfy electives.
- c. At least two courses must be at the 600-level.
- d. Coursework toward the graduate certificate in Women's, Gender and Sexuality Studies may also count toward the student's graduate degree.

Code Title Hours
Required Coursework for the Graduate Certificate in Women's, Gender and Sexuality Studies

Choose one of the following Foundation Courses: 3

WGST 556	Feminist Theory - WR (http://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
WGST 604	Community Engaged Research Methods	3
WGST 608	Queer Performance	3
WGST 611	Transnational Feminism	3
WGST 613	U.S. Social Justice Movements of the 20th Century	3
WGST 642	African American Women and the History of Reproductive Justice	3
WGST 644	Black Lesbian Lives	3

Electives in Humanities

WGST 523	Gender and Popular Music - WR (http://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
WGST 547	Language, Race, Class, and Gender	3
WGST 560	Feminist Philosophical Literature	3
WGST 571	Francophone Women Writers - WR (http://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
WGST 593	Topics in Women's, Gender and Sexuality Studies: Humanities	3
WGST 620	Women's Personal Narratives	3
WGST 622	The Body in Popular Media	3
WGST 641	Feminism and Science Fiction	3
WGST 682	Health and Social Justice	3
WGST 689	Independent Study: Women's, Gender and Sexuality Studies-Humanities	3
WGST 692	Advanced Topics in Women's, Gender and Sexuality Studies-Humanities	3

Electives in Social Sciences

WGST 538	Woman and Sport	3
WGST 542	African American Women and the History of Reproductive Justice	3
WGST 558	Women in Developing Countries - WR (http://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
WGST 592	Topics in Women's, Gender and Sexuality Studies: Social Sciences - WR (http://catalog.louisville.edu/undergraduate/general-education-requirements/)	3
WGST 612	Gender, Race, Work, and Welfare	3
WGST 615	Seminar in the Sociology of Disabilities	3
WGST 630	Feminism in Western Civilization	3

WGST 631	Women in the Twentieth Century in Europe and the U.S.	3
WGST 632	History of American Sexualities	3
WGST 633	Women in 19th-Century America	3
WGST 640	Women's Health in Africa	3
WGST 643	Black Women's Voices	3
WGST 645	Southern Women: Black and White	3
WGST 656	Feminist Theory	3
WGST 690	Independent Study: Women's, Gender and Sexuality Studies-Social Sciences	3
WGST 691	Advanced Topics in Women's, Gender and Sexuality Studies-Social Sciences	3

Minimum Total Hours 24

Women's, Gender and Sexuality Studies (MA)

Master of Arts in Women's, Gender and Sexuality Studies

Unit: College of Arts and Sciences (<https://louisville.edu/artsandsciences/>) (GA)

Department: Women's, Gender and Sexuality Studies (<https://louisville.edu/wgs/>)

Program Website (<https://louisville.edu/wgs/graduate-studies/>)

Academic Plan Code(s): WGSTMA; WGSTMA_ACC

Program Information

Master of Arts in Women's, Gender and Sexuality Studies

The Women's, Gender and Sexuality Studies Master of Arts degree program is open to qualified individuals with a bachelor's degree from an accredited college or university. Any undergraduate major is acceptable for admission; however, students without some Women's, Gender and Sexuality Studies background may be required to take preparatory courses before beginning the MA curriculum or in addition to the MA curriculum.

The 37 credit hour interdisciplinary degree program is organized around a 13-credit hour core of four foundation courses and one (1) credit hour research/writing course, and a selection of electives in WGST. In addition, students complete either a thesis, a culminating exam or project, or an applied/creative project.

Faculty in the Women's, Gender and Sexuality Studies Department, as well as faculty in other departments of the university, offer courses in the MA program.

Degree Summary

Code	Title	Hours
Program Core		13
Electives		21-24
Thesis/Project/Exam Option		3-6
Minimum Total Hours		37-43

The Women's, Gender and Sexuality Studies MA may be completed in four semesters (fall/spring). Most courses are offered in late afternoon or evening. Limited summer offerings are also available.

Accelerated BA-BS/MA in Women's, Gender and Sexuality Studies

Women's, Gender and Sexuality Studies majors who are already thinking about pursuing an MA in Women's, Gender and Sexuality Studies can speed up the process by applying some of their undergraduate credit hours toward a master's degree. The basic idea is to take three graduate-level courses/nine (9) credit hours (either 500-level with the additional graduate-level assignments, or 600-level) while still an undergraduate, and then have those credits apply both toward the undergraduate degree and towards an eventual master's degree from the University of Louisville.

Students in the accelerated Master of Arts in Women's, Gender and Sexuality Studies program may take a maximum of nine (9) credit hours for graduate credit, which will also apply to the requirements for the baccalaureate degree. To be considered for admission to the Accelerated Master of Arts in Women's, Gender and Sexuality Studies program, students must:

- Complete an application for admission to the Women's, Gender and Sexuality Studies Master of Arts program (including transcripts, two letters of recommendation, a statement of purpose, and a writing sample) no later than the end of their junior year.
- Have a minimum overall grade point average (GPA) of 3.35, a Women's, Gender and Sexuality Studies GPA of 3.35, and meet all other requirements for admission to the Women's, Gender and Sexuality Studies Master of Arts program.

Students must retain a 3.35 GPA in Women's, Gender and Sexuality Studies during their senior year to remain in the program. Once admitted to the accelerated BA/MA program and starting the graduate work, students are expected to maintain a full graduate load of nine (9) credit hours.

Students in the accelerated BA/MA program must meet all of the MA requirements including receiving at least 18 of their 37 credit hour program in 600-level, courses.

Dual MSSW/MA in Social Work and Women's, Gender and Sexuality Studies

The dual Master of Science in Social Work/Master of Arts in Women's, Gender and Sexuality Studies program recognizes the value of professional education in two interrelated fields and encourages students who have an interest in both Women's, Gender and Sexuality Studies and Social Work to pursue these degrees simultaneously. Social workers and Women's, Gender and Sexuality Studies scholars often seek to address identical or related societal concerns, albeit from different perspectives; understanding both disciplines enhances one's effectiveness in both the analysis of and engagement with contemporary social and cultural issues. Women's, Gender and Sexuality Studies courses strengthen the social worker's understanding of the historical foundations for policies and structures that have an impact on social institutions and human conditions; Social Work courses help Women's, Gender and Sexuality Studies scholars or activists to better understand human behavior, conflict resolution and social welfare institutions. A Women's, Gender and Sexuality Studies and Social Work combination provides the tools of social change for an historic problem of gender inequality and injustice.

The curriculum leading to a dual degree is a 79 credit hour program which combines credits in Women's, Gender and Sexuality Studies and the Kent School of Social Work and Family Science. Students take the core curriculum in both programs, but substitute elective credit hours with MA and MSSW credit hours. In addition, the Kent School of Social Work and Family Science has tailored its second year-long practicum to focus on issues of gender and women, adding that content and experience for the student.

Students must apply and be admitted to both programs in order to pursue the dual degree.

Admission Requirements

Master of Arts in Women's Gender Sexuality Studies

Students wishing to be admitted to the MA in Women's, Gender and Sexuality Studies must meet the following requirements for admission:

- a. Students must meet the admission criteria established by the Graduate School. Submit a complete graduate application (<http://louisville.edu/graduate/futurestudents/apply-materials/application/>), submit official transcripts verifying the receipt of a baccalaureate degree from an accredited institution, and pay application fee.
- b. Students must have a 3.0 GPA in undergraduate work. Provisional admission is possible for students who do not meet this requirement.
- c. Students must submit two letters of recommendation (submitted to the Graduate School). Letters of recommendation must be current (written within the last year), and letter writers must be familiar with the applicant's academic preparation for graduate study. Members of the Women's Gender and Sexuality Studies Graduate Admissions Committee may not be letter writers.
- d. Students must submit one academic writing sample of at least five pages (a paper written as part of the requirements of a university or college course), which should be mailed directly to the Department of Women's, Gender and Sexuality Studies. The Graduate Admissions Committee will determine whether the student has the necessary level of competence in written communication to enter the MA program.
- e. Students must submit a personal statement of one-two pages discussing how the MA in Women's, Gender and Sexuality Studies relates to the student's professional or personal goals (mail directly to the Department of Women's, Gender and Sexuality Studies).

Any undergraduate major is acceptable for admission; however, students without Women's, Gender and Sexuality Studies background may be required to take preparatory courses before beginning the MA curriculum or in addition to the MA curriculum. This will be determined by the Graduate Admissions Committee.

Up to six (6) credit hours of graduate level coursework, A- or B- graded work in Women's, Gender and Sexuality Studies done at another institution may be applied toward the student's University of Louisville degree, upon approval of the director.

Students enrolled in the University of Kentucky or Western Kentucky University graduate certificate programs may transfer up to twelve (12) credit hours of graduate-level A- graded or B- graded work, upon approval of the director.

Students must maintain a 3.0 average in order to be in good standing.

Admission Requirements: Dual MSSW/MA

Students must apply and be admitted to both programs in order to pursue the dual MSSW/MA degree program. Admission requirements for the Kent School of Social Work (<http://catalog.louisville.edu/archive/2023-2024/graduate/programs-study/master-science-social-work/>) can be found on the MSSW page.

Program Requirements for MA

The Women's, Gender and Sexuality Studies M.A. curriculum includes:

- 13 credit hours of Foundation courses; and
- a thesis, non-thesis, or exam option

At least 18 of the 37 credit hours must be in courses at the 600 level.

Code	Title	Hours
Foundation Courses		
WGST 600	Research/Writing in Women's and Gender Studies.	1
<i>Select 4 from the list below</i>		12
WGST 604	Community Engaged Research Methods	
WGST 608	Queer Performance	
WGST 611	Transnational Feminism	
WGST 613	U.S. Social Justice Movements of the 20th Century	
WGST 642	African American Women and the History of Reproductive Justice	
WGST 644	Black Lesbian Lives	
WGST 656	Feminist Theory	
Electives		
<i>Select electives, not chosen in another category (6-21 credit hours based 8-24 on thesis, non-thesis or exam option)</i>		
WGST 513	U.S. Social Justice Movements of the 20th Century	
WGST 558	Women in Developing Countries - WR (http://catalog.louisville.edu/undergraduate/general-education-requirements/)	
WGST 571	Francophone Women Writers - WR (http://catalog.louisville.edu/undergraduate/general-education-requirements/)	
WGST 584	Women in East Asian History	
WGST 591	Topics in Women's, Gender and Sexuality Studies: Social Sciences (recent example: Postcolonial Bodies) ¹	
WGST 593	Topics in Women's, Gender and Sexuality Studies: Humanities ¹	
WGST 603	History of U.S. Feminisms	
WGST 608	Queer Performance	
WGST 609	Women and Medicine	
WGST 612	Gender, Race, Work, and Welfare	
WGST 613	U.S. Social Justice Movements of the 20th Century	
WGST 615	Seminar in the Sociology of Disabilities	
WGST 620	Women's Personal Narratives	
WGST 622	The Body in Popular Media	
WGST 625	Art and Trauma	
WGST 630	Feminism in Western Civilization	
WGST 631	Women in the Twentieth Century in Europe and the U.S.	
WGST 633	Women in 19th-Century America	

WGST 632	History of American Sexualities
WGST 640	Women's Health in Africa
WGST 641	Feminism and Science Fiction
WGST 643	Black Women's Voices
WGST 645	Southern Women: Black and White
WGST 656	Feminist Theory
WGST 682	Health and Social Justice
WGST 689	Independent Study: Women's, Gender and Sexuality Studies-Humanities
WGST 690	Independent Study: Women's, Gender and Sexuality Studies-Social Sciences
WGST 691	Advanced Topics in Women's, Gender and Sexuality Studies-Social Sciences (recent example: Postcolonial Bodies) ¹
WGST 692	Advanced Topics in Women's, Gender and Sexuality Studies-Humanities ¹

Thesis, Non-Thesis, or Exam Option 3-6

Select the thesis or non-thesis option

Thesis Option

WGST 699 Thesis

Non-Thesis Option

WGST 695 Women's, Gender and Sexuality Studies Practicum (or elective, which need not be in WGS)

WGST 698 Master's Degree Project

Exam Option (requires completion of 37 credit hours, plus an exam)

Minimum Total Hours 34-43

Up to six (6) credit hours of graduate level coursework, A- or B-graded **grade** work in Women's, Gender and Sexuality Studies done at another institution may be applied toward the student's University of Louisville degree, upon approval of the director.

Students enrolled in the University of Kentucky or Western Kentucky University graduate certificate programs may transfer up to twelve (12) credit hours of graduate level coursework A- or B- graded work, upon approval of the director.

Students must maintain a 3.0 average in order to be in good standing.

¹ As approved by the director of graduate studies

Program Requirements for Dual MSSW/MA

The Women's, Gender and Sexuality Studies MSSW/MA curriculum includes:

- 13 credit hours of Foundation courses;
- 15 credit hours of WGST electives at the graduate level;
- 51 credit hours of courses at the Kent School

Total 28 credit hours in WGST graduate-level courses

Code	Title	Hours
Foundation Courses		
WGST 600	Research/Writing in Women's and Gender Studies.	1

Select 4 from the list below 12

WGST 604	Community Engaged Research Methods
WGST 608	Queer Performance
WGST 611	Transnational Feminism
WGST 613	U.S. Social Justice Movements of the 20th Century
WGST 642	African American Women and the History of Reproductive Justice
WGST 644	Black Lesbian Lives
WGST 656	Feminist Theory

Electives

Select 5 electives, not chosen in another category: 15

WGST 513	U.S. Social Justice Movements of the 20th Century
WGST 558	Women in Developing Countries - WR (http://catalog.louisville.edu/undergraduate/general-education-requirements/)
WGST 571	Francophone Women Writers - WR (http://catalog.louisville.edu/undergraduate/general-education-requirements/)
WGST 584	Women in East Asian History
WGST 591	Topics in Women's, Gender and Sexuality Studies: Social Sciences (recent example: Postcolonial Bodies) ¹
WGST 593	Topics in Women's, Gender and Sexuality Studies: Humanities ¹
WGST 603	History of U.S. Feminisms
WGST 608	Queer Performance
WGST 609	Women and Medicine
WGST 612	Gender, Race, Work, and Welfare
WGST 615	Seminar in the Sociology of Disabilities
WGST 620	Women's Personal Narratives
WGST 622	The Body in Popular Media
WGST 625	Art and Trauma
WGST 630	Feminism in Western Civilization
WGST 631	Women in the Twentieth Century in Europe and the U.S.
WGST 632	History of American Sexualities
WGST 633	Women in 19th-Century America
WGST 640	Women's Health in Africa
WGST 641	Feminism and Science Fiction
WGST 643	Black Women's Voices
WGST 645	Southern Women: Black and White
WGST 656	Feminist Theory
WGST 682	Health and Social Justice
WGST 689	Independent Study: Women's, Gender and Sexuality Studies-Humanities
WGST 690	Independent Study: Women's, Gender and Sexuality Studies-Social Sciences
WGST 691	Advanced Topics in Women's, Gender and Sexuality Studies-Social Sciences (recent example: Postcolonial Bodies) ¹
WGST 692	Advanced Topics in Women's, Gender and Sexuality Studies-Humanities ¹

Kent School Hours

51

See Kent School for requirements

Minimum Total Hours 79

Up to six (6) credit hours of graduate level coursework, A- graded or B- graded **grade** work in Women's, Gender and Sexuality Studies done at another institution may be applied toward the student's University of Louisville degree, upon approval of the director.

Students enrolled in the University of Kentucky or Western Kentucky University graduate certificate programs may transfer up to twelve (12) credit hours of graduate level coursework A- or B- graded work, upon approval of the director.

Students must maintain a 3.0 average in order to be in good standing.

¹ As approved by the director of graduate studies

Graduate/Emeritus Faculty

Name	Rank	Highest Degree	Department	College or School
Abbott, Jason Paul	Professor*	PhD, Nottingham Trent University (UK), 1998	Political Science	College of Arts & Sciences
Abu-Kwaik, Yousef	Professor*	PHD, SUNY at Buffalo, 1991	Microbiology and	School of Medicine
Abusaleem, Said Kamel	Associate Professor	PHD, University of Kentucky, 2006	Nursing	School of Nursing
Acklin, Amy Ingrid	Professor	PHD, Florida State University, 2009	Performance Studi	School of Music
Adams, Tomarra	Assistant Professor	PhD, University of Louisville, 2004	Pan African Studies	College of Arts & Sciences
Ahuja, Manju	Professor†	PHD, University of Pittsburgh, 1995	Computer Informat	College of Business
Alagaraja, Meera	Associate Professor	PHD, Texas A&M University, 2010	Educational Leade	College of Education and Human Development
Alard, Pascale	Associate Professor	PHD, University of Paris XI, 1992	Microbiology and	School of Medicine
Aldikacti, Marshall, Gul M	Professor	PHD, University of Pennsylvania, 2001	Sociology	College of Arts and Sciences
Alexander, Suraj Mammen	Professor†	PhD, Virginia Polytechnic Institute and State University (Virginia Tech), 1977	Industrial Engineering	JB Speed School of Engineering
Alexander, James E.	Associate Professor	PHD, University of Oklahoma, 1987	Biology	College of Arts and Sciences
Alphenaar, Bruce William	Professor†	PhD, Yale University, 1991	Electrical & Computer Engineering	JB Speed School of Engineering
Altiparmak, Nihat	Associate Professor	PHD, The University of Texas at San Antonio, 2013	Computer Engineer	JB Speed School of Engineering

Amchin, Robert Alan	Professor†	PHD, University of Michigan, 1995	Music	School of Music	Barbee-Cunningham, Anita	Professor [^]	MSW, University of Louisville, 2001	Kent School of So	Kent School of Social Work
Amini, Amir	Professor*	PHD, Univ Michigan - Ann Arbor, 1990	Electrical & Comp	JB Speed School of Engineering	Barrett, Lisa Brady-Hensley	Instructor Term		Kent School of Social Work	Kent School of Social Work
Amos, Delaina A.	Associate Professor	PHD, Univ California - Berkeley, 1996	Chemical Engineer	JB Speed School of Engineering	Batscha, Cathy			Nursing	
Anderson, David Ross	Associate Professor	PHD, University of Pennsylvania, 1995	English	College of Arts and Sciences	Baumgartner, Richard N	Professor [^]	PHD, Univ of TX HSC Houston, 1982	Epidemiology & Po	School of Public Health and Information Sciences
Andrescu, Viviana	Associate Professor	PHD, University of Louisville, 2000	Criminal Justice	College of Arts and Sciences	Baumgartner, Kathy B	Professor*	PHD, Univ of TX HSC at Houston, 1999	Epidemiology & Po	School of Public Health and Information Sciences
Antimisiaris, Demetra Elizabeth	Associate Professor Term	PHARMD, University of the Pacific, 1989	Health Management	School of Public Health and Information Sciences	Baumgartner, Jennifer M	Professor*	PHD, Univ of TX HSC at Houston, 1999	Epidemiology & Po	School of Public Health and Information Sciences
Antle, Becky F	Professor	PHD, University of Louisville, 2002	Kent School of So	Kent School of Social Work	Bay-Williams, Jennifer M	Professor†	PHD, Univ of Missouri-Columbia, 1999	Middle and Second	College of Education and Human Development
Appakalai, Balamurugan			Biochemistry	School of Medicine	Beattie, Blake R.	Associate Professor†	PHD, University of Toronto, 1992	History	College of Arts and Sciences
Archuleta, Adrian J	Associate Professor	PHD, Florida State University, 2010	Kent School of So	Kent School of Social Work	Beattie, Pamela May	Associate Professor	PHD, University of Toronto, 1995	Comparative Human	College of Arts and Sciences
Ashlock, Mary Zychowski	Associate Professor	PHD, Florida State University, 1989	Communication	College of Arts and Sciences	Beggan, James Kevin	Professor	PHD, University of Calif, Santa Barbara, 1989	Sociology	College of Arts and Sciences
Atre, Sundar Vedanarayanan	Professor*	PHD, Penn State Univ Park, 1995	Mechanical Engine	JB Speed School of Engineering	Behrman, Andrea Louise	Professor*	PHD, University of Florida, 1995		School of Medicine
Austin, D. Mark	Professor	PHD, Oklahoma University, 1986	Sociology	College of Arts and Sciences	Berfield, Thomas Austin	Associate Professor	PHD, Univ Illinois - Urbana Champ, 2008	Mechanical Engine	JB Speed School of Engineering
Badia, Antonio Emilio	Associate Professor	PHD, Indiana University, 1997	Computer Engineer	JB Speed School of Engineering	Bergman, Mathew John	Associate Professor Term	PHD, University of Louisville, 2012	Educational Leade	College of Education and Human Development
Bai, Lihui	Associate Professor	PHD, University of Florida, 2004	Industrial Engine	JB Speed School of Engineering	Bernstein, Mark L.	Professor	DDS, New York University, 1970		School of Dentistry
Baik, Moon-He	Associate Professor	MFA, University of North Texas, 1988	Fine Arts	College of Arts & Sciences	Berson, Robert E.	Professor	PHD, University of Louisville, 2000	Chemical Engineer	JB Speed School of Engineering
Baixaoli Olmos, Luis	Assistant Professor	PhD, Universitat Jaume I (Spain), 2012	Modern Languages	College of Arts & Sciences	Bertacco, Simona	Professor	PHD, University of Genoa, Italy, 2000	Comparative Human	College of Arts and Sciences
Banerjee, Swagato	Associate Professor	PHD, Tata Institute of Research, 2002	Physics	College of Arts and Sciences	Bertocci, Gina E.	Professor*	PHD, University of Pittsburgh, 1997	Bioengineering†	JB Speed School of Engineering
Banks, Ansyn Pierre	Professor	DMA, Indiana Univ - Bloomington, 2009	Performance Studi	School of Music					

Bertocci, Karen Leigh	Associate Professor Term	PHD, University of Pittsburgh, 2004	Bioengineering	JB Speed School of Engineering	Brandi, Jay T.	Professor	PHD, University of Arizona, 1985	Finance	College of Business
Best, Latrice Evette	Associate Professor	PHD, Penn State University, 2008	Sociology	College of Arts and Sciences	Brehob, Ellen Gail	Associate Professor	PHD, Pennsylvania State University, 1994	Mechanical Engine	JB Speed School of Engineering
Bewley, Lee W	Associate Professor Term	PHD, University of Alabama, Birmingham, 2005	Health Management	School of Public Health and Information Sciences	Brooke, Steven	Assistant Professor	PhD, University of Texas, 2015	Political Science	College of Arts & Sciences
Beyin, Amanuel Yosief	Associate Professor	PHD, State Univ of NY Stony Brook, 2009	Anthropology	College of Arts and Sciences	Brose, Brittany			Audiology	School of Medicine
Biberman, Steven Matthew	Professor	PHD, Duke University, 1998	English	College of Arts and Sciences	Brown, David Norvil	Professor	PHD, Purdue University, 1992	Physics	College of Arts and Sciences
Bickford, Martha E.	Professor	PHD, Duke University, 1989	Anatomical Scienc	School of Medicine	Brown, Garry Roger	Associate Professor	MFA, Memphis State University, 1987	Theatre Arts	College of Arts & Sciences
Biro, Csaba	Associate Professor	PHD, GA Institute of Technology, 2008	Mathematics	College of Arts and Sciences	Brown, Sherri Lynne	Associate Professor	PHD, The University of Tennessee, 2002	Special Education	College of Education and Human Development
Bjorkman, Lisa Danielle	Associate Professor	PHD, New School for Social Research, 2012	Urban & Public Af	College of Arts and Sciences	Brueckner-Collins, Jennifer	Professor	PHD, University of Kentucky, 1997	Anatomical Scienc	School of Medicine
Blakely, Craig H	Professor	PHD, Michigan State University, 1981 MPH, The University of Texas, 1992		School of Public Health and Information Sciences	Buchanan, Rhonda Lee	Professor	PHD, University of Colorado, 1982	Modern Languages	College of Arts and Sciences
Blum, Lisa Marie	Assistant Professor Term	JD, SUNY at Buffalo, 1992 LLM, New York University, 2003	Accountancy	College of Business	Buchanan, Robert Martin	Professor	PHD, University of Colorado, 1980	Chemistry	College of Arts and Sciences
Blum, Mark E.	Professor	PHD, University of Pennsylvania, 1970	History	College of Arts and Sciences	Buckley, David T	Associate Professor*	PHD, Georgetown University, 2013	Political Science	College of Arts and Sciences
Bodduluri, Haribabu	Professor	PHD, Indian Institute of Science, 1983	Microbiology and	School of Medicine	Buie, Delinda Stephens	Professor	MLS, University of Kentucky, 1975	Archives & Specia	University Libraries
Boehm, Beth A.	Professor	PHD, The Ohio State University, 1987	Anatomical Scienc	School of Medicine	Bunck, Julie Marie	Professor	PHD, University of Virginia-Main Campus, 1988	Political Science	College of Arts and Sciences
Borghuis, Bart Gerard	Associate Professor	PHD, Utrecht University, 2003	History	College of Arts and Sciences	Burden, Terry L	Assistant Professor Term	PhD, Southern Baptist Theological Seminary, 1992	Comparative Humanities	College of Arts & Sciences
Bowman, Brad B	Associate Professor	PHD, University of Chicago, 2014	History	College of Arts and Sciences	Burke, Devin Michael Paul	Associate Professor		Music	School of Music
Boyd, Lynn H.	Associate Professor	PHD, University of Georgia, 1999	Computer Information Systems	College of Business	Burton, Nefertiti	Professor Term	MFA, University of Mass - Amherst, 1993	Theatre Arts	College of Arts and Sciences
Bradley, Mary Elizabeth	Associate Professor	PHD, University of Virginia-Main Campus, 1991	Mathematics	College of Arts and Sciences	Buskill, Roger Lyn	Instructor Term		Educational Leade	College of Education and Human Development
Bradshaw, Roger Dean	Associate Professor	PHD, Northwestern University, 1997	Mechanical Engine	JB Speed School of Engineering	Byrd, William Carson	Assistant Professor	PhD, Virginia Polytechnic Institute and State University (Virginia Tech), 2011	Pan African Studies	College of Arts & Sciences

Byrne, Gregory Patrick	Professor	DMA, University of Alabama, 1999	Performance Studies	School of Music	Chen, ShaoYu	Professor	PHD, Fujian Agriculture/Forest University, 1991	Pharmacology and	School of Medicine
Caicedo, Ricardo	Associate Professor	DDS, Colegio Odontologico Colombiano, 1979		School of Dentistry	Cheng, Alan	Assistant Professor Term	PhD, McGill University (Canada), 2003	Biochemistry & Molecular Genetics	School of Medicine
Caldwell, Anne	Associate Professor	PHD, Notre Dame University, 1998	Political Science	College of Arts and Sciences	Chisholm, James S	Associate Professor	PHD, University of Pittsburgh, 2010	Middle and Second	College of Education and Human Development
Callahan, Carolyn Margaret	Professor*	PHD, Michigan State University, 1985	Accountancy	College of Business					
Calvano, Jennifer Ariadne	Assistant Professor	PHD, Univ of Colorado Boulder, 2016	Theatre Arts	College of Arts and Sciences	Chou, Nan-Ting	Associate Professor	PHD, Ohio State University, 1986	Economics	College of Business
Calvert, Tiffany C	Associate Professor	MFA, Rutgers University, 2005	Fine Arts	College of Arts and Sciences	Christopher, Karen	Professor	PHD, University of Arizona, 2000	Sociology	College of Arts and Sciences
Campbell, Bradley A	Associate Professor	PHD, Sam Houston State University, 2015	Criminal Justice	College of Arts and Sciences	Chung, Donghoon	Associate Professor	PHD, Korea University, 2003	Microbiology and	School of Medicine
Carini, Robert Michael	Associate Professor	PHD, Indiana University, 2003	Sociology	College of Arts and Sciences	Chung, Julianne	Assistant Professor	PhD, Yale University, 2015	Philosophy	College of Arts & Sciences
Carothers, Mary Ann	Professor	MFA, Rhode Island School Design, 1996	Fine Arts	College of Arts and Sciences	Clark, Barbara J.	Associate Professor	PHD, University of Texas Dallas, 1992	Biochemistry & Mo	School of Medicine
Carter, Robert E	Associate Professor	PHD, University of Cincinnati, 2007	Marketing	College of Business	Clark, Stephen J.	Professor	DMD, University of Kentucky, 1972		School of Dentistry
Carter, Rachel Kathryn	Assistant Professor	MFA, Virginia Commonwealth Univ, 2013	Theatre Arts	College of Arts and Sciences	Clark, Paul Richard	Assistant Professor	PHD, The University of Texas at San Antonio, 2010	Nursing	School of Nursing
Caruso, John Francis	Professor†	PHD, University of Miami, 1994	Health & Sports S	College of Education and Human Development	Clark, Geoffrey Justin	Professor	PHD, University of Manchester, 1989	Pharmacology and	School of Medicine
Casella, Carolyn R.	Assistant Professor Term	PHD, University of Wisconsin, 1995	Microbiology and	School of Medicine	Clayton, Dewey M.	Professor	PHD, University of Missouri-Columbia, 1995	Political Science	College of Arts and Sciences
Cashon, Cara Helen	Associate Professor	PHD, University of Texas at Austin, 2004	Psychology	College of Arts and Sciences	Clem, Brian F.	Associate Professor	PHD, University of Louisville, 2005	Biochemistry & Mo	School of Medicine
Chandler, Karen M.	Associate Professor	PHD, University of Pennsylvania, 1994	English	College of Arts and Sciences	Clukey, Amy B	Associate Professor	PHD, Penn State University, 2009	English	College of Arts and Sciences
Chang, Dar-Jen	Associate Professor	PHD, University Michigan Ann Arbor, 1982	Computer Engineer	JB Speed School of Engineering	Cohn, Robert W.	Professor ^A	PHD, Southern Methodist University, 1988	Electrical & Comp	JB Speed School of Engineering
Chao, Yong	Professor	PHD, Univ of Southern California, 2010	Economics	College of Business	Cole, Marsha Paulette	Assistant Professor	PHD, University of Kentucky, 2004	Biochemistry & Mo	School of Medicine
Chastain, Raymond Joseph	Associate Professor Term	PHD, University of Georgia, 2005	Computer Informat	College of Business	Collins-Camargo, Elaine	Professor	PHD, University of Kentucky, 2005	Kent School of So	Kent School of Social Work
Chen, Joseph			Pharmacology & Toxicology/ Bioeng.		Combs, Ryan	Associate Professor	PHD, University of Manchester, UK, 2010	Health Promotion	School of Public Health and Information Sciences
					Cooper, Nigel			Anatomical Sciences & Neurobiology	

Cooper, Justin T	Associate Professor	EDD, University of Kentucky, 2001	Special Education	College of Education and Human Development	Dawson-Edwards, B. Cherie Cherie	Associate Professor	PHD, Virginia Commonwealth University, 2007		Office of the Executive Vice President and University Provost
Corbitt, Cynthia	Professor	PHD, University of Alaska, 1997	Biology	College of Arts and Sciences					
Coty, Mary-Beth	Associate Professor	PHD, Vanderbilt University, 2004	Nursing	School of Nursing	Day, Christopher Andrew	Associate Professor	PHD, Texas State University, 2011	Geography/ Geoscience	College of Arts and Sciences
Courtade, Ginevra R	Professor	PHD, Univ of NC at Charlotte, 2006	Special Education	College of Education and Human Development	DeCaro, Marci Sammons	Associate Professor	PHD, Miami University, 2009	Psychology	College of Arts and Sciences
Creel, Liza	Associate Professor	PHD, Texas A&M University, 2015 MPH, University of Michigan, 2006	Health Management & Systems Sciences	School of Public Health and Information Sciences	Della, Lindsay J	Associate Professor	PHD, University of Georgia, 2006	Communication	College of Arts and Sciences
Crespo, Fabian Alberto	Associate Professor	PHD, University of Buenos Aires, 1998	Anthropology	College of Arts and Sciences	Demuth, Donald				
Crim, Gary A.	Professor	DMD, University of Kentucky, 1974		School of Dentistry	Depue, Brendan	Associate Professor*	PHD, Univ of Colorado at Boulder, 2009	Psychology	College of Arts and Sciences
Cumberland, Denise Marie	Associate Professor	PHD, University of Louisville, 2012	Educational Leadership	College of Education and Human Development	DePuy, Gail W.	Professor	PHD, Georgia Inst of Technology, 1995		Office of the Executive Vice President and University Provost
Cunningham, Michael R.	Professor	PHD, University of Minnesota, 1977	Communication	College of Arts and Sciences	Desoky, Ahmed H.	Associate Professor	PHD, North Carolina State Univ, 1983	Computer Engineer	JB Speed School of Engineering
D'Silva, Margaret U	Professor	PhD, University of Kentucky, 1990	Communication	College of Arts & Sciences	Ding, Jixiang	Associate Professor	PHD, University of Manchester, 1995		School of Dentistry
Dalle, Matthieu Stephane M	Associate Professor	PHD, Pennsylvania State University, 2003	Modern Languages	College of Arts and Sciences	Doane, Christopher P.	Professor	PHD, Ohio State University, 1981	Music	School of Music
Daniels, Caroline	Professor	MLS, Simmons College, 2002	Archives & Specialia	University Libraries	Dove, Guy Orlando	Professor	PHD, University of Chicago, 2002	Philosophy	College of Arts and Sciences
Danovitch, Judith H	Professor	PHD, Yale University, 2005	Psychology	College of Arts and Sciences	Dowling, Timothy Edward	Professor	PHD, CA Institute of Technology, 1989	Physics	College of Arts and Sciences
Dantoni, Joan L.	Instructor Term		English	College of Arts and Sciences	Doyle, Betty S.	Instructor Term		Middle and Second	College of Education and Human Development
Darji, Udayan	Professor	PhD, Auburn University, 1991	Mathematics	College of Arts & Sciences					
Davis, Christopher L.	Professor	PHD, Oxford University, 1979	Physics	College of Arts and Sciences	Dsouza, Stanley	Professor	PhD, University of Melbourne (Australia), 1985	Physiology	School of Medicine
					Dugatkin, Lee A.	Professor^	PHD, SUNY at Binghamton, 1991	Biology	College of Arts and Sciences

Dumstorf, Thomas Anthony	Instructor Term		Modern Languages	College of Arts and Sciences	Farrier, Jasmine L.	Professor	PHD, Univ Texas at Austin, 2000	Political Science	College of Arts and Sciences
Dunaway, Juliet Heun	Assistant Professor Term	DMD, University of Louisville, 1997		School of Dentistry	Faul, Anna Catharina	Professor	PHD, Rand Afrikaans University, 1996	Joint PhD in Soci	Kent School of Social Work
Eason, Perri Kaye	Professor	PHD, University of California, 1991	Biology	College of Arts and Sciences	Faul, Andre Johan	Assistant Professor Term	PHD, University of Louisville, 2014		JB Speed School of Engineering
Eckert, Mitch Lee	Associate Professor	MFA, Ohio University, 1993	Fine Arts	College of Arts and Sciences	Faulds, David J.	Associate Professor	PHD, University of Iowa, 1986	Marketing	College of Business
Edison, Thomas Wayne	Associate Professor	PHD, University of Kentucky, 2002	Modern Languages	College of Arts and Sciences	Feldhoff, Richard			Biochemistry & Molecular Biology	
Eells, Tracy Dwight	Professor	PHD, UNC - Chapel Hill, 1989		School of Medicine	Fernandez, Jose Manuel	Associate Professor	PHD, Univ of Virginia-Main Campus, 2008	Economics	College of Business
Egilmez, Nejat K	Professor	PHD, SUNY at Buffalo, 1986	Microbiology and	School of Medicine	Fernandez-Botran, Gabino Rafael	Associate Professor	PHD, University of Kansas Med Cent, 1985	Pathology	School of Medicine
Ehrick, Christine T.	Professor	PHD, University of California, LA, 1997	History	College of Arts and Sciences	Ferre, John Patrick	Professor	PHD, University of Illinois, 1986	Communication	College of Arts and Sciences
El-Baz, Ayman Sabry	Professor	PHD, University of Louisville, 2006	Bioengineering	JB Speed School of Engineering	Fiet, James	Professor*	PHD, Texas A&M University, 1991	Entrepreneurship	College of Business
Elhaj, Imad A	Associate Professor Term	PHD, George Washington University, 1995	Finance	College of Business	Finch, John T	Assistant Professor Term		Middle and Second	College of Education and Human Development
Ellis, Steven R.	Professor	PHD, University of Iowa, 1983	Biochemistry & Mo	School of Medicine	Firriolo, Francis John	Professor	PHD, University of Maryland, 1994 DDS, University of Maryland, 1986		School of Dentistry
Elmaghraby, Adel S.	Professor	PHD, University of Wisconsin-Madison, 1982	Computer Engineer	JB Speed School of Engineering	Fisher, Benjamin William	Assistant Professor	PhD, Vanderbilt University, 2016	Criminal Justice	College of Arts & Sciences
Emery, Sarah M	Professor	PHD, Michigan State University, 2005	Biology	College of Arts and Sciences	Fitzgerald, R. Christopher	Associate Professor		Performance Studi	School of Music
Ensign, David J.	Professor	JD, Washburn University, 1982 MLS, 1976	Law	Library School of Law	Fleming, Tyler David	Associate Professor	PHD, Univ of Texas Austin, 2009	Pan African Studi	College of Arts and Sciences
Esposito, Carmine			Dentistry		Flint, Robert Leon	Associate Professor	MD, University of Louisville, 1993 DMD, University of Louisville, 1989		School of Dentistry
Estes, Eileen O'Neill	Assistant Professor Term	PHD, University of Louisville, 2002	Counseling and Hu	College of Education and Human Development	Flint, Amy Seely	Professor	PHD, University of Calif-Berkeley, 1997	Middle and Second	College of Education and Human Development
Evans, Lindsey	Assistant Professor	PhD, Virginia Commonwealth Univeristy, 2017	Urban & Public Affairs	College of Arts & Sciences	Fonseca-Greber, Bonnibeth Beale	Associate Professor	PHD, University of Arizona, 2000	Modern Languages	College of Arts and Sciences
Ewald, Paul William	Professor	PHD, University of Washington, 1980	Biology	College of Arts and Sciences					
Falcone, Jeffrey Charles	Associate Professor	PHD, Indiana University Purdue Univ, 1989	Physiology	School of Medicine					
Farag, Aly A.	Professor	PHD, Purdue University, 1990	Electrical & Comp	JB Speed School of Engineering					

Fowler, Michael Ross	Professor	JD, Harvard University, 1986	Political Science	College of Arts and Sciences	Gaskins, Jeremy T	Associate Professor	PHD, University of Florida, 2013	Bioinformatics & School of Public Health and Information Sciences
Freberg, Karen June	Professor	PHD, Univ of TN Knoxville, 2011	Communication	College of Arts and Sciences				
Freedman, Jonathan	Professor Term	PhD, Albert Einstein College of Medicine, 1986	Pharmacology & Toxicology	School of Medicine	Gast, Melanie Toshive Jones	Associate Professor	PHD, University of California-Davis, 2009	Sociology College of Arts and Sciences
Freelon, Byron	Assistant Professor	PhD, University of Minnesota, 2001	Physics	College of Arts & Sciences	Gaughan, Andrea Elizabeth	Associate Professor	PHD, University of Florida, 2011	Geography/ Geoscience College of Arts and Sciences
Freeman, Lauren Elizabeth	Associate Professor	PHD, Boston University, 2010	Philosophy	College of Arts and Sciences	Gentili, Monica	Associate Professor	PHD, University of Rome, 2003	Industrial Engine JB Speed School of Engineering
French, Mark N.	Professor	PHD, University of Iowa, 1992	Civil & Environment	JB Speed School of Engineering	George, Casey Elizabeth	Associate Professor	PHD, University of Illinois, UC, 2009	Educational Leadership College of Education and Human Development
Frieboes, Hermann Bueno	Associate Professor	PHD, Univ California - Irvine, 2006	Bioengineering	JB Speed School of Engineering				
Fried, Joel R.	Professor	PHD, Univ Massachusetts Amherst, 1976	Chemical Engineer	JB Speed School of Engineering	Gerber, Erin Lynn	Associate Professor Term	PHD, University of Louisville, 2013	Industrial Engine JB Speed School of Engineering
Frigui, Hichem	Professor	PHD, Univ of Missouri-Columbia, 1997	Computer Engineer	JB Speed School of Engineering	Germain, Richard Nicholas	Professor*	PHD, Michigan State University, 1989	Marketing College of Business
Fu, Xiao-An	Professor	PHD, Case Western University, 2001	Chemical Engineer	JB Speed School of Engineering	Ghasemi, Omid Fare	Associate Professor	PHD, Pennsylvania State University, 2015	Civil & Environment JB Speed School of Engineering
Fulton, Christopher B.	Associate Professor	PHD, Columbia University, 1993	Fine Arts	College of Arts and Sciences	Gibson, John C	Professor	PHD, University of Toronto, 2001	Philosophy College of Arts and Sciences
Fuqua, Joshua L	Assistant Professor Term	PHD, University of Kentucky, 2010	Pharmacology and Toxicology	School of Medicine	Gie, Gung Min	Associate Professor	PHD, Indiana University, 2010	Mathematics College of Arts and Sciences
Furman, Christian Davis	Professor* Term	MD, University of Louisville, 1996		School of Medicine	Gilderbloom, John I.	Professor	PHD, University of California, Santa Barb, 1983	Urban & Public Affairs College of Arts and Sciences
Fuselier, Linda Catherine	Professor	PHD, University of Kentucky, 2004	Biology	College of Arts and Sciences	Gill, Ryan S.	Professor	PHD, The University of Texas, 2002	Mathematics College of Arts and Sciences
Futrell, Allan W.	Associate Professor	PHD, Bowling Green State University, 1984	Communication	College of Arts and Sciences	Giridharan, Guruprasad Anapathur	Professor	PHD, University of Utah, 2002	Bioengineering JB Speed School of Engineering
Gagne, Patricia Lorraine	Professor	PhD, Ohio State University, 1993	Sociology	College of Arts & Sciences	Goetzke, Frank	Professor	PHD, West Virginia University, 2006	Urban & Public Affairs College of Arts and Sciences
Gainous, Jason	Professor	PHD, University of Florida, 2005	Political Science	College of Arts and Sciences	Goldentul, Zhanna	Associate Professor Term		Theatre Arts College of Arts and Sciences
Ganzel, Toni Michelle	Professor	MD, University of Nebraska, 1978		School of Medicine	Golder, Seana	Professor	PHD, University of Washington, 2001	Kent School of So Kent School of Social Work
Garrett, Robert Paul	Professor	PHD, Indiana Univ Bloomington, 2008	Entrepreneurship	College of Business	Golding, Alan C.	Professor	PHD, University of Chicago, 1980	English College of Arts and Sciences

Grady, Christopher Barrett	Associate Professor Term	PHD, Michigan State University, 2008	Political Science	College of Arts and Sciences	Hammash, Muna Hassan	Associate Professor	PHD, University of Kentucky, 2010	Nursing	School of Nursing
Graham, James E.	Associate Professor	PHD, Indiana University, 1995	Microbiology and Chemistry	School of Arts and Medicine College of Arts and Sciences	Hammond, Gerald B	Professor*	PHD, University of Birmingham, 1985	Chemistry	College of Arts and Sciences
Grapperhaus, Craig Alan	Professor	PHD, Texas A&M University, 1998	Chemistry	College of Arts and Sciences	Handa, Sachin	Associate Professor	PHD, Oklahoma State University, 2013	Chemistry	College of Arts and Sciences
Gray, Jean	Associate Professor	PHD, Miami University, 2000	Political Science	College of Arts and Sciences	Hanson, Stephen S	Associate Professor	PhD, Georgetown University, 2002	Philosophy	College of Arts & Sciences
Greenwell, Henry	†		Dentistry		Harkema, Susan Jill	Professor*	PHD, Michigan State University, 1993		School of Medicine
Greenwood, Mary	Instructor Term	PhD, University of North Carolina, 2016	Classical and Modern Languages	College of Arts & Sciences	Harnett, Cindy Kathleen	Professor	PHD, Cornell University, 2000	Electrical & Comp	JB Speed School of Engineering
Gregg, Ronald G.	Professor*	PHD, University of Queensland, 1984	Biochemistry & Molecular Biology	School of Medicine	Harris, Patrick			Physiology	
Griner, Paul F.	Professor		English	College of Arts and Sciences	Harris, Muriel Jean	Associate Professor Term	PHD, Univ of South Carolina, 2000 MPH, University of So Carolina, 1997	Health Promotion	School of Public Health and Information Sciences
Gross, Jacob Paul King	Associate Professor	PHD, Indiana Univ Bloomington, 2008	Educational Leadership	College of Education and Human Development	Hart, Joy Lynn	Professor	PHD, University of Kentucky, 1988	Communication	College of Arts and Sciences
Grossi, Elizabeth Lynn	Associate Professor	PHD, Indiana University, Penn, 1991	Criminal Justice	College of Arts and Sciences	Hatteberg, Kent E.	Professor	DMA, University of Iowa, 1995	Performance Studies	School of Music
Groves, Frank Dunbar	Associate Professor	MD, LA State Univ HSC, 1988 MPH, Johns Hopkins University, 1997	Epidemiology & Population Sciences	School of Public Health and Information Sciences	Haws, Jonathan A	Professor†	PHD, University of Wisconsin-Madison, 2003	Anthropology	College of Arts and Sciences
Guan, Jian	Professor	PHD, University of Louisville, 1992	Computer Information Systems	College of Business	Hayden, Theresa	Assistant Professor Term	PhD, University of Louisville, 2010	Criminal Justice	College of Arts & Sciences
Guido, William	Professor	PHD, Univ of NC Greensboro, 1985	Anatomical Sciences	School of Medicine	Haynes, Lora Diane	Professor Term	PHD, University of Louisville, 1997	Psychology	College of Arts and Sciences
Gupta, Ramesh	Professor**	PHD, University of Roorkee, 1972	Pharmacology and Toxicology	School of Medicine	He, Zijiang	Professor^	PHD, University of Alabama, 1990	Psychology	College of Arts and Sciences
Hadizadeh, Jafar	Professor	PHD, Imperial College, 1980	Geography/Geoscience	College of Arts and Sciences	Head, Barbara			Social Work	
Hadley, Karen C.	Associate Professor	PHD, University of Calif - Berkeley, 1994	English	College of Arts and Sciences	Heberle, Lauren	Associate Professor	PHD, Rutgers University, 2003	Sociology	College of Arts and Sciences
Hagan, Michael Patrick	Associate Professor Term	PHD, University of Louisville, 2009	Comparative Humanities	College of Arts and Sciences	Heinecken, Dawn	Professor	PHD, Bowling Green State University, 1999	Women's & Gender	College of Arts and Sciences
Hall, Lynne A	Professor	DRPH, UNC - Chapel Hill, 1983	Nursing	School of Nursing	Herd, Ann	Associate Professor Term	PHD, The Univ of TN Knoxville, 1987	Educational Leadership	College of Education and Human Development
Hambrick, Marion Evan	Associate Professor	PHD, University of Louisville, 2010	Health & Sports Sciences	College of Education and Human Development	Hermann, Carla	Emeritus status		Nursing	

Herring, Nicole Renee	Associate Professor	PHD, University of Cincinnati, 2007	Anatomical Scienc	School of Medicine	Huang, Ying	Associate Professor	PHD, University of Kansas, 2010	Accountancy College of Business
Hetman, Michal	Professor*	PHD, Polish Academy of Sciences, 1997 MD, Warsaw Medical School, 1994		School of Medicine	Hubscher, Charles H.	Professor	PHD, Florida State University, 1994	Anatomical School of Science Medicine
Hieb, Jeffrey Lloyd	Professor	PHD, University of Louisville, 2008	Engineering Funda	JB Speed School of Engineering	Hufbauer, Benjamin	Associate Professor	PHD, University of Calif, Santa Barbara, 1999	Fine Arts College of Arts and Sciences
Higgins, George Edward	Professor	PHD, Indiana University of Pennsylvania, 2001	Criminal Justice	College of Arts and Sciences	Hums, Mary	Professor	PHD, The Ohio State University, 1992	Health & Sports S College of Education and Human Development
Hill, Margaret	Associate Professor	DMD, University of Louisville, 1987		School of Dentistry	Huntington-Moskos, Luz	Associate Professor	PHD, University of Alabama-Birmingham, 2013	Nursing School of Nursing
Himes, Paul R	Assistant Professor Term	PHD, Michigan State University, 2009	Biology	College of Arts and Sciences	Hutcheson, Gregory	Associate Professor	PHD, Harvard University, 1993	Modern Languages College of Arts and Sciences
Hindy, Nicholas Carl	Assistant Professor	PhD, University of Pennsylvania, 2012	Psychology	College of Arts & Sciences	Ildstad, Suzanne T.	Professor**	MD, Mayo Medical School, 1978	School of Medicine
Hines-Martin, Vicki	Professor	PHD, University of Kentucky, 1994	Nursing	School of Nursing	Imam, Ibrahim Najati	Associate Professor	PHD, Auburn University, 1982	Computer Engineer JB Speed School of Engineering
Hirschy, Amy Seleste	Associate Professor	PHD, Vanderbilt University, 2005	Counseling and Hu	College of Education and Human Development	Imbroscio, David L.	Professor	PHD, University of Maryland, 1993	Political Science College of Arts and Sciences
Hood, Joshua L	Associate Professor	MD, University of Kentucky, 2006 PHD, University of Kentucky, 2004	Pharmacology and	School of Medicine	Immekus, Jason C	Professor	PHD, Purdue University, 2016	Educational Leade College of Education and Human Development
Horner, Bruce M	Professor*	PhD, University of Pittsburgh, 1988	English	College of Arts & Sciences	Inanc, Tamer	Associate Professor	PHD, Penn State University Park, 2002	Electrical & Comp JB Speed School of Engineering
Howarth, David A	Professor†	PhD, Ohio State University, 1979	Geography/ Geosciences	College of Arts & Sciences	Ingle, William K	Professor	PHD, Florida State University, 2007	Educational Leade College of Education and Human Development
Howell, Penny Brooke	Professor	EDD, Teachers College Columbia Univ, 2004	Middle and Second	College of Education and Human Development	Izyumov, Alexei	Associate Professor	PHD, Academy of Sciences, USSR, 1984	Economics College of Business
Howland, Dena R	Professor*	PHD, Drexel University, 1995		School of Medicine	Jacobi-Vessels, Jill Lynn	Associate Professor Term	PHD, University of Louisville, 2008	Special Education College of Education and Human Development
Hoyt, Lenore Karol	Professor Term	PHD, University of Tennessee Knoxville, 1997	Chemistry	College of Arts and Sciences	Jagers, Jason R	Associate Professor	PHD, University South Carolina Columbia, 2010	Health & Sports Sciences College of Education and Human Development
Hsu, Keng Hao	Associate Professor	PHD, University of Illinois, 2009	Mechanical Engineering	JB Speed School of Engineering	Jala, Venkatakrishna Rao	Associate Professor Term	PHD, Indian Institute of Science, 2001	Microbiology and School of Medicine
Hu, Changbing	Associate Professor	PHD, Indiana Univ Bloomington, 2002	Mathematics	College of Arts and Sciences	Jayanthi, Chakram S.	Professor†	PHD, Indian Inst Technology, 1981	Physics College of Arts and Sciences

Jemian, Rebecca Ann	Associate Professor	PHD, Indiana University, 2001	Music	School of Music	Kerr, Jelani	Associate Professor	PHD, University of South Carolina, 2009 MPH, University of South Carolina, 2007	Health Promotion	School of Public Health and Information Sciences
Jennings, J'Aime C	Associate Professor	PHD, University of Alabama, Birmingham, 2015	Health Management	School of Public Health and Information Sciences	Kezdy, Andre	Professor	PHD, University of Illinois, 1990	Mathematics	College of Arts and Sciences
Johnson, Christopher E	Professor	PHD, University of Minnesota, 1998	Health Management	School of Public Health and Information Sciences	Khalili, Meena	Assistant Professor	MFA, Virginia Commonwealth University, 2010	Fine Arts	College of Arts & Sciences
Johnson, Timothy S	Associate Professor	PHD, Univ of Wisconsin-Madison, 2014	English	College of Arts and Sciences	Khan, Zafrulla	Professor	DDS, Bangalore University, 1972	Physiology/ Medicine	School of Dentistry
Jones, Yvonne V.	Associate Professor	PHD, American University, 1975	Anthropology	College of Arts and Sciences	Khundmiri, Syed	Associate Professor*	PHD, Massachusetts Inst of Tech, 1997 MPH, John Hopkins University, 2001	Pharmacology and	School of Medicine
Jones, Ricky L.	Professor	PHD, University of Kentucky, 1997	Pan African Studi	College of Arts and Sciences	Kidd, LaCreis Renee	Professor	PHD, Johns Hopkins University, 1969	Physics	College of Arts and Sciences
Jones, Johnny L	Assistant Professor	MFA, California Institute of the Arts, 2009	Theatre Arts	College of Arts & Sciences	Kielkopf, John F.	Associate Professor	PHD, Texas A&M University, 2008	Civil & Environme	JB Speed School of Engineering
Joshua, Irving Gilbert	Professor	PHD, Pennsylvania State University, 1976	Physiology	School of Medicine	Kim, Young Hoon	Assistant Professor		Urban & Public Affairs	College of Arts and Sciences
K'Meyer, Tracy Elaine	Professor	PHD, University of NC at Chapel Hill, 1993	History	College of Arts and Sciences	Kinahan, Kelly L	Assistant Professor			
Kakar, Sham Sunder	Professor	PHD, Kurukshetra University, 1983	Physiology	School of Medicine	Kinchen, Shirletta Jeanette	Associate Professor	PHD, Univ of Memphis, 2011	Pan African Studi	College of Arts and Sciences
Kalbfleisch, Theodore Term	Associate Professor	PhD, Boston University, 1994	Biochemistry & Molecular Genetics	School of Medicine	King, Sidney	Professor		Performance Studi	School of Music
Kantardzic, Mehmed	Professor	PHD, University of Sarajevo, 1980	Computer Engineer	JB Speed School of Engineering	King, Kristi M.	Associate Professor	PHD, Southern IL Univ Carbondale, 2008	Health & Sports S	College of Education and Human Development
Katzman, Elizabeth			Otolaryngology and Communicative Disorders	School of Medicine	Kline, Audrey D	Associate Professor	PHD, Auburn University, 1993	Economics	College of Business
Keeley, Theresa Marie	Associate Professor	PHD, Northwestern University, 2013	History	College of Arts and Sciences	Klinge, Carolyn Muriel	Professor ^A	PHD, Pennsylvania State University, 1984	Biochemistry & Mo	School of Medicine
Keeling, Deborah	Professor	PhD, Purdue University, 1980	Criminal Justice	College of Arts & Sciences	Koenig, Steven Christopher	Professor*	PHD, The University of Texas, 1996	Bioengineering	JB Speed School of Engineering
Keith, Rachel			Pharmacology & Toxicology		Kolers, Avery	Professor	PHD, University of Arizona, 2000	Philosophy	College of Arts and Sciences
Kelly, Janet Marie	Professor	PHD, Wayne State University, 1992	Urban & Public Af	College of Arts and Sciences	Kondaurova, Maria Vladimirovna	Associate Professor	PHD, Purdue University, 2008	Psychology	College of Arts and Sciences

Kong, Maiying	Professor	PHD, Indiana Univ Bloomington, 2004	Bioinformatics & School of Public Health and Information Sciences	Kyzer, Brittany			Audiology	School of Medicine
				Lai, Delin	Professor	PHD, Tsinghua University, Beijing, 1992	Fine Arts	College of Arts and Sciences
Kopechek, Jonathan Andrew	Associate Professor	PHD, University of Cincinnati, 2011	Bioengineering	LaJoie, Andrew Scott	Professor	PHD, University of Louisville, 2003	Health Promotion	School of Public Health and Information Sciences
Kopelson, Karen Lynn	Associate Professor	PHD, Purdue University, 2002	English					School of Dentistry
Kosiewicz, Michele Marie	Associate Professor	PHD, Binghamton University, 1992	Microbiology and	Lamont, Richard J	Professor*	PHD, University of Aberdeen, 1985		School of Music
Kouokam, Joseph	Assistant Professor Term	PHD, University of Saarland, 2002	Pharmacology and	Land, William	Associate Professor	DMA, University of Illinois, UC, 2007	Performance Studi	School of Music
Koven, Steven G.	Professor	PHD, University of Florida, 1982	Urban & Public Af	Reese				College of Education and Human Development
				Landrum, Timothy James	Professor†	PHD, University of Virginia, 1990	Special Education	College of Education and Human Development
Kozlowski, Pawel	Professor	PHD, University of Arizona, 1992	Chemistry	Larson, Lee Matthew	Professor	PHD, Michigan State University, 1981	Mathematics	College of Arts and Sciences
Krebs, Daniel	Associate Professor	PHD, Emory University, 2007	History	Larson, Ann Elisabeth	Professor†	PHD, University of Illinois at Urba, 1998	Middle and Secondary Education	College of Education and Human Development
Krimm, Robin Frances	Professor	PHD, University of Virginia-Main Campus, 1996	Anatomical Scienc					College of Education and Human Development
Kubicka, Ewa M.	Professor	PHD, Western Michigan University, 1989	Mathematics	Lauf, Adrian Peter Orion	Associate Professor	PHD, Vanderbilt University, 2010	Computer Engineer	JB Speed School of Engineering
Kubicki, Grzegorz Michal	Professor	PHD, Western Michigan University, 1989	Mathematics	Lauroesch, James Thomas	Associate Professor	PHD, University of Chicago, 1995	Physics	College of Arts and Sciences
Kulasekera, Karunarathna	Professor†	PHD, University of Nebraska, Lincoln, 1988	Bioinformatics & School of Public Health and Information Sciences	Lawrenz, Matthew Bryan	Associate Professor	PHD, The University of Texas, 2003		School of Medicine
				Lawson, Thomas Richard	Professor	PHD, University of Washington, 1982	Joint PhD in Social Work	Kent School of Social Work
Kulosman, Hamid	Professor	PHD, University of Illinois at Urba, 2004	Mathematics	Leach, Mark M	Professor†	PHD, Univ of Oklahoma Norman, 1991	Counseling and Hu	College of Education and Human Development
Kumar, Anup	Professor†	PHD, North Carolina State University, 1989	Computer Engineer					College of Education and Human Development
				LeBlanc, Amanda Jo	Associate Professor	PHD, West Virginia University, 2008		School of Medicine
Kumar, Ashok	Professor^		Anatomical Sciences & Neurobiology	Leonard, Melinda A	Associate Professor Term	PHD, University of Kentucky, 2009	Psychology	College of Arts and Sciences
Kushner, George M.	Professor	MD, University of Alabama, 1991 DMD, Temple University, 1985	School of Dentistry	Leonard, Kimberly K	Professor	PhD, University of Pennsylvania, 1986	Criminal Justice	College of Arts & Sciences
Kuwabara, Nobuyuki	Associate Professor	PHD, Sophia University, 1986	Anatomical Sciences and Neurobiology	Levinson, Cheri A	Associate Professor	PHD, Washington University, 2015	Psychology	College of Arts and Sciences

Lewine, Richard R	Professor	PHD, University of Pennsylvania, 1975	Psychology	College of Arts and Sciences	Logsdon, Mimia Cynthia	Professor	DNS, Indiana University, 1990	Nursing	School of Nursing
Lewis, James Eugene	Associate Professor	PHD, University of Louisville, 2003	Engineering	JB Speed School of Engineering	Longerbeam Susan Diana	Associate Professor	PHD, University of Maryland, 2005	Counseling and Hu	College of Education and Human Development
Li, Bingtuan	Professor	PHD, Arizona State University, 1998	Mathematics	College of Arts and Sciences	Lorenz, Douglas John	Associate Professor	PHD, University of Louisville, 2011 MPH, University of Louisville, 2002	Bioinformatics &	School of Public Health and Information Sciences
Li, Bing	Associate Professor	PHD, Peking University (China), 2004	Microbiology & Immunology	School of Medicine	Losavio, Michael	Associate Professor	JD, Louisiana State University, 1981	Criminal Justice	College of Arts and Sciences
Li, Jiayu	Associate Professor	PHD, Arizona State University, 2004	Mathematics	College of Arts and Sciences	Lukashevich Igor Sergeyevich	Professor ^A	PhD, Academy of Medical Sciences (USSR), 1976 MD, Minsk Medical Institute (USSR), 1973 DSc, Academy of Medical Sciences (USSR), 1987	Pharmacology & Toxicology	School of Medicine
Li, Jinjia	Associate Professor	PHD, Univ of IL Urbana Champaign, 2006	Mathematics	College of Arts and Sciences	Lundy Jr, Robert Frank	Associate Professor	PHD, Florida State University, 1998	Anatomical Scienc	School of Medicine
Li, Hongxiang	Associate Professor	PHD, University of Washington, 2008	Electrical & Comp	JB Speed School of Engineering	Lutz, Deborah S	Professor*	PHD, Grad Center, CUNY, 2004	English	College of Arts and Sciences
Li, Ying	Assistant Professor	PHD, University of Illinois-UC, 2008	Chemistry	College of Arts and Sciences	Luzzio, Frederick A.	Professor	PHD, Tufts University, 1982	Chemistry	College of Arts and Sciences
Li, Zhixia	Associate Professor	PHD, University of Cincinnati, 2011	Civil & Environmental Engineering	JB Speed School of Engineering	Lyle, Keith B	Professor	PHD, Yale University, 2005	Psychology	College of Arts and Sciences
Lian, Yongsheng	Professor	PHD, University of Florida, 2003	Mechanical Engine	JB Speed School of Engineering	Ma, Yuxin	Associate Professor	PHD, Univ of Minnesota Twin Cities, 2003	History	College of Arts and Sciences
Linder, Mark William	Professor	PHD, University of Louisville, 1992	Pathology	School of Medicine	Mackey, Thomas C.	Professor†	PHD, Rice University, 1984	History	College of Arts and Sciences
Lingo, Amy Shearer	Professor	EDD, University of Kentucky, 2003	College of Educat	College of Education and Human Development	Magnuson, David Stuart	Professor*	PHD, University of British Columbia, 1988		School of Medicine
Little, Bertis Britt	Professor	PHD, Univ Texas at Austin, 1983	Health Management	School of Public Health and Information Sciences	Makris, Mary	Associate Professor	PhD, Rutgers University, 1990	Classical and Modern Languages	College of Arts & Sciences
Liu, Shudun	Associate Professor	PHD, Rutgers University, 1991	Physics	College of Arts and Sciences	Maldonado, Claudio			Physiology	
Liu, Ke Jian			Pharmacology & Toxicology		Malik, Mohammad			Pharmacology & Toxicology	
Liu, Jin Jun	Professor	PHD, Ohio State University, 2007	Chemistry	College of Arts and Sciences	Mansfield-Jones, Jennifer	Associate Professor	PHD, University of Michigan Ann Arbor, 1995	Biology	College of Arts and Sciences
Lloyd, Kimcherie	Professor		Performance Studi	School of Music					
Logan, Kossi	Associate Professor	PHD, University of Iowa, 1996	Pan African Studi	College of Arts and Sciences					

Mark, Sheron	Associate Professor	PHD, Boston College, 2012	Middle and Second	College of Education and Human Development	McGee, Aaron W McGinley, William Mark	Associate Professor Professor*	PHD, Univ of CA San Francisco, 2001 PHD, University of Alberta, 1988	Anatomical Scienc Civil & Environme	School of Medicine JB Speed School of Engineering
Markowitz, Lisa B.	Associate Professor	PHD, UMass Amherst, 1992	Anthropology	College of Arts and Sciences School of Dentistry	McInnis, Edward Cromwell McIntyre, Michael L	Associate Professor Term Associate Professor	PHD, Michigan State University, 2006 PHD, Clemson University, 2006	History Electrical & Comp	College of Arts and Sciences JB Speed School of Engineering
Martinez, Hector Ramon	Assistant Professor Term	DDS, Universidad de Nuevo Leon, 2003	Philosophy	College of Arts & Sciences	McKinney, William Paul	Professor*	MD, University of Texas/SW Med Sch, 1978		School of Public Health and Information Sciences
Massey, Scottie	Associate Professor	MFA, Arizona State University, 1997	Fine Arts	College of Arts and Sciences					
Mast, Benjamin	Professor	PHD, Wayne State University, 2002	Psychology	College of Arts and Sciences	McLeod, John Edmond	Professor	PHD, University of Toronto, 1993	History	College of Arts and Sciences
Matarese, Susan M	Professor	PhD, University of Minnesota, 1979	Political Science	College of Arts & Sciences	McNally, Lacey			Pharmacology & Toxicology/ Medicine	
Mathis, Lynetta Weathers	Assistant Professor Term		Kent School of So	Kent School of Social Work	McNamara, Shamus	Associate Professor	PHD, University of Wisconsin-Madison, 2002	Electrical & Comp	JB Speed School of Engineering
Matoba, Nobuyuki	Professor	PHD, Kyoto University, 2001	Pharmacology and	School of Medicine	Medina, Manuel F.	Professor	PHD, University of Kansas, 1994	Modern Languages	College of Arts and Sciences
Mattes, Mark A	Assistant Professor	PHD, University of Iowa, 2013	English	College of Arts and Sciences	Meeks, Suzanne	Professor	PHD, Catholic University of America, 1985	Psychology	College of Arts and Sciences
Mattingly, Stephen P	Associate Professor	DMA, Florida State Performance, 2007	Performance Studi	School of Music	Mendes, Sergio B	Professor	PHD, University of Arizona, 1997	Physics	College of Arts and Sciences
Maurer, Muriel C.	Professor	PHD, University of Virginia-Main Campus, 1992	Chemistry	College of Arts and Sciences	Menze, Michael A	Professor	PHD, Heinrich-Heine University Dusseldorf, 1997	Biology	College of Arts and Sciences
Maxwell, Kristi	Associate Professor	PHD, University of Cincinnati, 2010 MFA, University of Arizona, 2005	English	College of Arts and Sciences	Merry, Melissa Kate	Associate Professor	PHD, University of Washington, 2008	Political Science	College of Arts and Sciences
Mayer, Lee			Dentistry						
Mccormack, Michael Brandon	Associate Professor	PHD, Vanderbilt University, 2013	Pan African Studi	College of Arts and Sciences	Mervis, Carolyn Beth	Professor ^A	PHD, Cornell University, 1976	Psychology	College of Arts and Sciences
McCubbin, Laurie Dawn	Associate Professor	PHD, Univ of Wisconsin-Madison, 2003	Counseling and Hu	College of Education and Human Development	Metz, Michael James Miller, Richard	Professor	DMD, University of Louisville, 2000		School of Dentistry
McDonald, Frances Sarah	Assistant Professor	PhD, Duke University, 2015	English	College of Arts & Sciences	Miller, Donald M.	Professor*	PHD, Duke University, 1972 MD, Duke University, 1973	Microbiology & Immunology	School of Medicine
McFadden, Justin R	Associate Professor	PHD, Univ of Minnesota Twin Cities, 2015	Middle and Second	College of Education and Human Development					

Miller, Alica	Professor	PHD, Michigan State University, 2001 PHD, Michigan St University, 2001	Mathematics	College of Arts and Sciences	Neal, Rachel Elizabeth	Associate Professor	PHD, University of Missouri-Rolla, 1999	Biology	College of Arts and Sciences
Mitchell, Thomas C	Professor*	PHD, University of Wisconsin, 1992	Microbiology and	School of Medicine	Nelson, Matthew P	Associate Professor	DMA, 2009, 2009	Performance Studi	School of Music
Mitra, Ritendranath	Associate Professor	PHD, University of North Carolina at Chapel Hill, 2009	Bioinformatics &	School of Public Health and Information Sciences	Nerland, Donald			Pharmacology & Toxicology/ Medicine	
Moazzen, Maryam	Associate Professor	PHD, University of Toronto, 2011	Comparative Human	College of Arts and Sciences	Newton, Tamara L	Professor	PHD, Rutgers University, 1990	Psychology	College of Arts and Sciences
Mohsen, Jafar P.	Professor†	PHD, University of Cincinnati, 1992	JB Speed School of Engineering		Noles, Nicholas S	Associate Professor	PHD, Yale University, 2008	Psychology	College of Arts and Sciences
Moore, Sharon	Professor	PHD, University of Pittsburgh, 1992	Kent School of So	Kent School of Social Work	O'Toole, Martin G	Associate Professor	PHD, University of Louisville, 2008	Bioengineering†	JB Speed School of Engineering
Moyer, Laura P	Associate Professor	PHD, University of Georgia, 2008	Political Science	College of Arts and Sciences	Olinger, Andrea R	Associate Professor	PHD, University of Illinois, UC, 2014	English	College of Arts and Sciences
Mozer, Robin L	Associate Professor	MFA, Pennsylvania State System of H, Term 2005	English	College of Arts and Sciences	Oliphant, Naomi	Professor	DMA, University of Michigan, 1982	Performance Studies	School of Music
Mueller, Eugene G	Professor*	PHD, Harvard University, 1992	Chemistry	College of Arts and Sciences	Orton, Marybeth	Instructor Term		Counseling and Hu	College of Education and Human Development
Mummy, Karen			Physiology		Ovechkin, Alexander Vladimirovich	Associate Professor	PHD, University of Louisville, 2004 PHD, Perm State Medical Institute, 1996		School of Medicine
Murphy, Kevin D	Professor†	PHD, Duke University, 1994	Mechanical Engine	JB Speed School of Engineering			MD, Perm State Medical Institute, 1981		
Naber, John F.	Professor	PHD, Virginia Polytechnic Institute and State University, 1992	Electrical & Comp	JB Speed School of Engineering	Owen, David S.	Professor†	PHD, University of Ill-Chicago, 1997	Philosophy	College of Arts and Sciences
Naeger, Dylan Joseph	Associate Professor Term	PHD, University of Louisville, 2018	Health & Sports S	College of Education and Human Development	Paliewicz, Nicholas Stephen	Associate Professor	PHD, University of Utah, 2015	Communication	College of Arts and Sciences
Nahata, Babu L.	Professor	PHD, Northern Illinois University, 1977	Economics	College of Business	Palmer, Kenneth Edward	Professor*	PHD, University of Cape Town, 1997	Office of the Executive Vice President for Research and Innovation	
Nantz, Michael H	Professor†^	PHD, Purdue University, 1987	Chemistry	College of Arts and Sciences					
Nash, Whitney Ann	Professor Term	PHD, University of Louisville, 2010	Nursing	School of Nursing	Pani, John	Professor	PhD, University of Illinois, 1985	Psychology	College of Arts & Sciences
Nasraoui, Olfa	Professor*	PHD, University of Missouri-Columbia, 1999	Computer Engineer	JB Speed School of Engineering	Pantalos, George	Professor	PHD, Ohio State University, 1983		School of Medicine
					Parkhurst, Shawn	Associate Professor	PHD, Univ of California - Berkeley, 2000	Anthropology	College of Arts and Sciences


Parola, Arthur C.	Professor	PHD, Pennsylvania State University, 1990	Civil & Environme	JB Speed School of Engineering	Possel, Patrick	Professor	PHD, University of Tuebingen, 2004	Counseling and Hu	College of Education and Human Development School of Dentistry
Patton, Elizabeth Brooks	Professor Term	PHD, Purdue University, 2008	Middle and Second	College of Education and Human Development	Potempa, Jan	Professor ^A	DSC, Jaqiellonian University, 1992 PHD, Jaqiellonian University, 1982		
Patton, Scott E	Instructor Term		Special Education	College of Education and Human Development	Potter, Debbie A	Associate Professor	PHD, Brandeis University, 2007	Sociology	College of Arts and Sciences
Payne, Rodger A.	Professor ^T	PHD, University of Maryland, 1989	Political Science	College of Arts and Sciences	Powe, Aleeta M	Associate Professor Term	PHD, American University, 2002	Chemistry	College of Arts and Sciences
Perlin, Michael H.	Professor	PHD, University of Chicago, 1983	Biology	College of Arts and Sciences	Powers, Robert C.	Professor	PHD, University of Massachusetts, 1988	Mathematics	College of Arts and Sciences
Perry, Armon Rashard	Professor	PHD, The University of Alabama, 2008	BSW Instruction	Kent School of Social Work	Pranke, Patrick Arthur	Associate Professor	PHD, Univ of Michigan Ann Arbor, 2004	Comparative Human	College of Arts and Sciences
Peteet, Julie	Professor ^T	PhD, Wayne State University, 1985	Anthropology	College of Arts & Sciences	Prater, Glen	Professor ^T	PHD, The Ohio State University, 1988	Mechanical Engine	JB Speed School of Engineering
Peters, Susan Ann	Associate Professor	PHD, Penn State Univ Park, 2009	Middle and Second	College of Education and Human Development	Presley, Regina Grace	Instructor Term		Health & Sports S	College of Education and Human Development
Petruska, Jeffrey Charles	Associate Professor	PhD, University of Florida, 2000	Anatomical Sciences & Neurobiology	School of Medicine	Priest, Mark Anthony	Professor	MFA, Yale University, 1989	Fine Arts	College of Arts and Sciences
Petry, Heywood			Anatomical Sciences & Neurobiology/A&S	Physiology	Pushpakumara, Sathnur Basappa	Assistant Professor Term	PHD, University of Louisville, 2010 MBBS, University of Gulbarga, 1988	Physiology	School of Medicine
Phillips, Selene G.	Assistant Professor	PHD, Purdue University, 2003	Communicati	College of Arts and Sciences	Quesada, Peter M.	Professor	PHD, University of California - Berkeley, 1991	Mechanical Engine	JB Speed School of Engineering
Pifer, Meghan J	Associate Professor	PHD, Penn State Univ Park, 2010	Educational Leade	College of Education and Human Development	Quinn, Ryan William	Associate Professor	PHD, Univ of Michigan Ann Arbor, 2003	Entrepreneurship	College of Business
Pisano, M. Michele	Professor	PHD, Thomas Jefferson University, 1985		School of Dentistry	Rabin, Andrew S	Professor	PHD, University of Chicago, 2005	English	College of Arts and Sciences
Polzer, Natalie C.	Associate Professor	PHD, Cambridge University, 1991	Comparative Human	College of Arts and Sciences	Rai, Shesh Nath	Professor [*]	PHD, University of Waterloo, 1993	Bioinformatics & Biostatistics	School of Public Health and Information Sciences
Popa, Dan Octavian	Professor [*]	PHD, Rensselaer Poly Inst, 1998	Electrical & Comp	JB Speed School of Engineering	Ralston, Patricia A. Stark	Professor ^T	PHD, University of Louisville, 1983	Engineering Funda	JB Speed School of Engineering
					Ramezani, Farshid	Associate Professor	PHD, McMaster University, Canada, 2011	Chemistry	College of Arts and Sciences
					Reilly, Elizabeth Ellis	Associate Professor		Archives & Specia	University Libraries

Reitz, Christopher J	Assistant Professor	PHD, Princeton University, 2015	Fine Arts	College of Arts and Sciences	Ruther, Matthew H	Associate Professor	PHD, University of Pennsylvania, 2012	Urban & Public Af	College of Arts and Sciences
Rhodes, Che	Associate Professor	MFA, Temple University, 1998	Fine Arts	College of Arts and Sciences	Ryan, Susan Marie	Professor	PHD, UNC - Chapel Hill, 1999	English	College of Arts and Sciences
Richards, Christopher	Associate Professor	PHD, The Ohio State University, 1998	Mechanical Engine	JB Speed School of Engineering	Saleem, Jason Jamil	Associate Professor	PHD, Virginia Polytechnic Institute, 2003	Industrial Engine	JB Speed School of Engineering
Ridley, Glynis Batey	Professor	PHD, Trinity University, 1992	English	College of Arts and Sciences	Salmon, Paul G.	Associate Professor	PHD, Depaul University, 1976	Psychology	College of Arts and Sciences
Riedel, Thomas	Professor	PHD, University of Massachusetts Amherst, 1990	Mathematics	College of Arts and Sciences	Salter, Russell David	Professor	PHD, Duke University, 1985	Microbiology and	School of Medicine
Rivers, Ishwanzya	Assistant Professor Term	PHD, Univ of IL Urbana Champaign, 2011	Educational Leade	College of Education and Human Development	Samuelson, Chad L	Assistant Professor	PHD, Florida State University, 2009	Anatomical Scienc	School of Medicine
Roberson, Carolyn D	Assistant Professor Term	PHD, University of Louisville, 2014	Microbiology and	School of Medicine	Sandell, Lisa Leopold	Associate Professor	PHD, University of Washington, 1994		School of Dentistry
Robinson, Brian Scott	Associate Professor	PHD, University of Louisville, 2014	Engineering Funda	JB Speed School of Engineering	Sar, Bibhuti K.	Professor	PHD, Virginia Commonwealth University, 1994	Kent School of So	Kent School of Social Work
Rockaway, Thomas Doan	Professor	PHD, Georgia Inst of Technology, 1997	Civil & Environme	JB Speed School of Engineering	Sathitsuksana, Noppadon	Associate Professor	PHD, Virginia Tech University, 2011	Chemical Engineer	JB Speed School of Engineering
Roebuck, Regina	Associate Professor	PHD, Cornell University, 1995	Modern Languages	College of Arts and Sciences	Satterwhite, Marc Thomas	Professor	DMA, Indiana University, 1991	Music	School of Music
Roelfs, David John	Associate Professor	PHD, Stony Brook University, 2011	Sociology	College of Arts and Sciences	Scarfe, William C.	Professor	DDS, University of Adelaide, 1982		School of Dentistry
Rollins, Aaron C	Associate Professor	PHD, Mississippi State University, 2013	Urban & Public Af	College of Arts and Sciences	Schneider, Stephen Anthony	Associate Professor	PHD, Pennsylvania State University, 2007	English	College of Arts and Sciences
Rosen, Paul Jerome	Associate Professor	PHD, University of Kentucky, 2008	Psychology	College of Arts and Sciences	Schultz, David Jay	Professor	PHD, Penn State University, 1996	Biology	College of Arts and Sciences
Ross, Edna L.	Professor Term	PHD, Kent State University, 1975	Psychology	College of Arts and Sciences	Scobee, Matthew W	Assistant Professor Term	PHD, University of Kentucky, 1997	Mathematics	College of Arts and Sciences
Rothstein, Laura	Professor ^A	JD, Georgetown University, 1974	Law	School of Law	Scott, David Albert	Professor	PHD, McGill University, 1997		School of Dentistry
Rouchka, Eric Christian	Professor	DSC, Washington University in St Louis, 2002	Biochemistry & Mo	School of Medicine	Scott, Terry M	Professor ^A	PHD, University of Oregon, 1994	Special Education	College of Education and Human Development
Rougier, Guillermo Walter	Professor	PHD, Buenos Aires University, 1993	Anatomical Scienc	School of Medicine	Segal, Janna G	Associate Professor	PHD, Univ of California, Irvine, 2008	Theatre Arts	College of Arts and Sciences
Roussel, Thomas	Associate Professor	PHD, University of Louisville, 2014	Bioengineering	JB Speed School of Engineering	Seif, Steven W.	Associate Professor	PHD, University of Illinois-Chicago, 1989	Mathematics	College of Arts and Sciences
Running, Mark Paul	Professor	PHD, California Inst of Technology, 1997	Biology	College of Arts and Sciences	Sen, Utpal	Professor	PHD, University of Kalyani, 2001	Physiology	School of Medicine

Sephton, Sandra	Professor	PhD, Brigham Young University, 1995	Psychology	College of Arts & Sciences	Smith-Tone, Daniel C	Associate Professor	PHD, Indiana University, 2010	Mathematics	College of Arts and Sciences
Sheffield, Caroline Connors	Associate Professor	PHD, University of South Florida, 2009	Middle and Second	College of Education and Human Development	Snyder, James Walter	Professor	PHD, University of Dayton, 1974	Pathology	School of Medicine
Sheridan, Mary P	Professor	PHD, University of Illinois, UC, 2000	English	College of Arts and Sciences	Sohn, Steve H	Associate Professor	PHD, University of Connecticut, 2006	Communication	College of Arts and Sciences
Shreffler, Megan Beth	Associate Professor	PHD, Univ of Minnesota Twin Cities, 2013	Health & Sports S	College of Education and Human Development	Song, Zhao-Hui	Professor	PHD, University of Minnesota, 1992	Pharmacology and	School of Medicine
Shuck, Michael B	Professor	PHD, 2010	Educational Leader	College of Education and Human Development	Song, Wei	Professor	PHD, Ohio State University, 2000	Geography/ Geoscience	College of Arts and Sciences
Shumway, Brian S	Professor	DDS, The Ohio State University, 2003		School of Dentistry	Soucy, Patricia Sara Arauz	Associate Professor	PHD, Johns Hopkins University, 2010	Bioengineering	JB Speed School of Engineering
Shuster, Brett Arthur	Professor	DMA, Arizona State University, 2002	Performance Studies	School of Music	Staat, Robert			Pharmacology & Toxicology/ Medicine	Dentistry
Silveira, Anibal M.	Professor	DDS, University of Brazil, 1977		School of Dentistry	Stanev, Hristomir Atanasov	Associate Professor	PHD, University of Chicago, 2009	English	College of Arts and Sciences
Simmons, Thomas J	Associate Professor	PhD, Kent State University, 1989	Special Education	College of Education & Human Development	Stansel, Ian Robert	Associate Professor	PHD, University of Houston, 2012 MFA, University of Iowa, 2005	English	College of Arts and Sciences
Simpson, David M	Professor*	PhD, University of California, Berkeley, 1996	Urban & Public Affairs	College of Arts & Sciences	Starr, Thomas L.	Professor	PHD, University of Louisville, 1976	Chemical Engineer	JB Speed School of Engineering
Singel, Rachel Jeanne	Associate Professor	MFA, University of Iowa, 2013	Fine Arts	College of Arts and Sciences	States, J. Christopher	Professor	PHD, Albany Medical College, 1980	Pharmacology and	School of Medicine
Singleton, Jacqueline Ann	Professor	PHD, University of Louisville, .		School of Dentistry	Steffen, Joseph M.	Professor	PHD, University of New Mexico-Main Campus, 1980	Biology	College of Arts and Sciences
Siskind, Leah J	Professor	PHD, University of Maryland, 2003	Pharmacology and	School of Medicine	Steinbach, Rankins, Jill Marie	Associate Professor	PHD, Arizona State University, 2009	Bioengineering	JB Speed School of Engineering
Skaggs, Steven	Professor		Fine Arts	College of Arts and Sciences	Stetson, Barbara Ann	Associate Professor	PHD, Vanderbilt University, 1991	Psychology	College of Arts and Sciences
Sloan, Chad Richard	Associate Professor		Performance Studies	School of Music	Stevens, Forrest Robert	Associate Professor	PHD, University of Florida, 2015	Geography/ Geoscience	College of Arts and Sciences
Smadici, Serban	Associate Professor	PHD, Columbia University in the Cit, 2005	Physics	College of Arts and Sciences	Stilp, Christian Edmund	Associate Professor	PHD, Univ of Wisconsin-Madison, 2009	Psychology	College of Arts and Sciences
Smith, Remington Spencer Drew	Associate Professor	MFA, University of Iowa, 2014	Communication	College of Arts and Sciences	Stirling, David Paul	Associate Professor	PHD, University of British Columbia, 2005		School of Medicine
Smith Jones, Siobhan Elizabeth	Associate Professor	PHD, University of Missouri, 2010	Communication	College of Arts and Sciences	Storey, Angela Diane	Associate Professor	PHD, University of Arizona, 2016	Anthropology	College of Arts and Sciences

Story, Kaila A	Associate Professor*	PHD, Temple University, 2007	Women's & Gender	College of Arts and Sciences	Thompson, Angela Knight	Associate Professor	PHD, University of Louisville, 2011	Engineering Funda	JB Speed School of Engineering
Stout, William D.	Associate Professor†	PHD, University of South Florida, 1997	Accountancy	College of Business	Tillquist, Christopher R.	Associate Professor	PHD, University of Arizona, 2002 MPH, University of Arizona, 2000	Anthropology	College of Arts and Sciences
Stremel, Richard			Physiology						
Sullivan, Clare Elizabeth	Professor	PHD, New York University, 2002	Modern Languages	College of Arts and Sciences	Tkweme, WS	Assistant Professor	PHD, University of Massachusetts, 2007	Pan African Studi	College of Arts and Sciences
Sumanasekera, Gamini U.	Professor	PHD, Indiana University, 1995	Physics	College of Arts and Sciences	Tone, Cristiana	Associate Professor	PHD, Indiana University, 2010	Mathematics	College of Arts and Sciences
Sun, Zhihui	Professor	PHD, Northwestern University, 2005	Civil & Environme	JB Speed School of Engineering	Tracy, Michael	Professor		Performance Studi	School of Music
Sun, Jeffrey C.	Professor†	PHD, Teachers College Columbia Univ, 2012 JD, Ohio State University, 1998	Educational Leade	College of Education and Human Development	Tretter, Thomas R	Professor	EDD, Univ of NC at Chapel Hill, 2004	Middle and Second	College of Education and Human Development
Sunkara, Mahendra K.	Professor	PHD, Case Western Reserve Univ, 1993	Chemical Engineer	JB Speed School of Engineering	Tseng, Michael	Professor	PhD, University at Buffalo, SUNY, 1973	Anatomical Sciences & Neurobiology	School of Medicine
Swanson, David	Associate Professor	PHD, Indiana University, 2000	Mathematics	College of Arts and Sciences	Turner, Joseph A	Associate Professor	PHD, University of Delaware, 2014	English	College of Arts and Sciences
Swartz, Kristin M	Associate Professor	PHD, University of Cincinnati, 2012	Criminal Justice	College of Arts and Sciences	Tyagi, Suresh C	Professor*	PHD, University of Alighrah, 1980	Physiology	School of Medicine
Taniguchi, Hiromi	Associate Professor	PHD, Princeton University, 1997	Sociology	College of Arts and Sciences	Tyagi, Neetu	Associate Professor	PHD, Central Drug Research Inst, 2002	Physiology	School of Medicine
Tanner, Denise Jane	Instructor Term	MFA, Spalding University, 2004	English	College of Arts and Sciences	Tyler, Larry D.	Professor	PHD, University of Louisville, 1985	Engineering Funda	JB Speed School of Engineering
Taylor, Kira Creswell	Associate Professor	PHD, Emory University, 2009	Epidemiology & Po	School of Public Health and Information Sciences	Usher, John Stephen	Professor†	PhD, North Carolina State University, 1987	Industrial Engineering	JB Speed School of Engineering
Terson de Paleville, Daniela	Associate Professor	PHD, University of Louisville, 2011	Health & Sports S	College of Education and Human Development	Valdes, Roland	Professor^	PHD, University of Virginia-Main Campus, 1976	Pathology	School of Medicine
Theriot, Nancy	Professor	PhD, University of New Mexico, 1983	Women's, Gender & Sexuality Studies	College of Arts & Sciences	Vandembroucke, Russell	Professor†	DFA, Yale University, 1978	Counseling and Hu	College of Education and Human Development
Thielo, Angela J	Assistant Professor	PhD, University of Cincinnati, 2017	Criminal Justice	College of Arts & Sciences	Vetvicka, Vaclav	Professor	PHD, Czechoslovak Acad of Sci, 1983	Theatre Arts	College of Arts & Sciences
Thomas, Mary Shelley	Associate Professor	EDD, Columbia University, 2003	Middle and Second	College of Education and Human Development	Vidoni, Carla	Associate Professor	PHD, The Ohio State Univ, 2005	Pathology	School of Medicine
					Vito, Gennaro Francis	Professor†^	PHD, Ohio State University, 1978	Health & Sports S	College of Education and Human Development
								Criminal Justice	College of Arts and Sciences

Wagner, Lisa	Associate Professor	PHD, Ohio State University, 1999	Modern Languages	College of Arts and Sciences	Willey, Ann Elizabeth	Professor	PHD, Northwestern University, 1993		Office of the Executive Vice President and University Provost
Walker, Kandi L	Professor	PHD, University of Denver, 1999	Communication	College of Arts and Sciences					
Walker, Margath Alexya	Associate Professor	PHD, University of Kentucky, 2009	Geography/ Geoscience	College of Arts and Sciences	Williams, Michael L.	Associate Professor Term	PHD, University of Louisville, 2007	Comparative Humanities	College of Arts and Sciences
Wallace, Sherri L	Professor	PHD, Cornell University, 1995	Political Science	College of Arts and Sciences	Williams, Stuart Joseph	Associate Professor	PHD, Purdue University, 2009	Mechanical Engine	JB Speed School of Engineering
Wallace-Boaz, Krista Brooke	Professor	DMA, Northwestern University, 2004	Performance Studi	School of Music	Williams, Stuart Joseph	Associate Professor	PhD, Purdue University, 2009	Mechanical Engineering	JB Speed School of Engineering
Wallis, Anne Baber	Associate Professor Term	PHD, Johns Hopkins University, 2003	Epidemiology & Po	School of Public Health and Information Sciences	Williams, Bronwyn T.	Professor	PHD, University of New Hampshire, 2000	English	College of Arts and Sciences
Walsh, Kevin M.	Professor*	PHD, University of Cincinnati, 1992		JB Speed School of Engineering	Williger, Gerard Michael	Professor	PHD, Cambridge University, 1992	Physics	College of Arts and Sciences
Wang, Huizhi			Dentistry		Willing, Gerold A	Professor	PHD, Auburn University, 2001	Chemical Engineer	JB Speed School of Engineering
Warawa, Jonathan Mark	Associate Professor	PHD, University of Bristol, 2002	Microbiology and	School of Medicine	Wise, John Pierce	Professor	PHD, George Washington University, 1994	Pharmacology and	School of Medicine
Washington, Ahmad Rashad	Associate Professor	PHD, University of Iowa, 2013	Counseling and Hu	College of Education and Human Development	Wise, Sandra Suanne	Assistant Professor Term	PHD, University of Maine, 2013	Pharmacology and	School of Medicine
Watters, James Charles	Professor	PHD, University of Maryland, 1977	Chemical Engineering	JB Speed School of Engineering	Wittebort, Richard J.	Professor	PHD, Indiana University, 1978	Chemistry	College of Arts and Sciences
Welch, Karla Conn	Associate Professor	PHD, Vanderbilt University, 2009	Electrical & Comp	JB Speed School of Engineering	Wittliff, James			Biochemistry & Molecular Biology	
Wendel, Monica Lynn	Professor	DRPH, Texas A&M University, 2009 MPH, Texas A&M University, 2002	Health Promotion	School of Public Health and Information Sciences	Wolek, Krzysztof	Professor	PHD, University of Chicago, 2008	Music	School of Music
Westerfeld, Jennifer Taylor	Associate Professor	PHD, University of Chicago, 2010	History	College of Arts and Sciences	Wolph, Jean Carol	Instructor Term			College of Education and Human Development
Whittemore, Scott R.	Professor**	PHD, University of Vermont, 1982		School of Medicine	Woo, Hong Ryun	Associate Professor	PHD, University of Iowa, 2013	Counseling and Hu	College of Education and Human Development
Wildstrom, David Jacob	Associate Professor	PHD, University of CA, San Diego, 2007	Mathematics	College of Arts and Sciences	Worley, Micah J	Associate Professor	PHD, Oregon Health & Science University, 2000	Biology	College of Arts and Sciences
					Wu, Dongfeng	Professor	PHD, Univ of CA, Santa Barbara, 1999	Bioinformatics &	School of Public Health and Information Sciences

Wu, Ming	Assistant Professor Term	PHD, Communication Univ of China, 2008	Modern Languages	College of Arts and Sciences	Zhang, Hui	Associate Professor	PHD, Indiana University, 2008	Computer Engineer	JB Speed School of Engineering
Yampolskiy, Roman Vladimirovich	Associate Professor	PHD, SUNY at Buffalo, 2008	Computer Engineer	JB Speed School of Engineering	Zhao, Jianhua	Associate Professor	PHD, University of Pittsburgh, 2008	Anthropology	College of Arts and Sciences
Yang, Li	Associate Professor	PHD, North Carolina State Univ, 2022	Industrial Engine	JB Speed School of Engineering	Zheng, Qi	Associate Professor	PHD, Clemson University, 2013	Bioinformatics &	School of Public Health and Information Sciences
Yankeelov, Pamela Anne	Professor	PHD, University of Louisville, 1995	Kent School of So	Kent School of Social Work	Zhou, H.Sam			Pharmacology & Toxicology/ Surgery	
Yanoviak, Stephen P	Professor*	PHD, University of Oklahoma, 1999	Biology	College of Arts and Sciences	Zhu, Xuwen	Assistant Professor	PhD, University of Alabama, 2016	Mathematics	College of Arts & Sciences
Yoder-Himes, Deborah Ruth	Associate Professor	PHD, Michigan State University, 2005	Biology	College of Arts and Sciences	Ziegler, Charles E.	Professor†	PHD, University of Illinois, UC, 1979	Political Science	College of Arts and Sciences
York, Paul Andrew Diebold	Professor		Performance Studi	School of Music	Zurada, Jacek M.	Professor^	PHD, Gdansk University of Technology, 1975	Electrical & Comp	JB Speed School of Engineering
Yu, Ming	Professor	PHD, Hokkaido Inst of Technology, 1995	Physics	College of Arts and Sciences					
Zahorik, Pavel	Associate Professor*	PHD, University of Wisconsin, 1998		School of Medicine	//				
Zamborini, Francis Patrick	Professor	PHD, Texas A&M University, 1998	Chemistry	College of Arts and Sciences	†Department Chair, *Endowed Chair, ^Distinguished Scholar				
Zeng, Wei-Bin	Associate Professor	PHD, University of Pittsburgh, 1988	Mathematics	College of Arts and Sciences	Faculty census term: Fall 2022				
Zeng, Li	Associate Professor	PHD, University of Toronto, 1997	Modern Languages	College of Arts and Sciences	Graduate Courses A-Z				
Zhang, Qunwei	Professor	PHD, Fukui Medical University, 2000 MD, Fujiang Medical University, 1989	Epidemiology & Po	School of Public Health and Information Sciences					
Zhang, Charlie Haifeng	Professor	PHD, University of South Carolina, 2006	Geography/ Geoscie	College of Arts and Sciences	Graduate Course Index				
Zhang, Sumei	Associate Professor	PHD, Ohio State University, .	Urban & Public Af	College of Arts and Sciences	Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm).				
Zhang, Xiang	Professor	PHD, Purdue University, 2001	Chemistry	College of Arts and Sciences	500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.				
Zhang, Huang-Ge	Professor*	PHD, Mississippi State University, 1994 DVM, Vet College of Inner Mongolia, 1985 MD, Med School of Inner Mongolia, 1982	Microbiology and	School of Medicine					

Graduate Courses A-Z



Graduate Course Index

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

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Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

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Accounting (ACCT)

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ACCT 500. Fundamentals of Accounting 3 Units

Description: Fundamental principles of accounting needed by the manager. Topics include the assumptions of accounting, recording and reporting transactions; interpretation of data for decision-making purposes.

Note: Fulfills a Foundation Core requirement only.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ACCT 526. Finance and Accounting Applications in Logistics and Distribution 3 Units

Prerequisite(s): MKT 525.

Description: Fundamental principles of accounting and finance as applied to logistics and distribution as needed by managers.

Note: This course does not fulfill credit for MBA.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ACCT 611. Cost and Operations Management 3 Units

Prerequisite(s): Admittance to the Master of Accountancy Program.

Description: An integrated course using traditional and innovative cost accounting and production management techniques and concepts to analyze decisions necessary to produce goods and provide service.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ACCT 615. Advanced Financial and Governmental Accounting 3 Units

Prerequisite(s): Admittance to the Master of Accountancy program.

Description: Coverage of financial reporting rules and processes for business combinations and governmental and not-for-profit organizations from both a reporting and decision - making perspective.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ACCT 620. Management Control Systems 3 Units

Term Typically Offered: Occasionally Offered

Prerequisite(s): MBA 625.

Description: Uses of accounting systems in aiding management control. Transfer pricing, managed costs, cost centers, performance centers, investment centers, activity based management.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ACCT 631. Federal Taxation 3 Units

Prerequisite(s): Admittance to the Master of Accountancy Program.
Description: Focus is on the individual taxpayer. Coverage includes federal income tax of the individual, income taxation of estates and trusts, retirement and family tax planning, and the estate and gift tax. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ACCT 641. Financial Accounting and Professionalism 3 Units

Prerequisite(s): Admittance to the Master of Accountancy Program.
Description: Covers the standard setting process for generally accepted accounting principles. Includes application of GAAP to create financial statements. Additional focus on the ethical and professional expectations of the CPA. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ACCT 651. Auditing and Systems 6 Units

Prerequisite(s): Admittance to the Master of Accountancy Program.
Description: Focuses on the design, implementation and documentation of accounting information systems. Emphasis also placed on the internal control system and proper audit trails. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ACCT 655. Special Topics in Accounting 3 Units

Prerequisite(s): Admittance to the Master of Accountancy Program.
Description: Explores a variety of topics in accounting, auditing, or taxation. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ACCT 661. Enterprise Resource Planning Systems 3 Units

Prerequisite(s): CIS 610 and CIS 615; or admittance to the Master of Accountancy Program.
Description: Focuses on the features of an ERP system, the implementation of ERP systems, and internal control issues related to ERP systems. The use of ERP systems in conjunction with electronic commerce will be featured. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ACCT 680. Special Topics in Accounting 1-6 Units

Description: An advanced study of one or more selected topics or issues related to the study of Accounting. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ACCT 698. Research Seminar in Accounting 1-3 Units

Prerequisite(s): MBA 625 and permission of the Director of the School of Accountancy. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Anatomical Sciences and Neurobiology (ASNB)

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Course Fees

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ASNB 502. Fundamentals of Neuroscience 3 Units

Term Typically Offered: Fall Only
Prerequisite(s): PSYC 355 or permission of instructor.
Description: Basics of cellular and systems neuroscience are taught through a combination of lectures and laboratories. Topics include: electrical potentials in the nervous system, synaptic transmission, somatosensory pathways, special senses (vision, hearing, balance, taste, and smell), eye movements, motor systems and higher functions (language, sleep and wakefulness, cognition, emotion and memory).
Note: Credit may not be earned in both ASNB 502 and ASNB 602.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ASNB 514. Molecular Neuroscience - CUE 3 Units

Term Typically Offered: Fall Odd Years
Description: Prerequisites or corequisites: ASNB 502, BIOL 241, BIOL 329, BIOL 415, Instructor Permission The purpose of this course in Molecular Neuroscience is to explore the molecular and cellular basis of nervous system development, function and diseases. The course will provide intellectual tools and skills to evaluate novel hypotheses and mechanisms in neuroscience. Special emphasis of the course will be to provide basic technical knowledge and tools to apply molecular biology concepts in the ongoing research in any area of neuroscience.
Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ASNB 517. Seminar on Developmental Neurobiology - CUE 3 Units

Term Typically Offered: Spring Even Years

Prerequisite(s): ASNB 502, and BIOL 329 or ASNB 514.

Description: The purpose of this course is to provide the student with a basic understanding of the processes and mechanisms of neural development. Specific topics include emergence of the neural primordium, patterning and growth of the nervous system, neuronal determination, axonal navigation and targeting, neuron survival and death, synapse formation, synaptic refinement and the formation of specific connections.

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ASNB 530. Origin of Mammalian Sensory Systems and Comparative Neurobiology - CUE 3 Units

Term Typically Offered: Fall Even Years

Prerequisite(s): PSYC 305, or permission of instructor.

Description: This course examines the phylogenetic and developmental history of the mammalian senses with a focus on the integration of anatomy, neurobiology, and fossil evidence. We will study how our understanding of non-human vertebrates (both model and non-model organisms) can provide important insights into the structure and function of the modern mammalian senses and their brain correlates.

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ASNB 566. Synaptic Organization of the Central Nervous System - CUE 3 Units

Term Typically Offered: Spring Odd Years

Prerequisite(s): ASNB 502.

Description: The purpose of this course is to provide the student with a basic understanding of synaptic circuits and the techniques used to study them. Each week we will focus on a different brain region or circuit. During the first meeting of each week the instructor will provide an overview of the topic which includes both lecture and reading material. During the second meeting of each week, students will meet with a graduate student teaching assistant to review and discuss the course material presented that week.

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ASNB 601. Gross Anatomy 6.5 Units

Prerequisite(s): Permission from course director at least two weeks before beginning of course.

Description: Primarily a laboratory course. Major emphasis is upon cadaver dissection, but lectures, group discussions, informal laboratory conferences, demonstrations, X-ray presentations are frequent. Correlation of function with structure is stressed in all areas. See Medical School Freshman Schedule for time.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ASNB 602. Fundamentals of Neuroscience 4 Units

Description: Basics of cellular and systems neuroscience are taught through a combination of lectures, laboratories, and independent study. Lectures concurrent with ASNB 502; one added lecture hour each week covers advanced topics through recent article readings and discussion. Topics covered include: electrical potentials in the nervous system, synaptic transmission, somatosensory pathways, special senses (vision, hearing, balance, taste, and smell), eye movements, motor systems, and higher functions (language, sleep and wakefulness, cognition, emotion and memory).

Note: Credit may not be earned for both ASNB 502 and ASNB 602.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ASNB 605. Human Embryology 3 Units

Prerequisite(s): Permission from course director at least two weeks before beginning of course.

Description: The 2012 embryology course is trying to emphasize the clinical aspect of embryology and to allow students to better understand the importance of this particular pre-clinical subject in their medical education. The embryology material is divided into 7 modules, organized by anatomical systems. Although embryology course runs over 8 weeks period, as much as possible, we tried to match your embryology material with the gross anatomy and histology. Modules contain: descriptive developmental embryology lectures, clinical lectures.

Note: Cross-listed with IDEP 865.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ASNB 606. Anatomy Seminar 1 Unit

Prerequisite(s): ASNB 602 as a pre-requisite or a co-requisite and restricted to Anatomical Sciences and Neurobiology graduate students.

Description: Presentations and discussions of individual research or topics of current anatomical interest throughout the year.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- ASNB 608. Neural Systems** **4 Units**
Prerequisite(s): ASNB 607 or consent of course director at least 2 weeks before course begins.
Description: Topics covered include: electrical potentials in the nervous system, synaptic transmission, somatosensory pathways, special senses (vision, hearing, balance, taste, smell), eye movements, motor systems, higher functions (language, sleep and wakefulness, learning and memory). Emphasis is placed on clinical relevance.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ASNB 610. Neuroscience Methods** **1-2 Units**
Grading Basis: Pass/Fail
Prerequisite(s): ASNB 502 or ASNB 602, or consent of the Course Director.
Description: The primary goal of the Methods course is to provide graduate students with the framework to become familiar with key tools and techniques used in neuroscience research. One method will be learned per credit hour in a laboratory of the students choosing. By the end of the semester, each student will generate a written step-by-step protocol of the technique learned along with a two page description (double-spaced) of the method and its use.
Note: Cross-listed with BIOC 610, MBIO 610, PHTX 610, and PHXB 610.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ASNB 614. Molecular Neuroscience** **4 Units**
Prerequisite(s): Consent of instructor.
Description: Structure and function of the nervous system from a molecular perspective. Includes description of membrane proteins, channels and receptors in neurons and glia. Discussion of the role of such molecular structures in the nervous system.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ASNB 616. Special Projects in Anatomy** **1-15 Units**
Prerequisite(s): Permission from instructor at least two weeks before beginning of course.
Description: This course, to be arranged to fit individual needs, is intended primarily to accommodate students with special backgrounds in anatomy; it may also be offered for others who have special needs for other advanced training. May be offered each quarter. Schedule to be arranged.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ASNB 617. Seminar on Developmental Neurobiology** **3 Units**
Prerequisite(s): Consent of instructor.
Description: Covers neural development from neurulation through development of integrated systems. Emphasis will be on the cellular level.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ASNB 618. Laboratory Rotation** **1-3 Units**
Grading Basis: Pass/Fail
Prerequisite(s): Consent of instructor.
Description: This course will expose new graduate students to the research conducted in laboratories of the faculty of the Department of Anatomical Sciences Neurobiology. The objectives of the laboratory rotations are to expose doctoral students to different approaches and areas of research, and to assist the student in choosing a laboratory for dissertation research.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ASNB 619. Original Investigations** **1-15 Units**
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ASNB 620. Thesis** **1-6 Units**
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ASNB 630. Origin of Mammalian Sensory Systems and Comparative Neurobiology** **4 Units**
Term Typically Offered: Fall Even Years
Prerequisite(s): ASNB 502 or ASNB 602 or permission of instructor.
Description: This course examines the phylogenetic and developmental history of the mammalian senses with a focus on the integration of anatomy, neurobiology, and fossil evidence. We will study how our understanding of non-human vertebrates (both model and non-model organisms) can provide important insights into the structure and function of the modern mammalian senses and their brain correlates.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ASNB 666. Synaptic Organization of the Central Nervous System** **3 Units**
Description: An overview of the synaptic organization of the central nervous system will be covered through lectures and discussion of seminal systems neuroscience journal articles.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ASNB 671. General and Oral Histology** **5 Units**
Prerequisite(s): Oral Biology major or related field.
Description: Provides knowledge of histological structure including ultrastructure of tissues and organs. Oral structures presented in detail.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ASNB 672. Integrated Biomedical Sciences II 11 Units**Term Typically Offered:** Spring Only**Prerequisite(s):** Enrollment in the School of Dentistry, Oral Biology major or related field or consent of course director.**Description:** This course is designed specifically for first-year dental students. The primary goal of the course is to introduce clinically-oriented principles of the gastro-intestinal (GI) tract, head, and neck regions integrating gross anatomy, neuroanatomy, histology, physiology, biochemistry, and embryology. The course is also designed to foster critical thinking skills necessary for students to utilize their knowledge of these regions to evaluate the health of patients and to solve clinical problems. Anatomical donor prosection is the focal point of all teaching activities, allowing students to develop a three-dimensional/functional appreciation for the relationships of the various structures of these regions.**Note:** Cross-listed with BMSC 809.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ASNB 675. Advanced Head and Neck Anatomy 2 Units**Prerequisite(s):** One of the following: 1) Admission to the MS Oral Biology program; 2) a DDS, DMD, MD, or DO degree or its foreign equivalent; 3) consent of the course director.**Description:** Advanced topics in the anatomic relations of the head and neck as applicable to the post-graduate health professional, with major emphasis on cadaver dissection.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ASNB 677. Current Topics in Sensory Systems Research 1 Unit**Grading Basis:** Pass/Fail**Prerequisite(s):** Consent of course director at least 2 weeks before course begins.**Description:** Recent research directed toward understanding the organization and function of the auditory, gustatory, olfactory, somatosensory, and visual systems will be presented and critiqued.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ASNB 816. Special Project-Anatomy 1-16 Units**Prerequisite(s):** Permission of the instructor.**Description:** This course is offered to meet the individual needs of students whose background exempts them from portions of the traditional anatomy courses or students who desire advanced study. The student and any faculty member design the course together. Credits and schedule to be arranged.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ASNB 909. Independent Study or Research 1-16 Units**Prerequisite(s):** Permission of the instructor.**Description:** This course is designed to provide an in-depth study of anatomy working with a faculty member in the field of the students' interest. Goals: The student will develop with the supervising faculty member's approval objectives and a plan of study which will meet the academic needs.**Note:** Method of Evaluation to be determined by the supervising faculty member.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Anthropology (ANTH)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

ANTH 507. Space, Place and Culture 3 Units**Term Typically Offered:** Occasionally Offered**Prerequisite(s):** Graduate status, or consent of instructor.**Description:** This course is organized around the question of how culture is spatially distributed. How are specific spaces and places constructed, connected, and interpreted through cultural practices?

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ANTH 508. History of Anthropology - WR, CUE 3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** Senior status, and 18 hours of Anthropology credits.**Description:** The course provides an integrated introduction to a history of theory and practice in anthropology. Interleaving examples from cultural, archaeological, and biological anthropology, the course delves into understanding anthropological work as the production of knowledge. Encountering elements from the traditional corpus of anthropological literature, as well as contrarian pieces, students will refine their abilities to hold an informed anthropological perspective, even as they reconcile and come to understand inconsistencies in the past practice of anthropology. This course is designed to furnish a strong basis for postbaccalaureate study and applied anthropological practice.**Note:** Anthropology graduate students cannot enroll in this class.**Note:** Approved for the Arts and Sciences upper-level requirement in written communication (WR).**Course Attribute(s):** CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ANTH 509. Archaeological Theory and Methods - WR 3 Units**Prerequisite(s):** Junior or senior status, and 18 hours of Anthropology credits.**Description:** Archaeological theory and methods emphasizing basic practices and procedures in research skills and writing in archaeology.**Note:** Approved for the Arts and Sciences upper-level requirement in written communication (WR).**Note:** Anthropology graduate students cannot enroll in this class.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ANTH 510. Methods in Biological Anthropology - WR 3 Units**Term Typically Offered:** Occasionally Offered**Prerequisite(s):** ANTH 202, and either ANTH 303 or ANTH 353.**Description:** Bio-anthro methods, general approaches to research, and data management skills. Covers anthropometric variation and analysis of molecular data.**Note:** Anthropology graduate students may not enroll in this course.**Note:** Approved for the Arts and Sciences upper-level requirement in written communication (WR).

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ANTH 511. Ethnographic Methods - WR 3 Units**Term Typically Offered:** Occasionally Offered**Prerequisite(s):** Junior or senior status, and 18 hours of Anthropology credits.**Description:** Explores the range of qualitative research methods and techniques. Emphasis is on designing and developing a research project and conducting ethnographic fieldwork.**Note:** Approved for the Arts and Sciences upper-level requirement in written communication (WR).**Note:** Anthropology graduate students cannot enroll in this class.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ANTH 512. Methods in Skeletal Forensics - WR 3 Units**Term Typically Offered:** Occasionally Offered**Prerequisite(s):** ANTH 202 or ANTH 204, and ANTH 327, and ANTH 410.**Description:** This course trains students in the methods for documenting and preparing a skeletal forensics analysis report. Students will analyze a set of skeletal remains of an "unknown" individual or individuals, catalog and enter each element into a database for analysis, analyze the results, and write a report of the unknown individual(s) including species, age, ancestry, stature, sex and any trauma or pathologies present. Students will produce a documented report of the remains that could be entered as evidence and stand scrutiny of a court or coroner's rendering.**Note:** Approved for the Arts and Sciences upper-level requirement in written communication (WR).

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ANTH 517. Anthropology of China 3 Units**Term Typically Offered:** Fall Only**Prerequisite(s):** Graduate standing or permission of the instructor.**Description:** It is widely acknowledged that China is a rising power in the global political economy. However, with the coexistence of tradition and modernity, the nature of Chinese culture and society remains heavily debated. This course explores a wide range of topics and issues that constitute the socio-cultural fabric of contemporary mainland Chinese society. These topics include, but are not limited to, family, gender, ethnicity, religion, education, politics, and economics. Our investigation will focus on two broad themes: 1) the unity and diversity of Chinese society, and 2) the continuity and change that took place from late traditional China to the present. The goal of this course includes learning various aspects of Chinese culture and society, studying diverse anthropological approaches to the study of China, and examining the political dimensions of representation.**Note:** Cross-listed with AST 517.**Note:** Students may not receive credit for this course and ANTH 317 or AST 317.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- ANTH 522. Ecology, Politics and Culture** 3 Units
Description: This course examines the relations between ecology, economic system, culture, ideology and power relations. The focus moves back and forth between theoretical synthesis and case studies. The case studies are both ethnographic and historical. A few of the themes treated in detail: the role of religious ritual in regulating certain environments; the mutual influences of ecology and political economy in the making of "the Third World"; the local and global politics of national parks; combined and uneven development. Stress is laid on political ecology as a complex, shifting, analytical framework. Questions of sustainability weave in and out of the proceedings. Also emphasized: the story of ecological analysis over the last seventy years is a story about changing relations between anthropology and other social sciences. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ANTH 526. Archaeology as Practice** 3 Units
Prerequisite(s): ANTH 204.
Description: This course focuses on the analytical techniques that archaeologists use to study the past. Students will learn the practice of archaeology emphasizing modern methods of survey, excavation and analysis used to investigate the past. By the end of the course, students will have learned how to construct their own research plan, collect and analyze their data and draw inferences about the past. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ANTH 528. Animals and Humans** 3 Units
Description: This course explores the complex and often contradictory ways that humans interact with animals. We cover a range of topics emerging from a multidisciplinary perspective including the origins of hunting and domestication: modern animal economies; cross-cultural attitudes toward animals; symbolic representations of animals in art, literature, religion and folklore; animals as companions; and the status of animals, both wild and domestic, in contemporary society. Students will gain a broad, cross-cultural perspective on the relationship humans have with the rest of the animal kingdom, focused mainly on other mammals. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ANTH 529. Zooarchaeology** 3 Units
Prerequisite(s): Graduate student status.
Description: The course will provide basic instruction in the identification of animal remains commonly recovered from archaeological sites. It will follow a taphonomic approach to zooarchaeology with an emphasis on understanding and interpreting the formation of archaeological faunal assemblages. The course examines approaches to using bone data to construct and investigate archaeological questions. Students will engage in hands-on identification and interpretation of animal remains commonly found in archaeological sites. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ANTH 530. Human Impacts on Past Environments** 3 Units
Prerequisite(s): Graduate status, or consent of instructor.
Description: This course is about the archaeological and paleoecological record of past human impacts on Earth. We will explore a number of concepts regarding socio-natural systems including land degradation, perception, resilience and sustainability. The course will provide a background for understanding the ways archaeologists and paleoecologists reconstruct past environments and recognize human impacts. We will examine a number of global case studies and discuss the possible lessons for current and future decision-making in human land-use. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ANTH 531. Anthropology of Water** 3 Units
Description: Explores the political ecology of water from prehistory to present; integrates the archaeological and historical record with contemporary examples of water management; emphasis on privatization, globalization, and health. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ANTH 534. Food and Farm Movements in the Americas** 3 Units
Description: An overview of social and political activism associated with agriculture and food. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ANTH 535. Nutritional Anthropology** 3 Units
Description: This course provides students with a broad overview of topics in nutritional anthropology; an area of study that is highly multidisciplinary. Students will learn to critically think about the impact of culture concerning the current understanding of nutrition in a biocultural context. The course will range over nutritional aspects of human evolution, federal perspectives on nutrition, aspects of nutritional epidemiology, food and ethnicity, food and self, and obesity as culture bound syndrome. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ANTH 540. Health and Civilization** 3 Units
Term Typically Offered: Occasionally Offered
Prerequisite(s): Graduate status, or consent of instructor.
Description: The central goal of this course is to understand how at multiple bio-cultural levels human populations (past and present) respond to their surroundings and social contexts, and how their responses can affect human health, the environment, and their own adaptation. To achieve this goal, the course will be focused on human lifestyle changes, the emerging of new diseases, and epidemiological transitions developed after the agricultural revolution and after the rise of complex, interdependent, and crowded societies. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- ANTH 549. Modes of Consciousness** 3 Units
Term Typically Offered: Occasionally Offered
Description: This course is devoted to examining how consciousness mediates between humans and the wider material world. While all of the concepts central to anthropology and the other social sciences—culture, society, evolution, history, mind, politics, economics—are premised in consciousness, the premise receives attention only sporadically. The attention that has been paid reveals that consciousness is not uniform. It has various modes. Thus the course focuses on these.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ANTH 555. Black Death: The Pandemic that Changed Human History** 3 Units
Term Typically Offered: Fall Even Years
Description: The Black Death of the fourteenth century is, perhaps, one of the most studied and discussed pandemics in human history, but still we are trying to answer different questions such as: Where did it start? How accurate is retrospective diagnosis? How did different societies and countries react against the Black Death? What were the religious and social responses to the Black Death? How did the Black Death change human populations and lifestyles? The interplay and dialogue among disciplines such as history, anthropology, and biology help us to understand how infectious diseases affect our species, and a bio-cultural approach will create a more comprehensive and holistic scenario when reconstructing the impact of epidemics on human populations.
Note: Cross-listed with ANTH 355.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ANTH 562. Special Topics in Cultural Anthropology** 3 Units
Prerequisite(s): Consent of instructor.
Description: An examination of one or more specific areas of social-cultural anthropology. Details announced each semester.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ANTH 563. Special Topics in Biological Anthropology** 1-3 Units
Description: An examination of one or more specific areas of biological anthropology. Details announced each semester.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ANTH 564. Special Topics in Archaeology** 1-3 Units
Term Typically Offered: Occasionally Offered
Prerequisite(s): ANTH 202 and ANTH 204.
Description: An examination of specific areas of archaeology. Details announced each semester.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ANTH 576. Quantitative Analysis in Anthropology** 3 Units
Term Typically Offered: Fall Even Years
Description: This course provides an introduction to the use of quantitative analysis methods in anthropological research. Topics will include descriptive statistics, hypothesis testing, and multivariate statistics. The course will focus on choosing the appropriate statistical tests to answer specific research questions, proper interpretation of results, and visual and graphical methods for displaying results. This course is not intended to be an advanced math class, and derivation of statistical tests will not be covered in detail. However, students will be expected to gain an understanding of the logic and assumptions behind each test, when it should be used, and how results should be interpreted.
Note: Cross-listed with ANTH 376.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ANTH 578. Lithic Technology** 3 Units
Prerequisite(s): Graduate status or consent of instructor.
Fee: An additional \$25.00 is charged for this course.
Description: This course provides an introduction to the study of stone tool technology. Topics to be covered include broad examination of major changes in stone tool technology during the course of human prehistory (~3.3 million - 10,000 years ago), analytical approaches commonly employed by archaeologists to interpret the lithic record, and experiential learning through knapping and lab exercises. In addition to the hands-on exercises, the course material is supported by films, and readings from the textbooks, and journal articles. Students are required to submit a literature based term paper focusing on ethnographic or archaeological case studies that incorporate lithic datasets.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ANTH 579. Ceramic Analysis** 3 Units
Description: Pottery is abundant in many archaeological sites, and the study of pottery has a long history in archaeology. Analysis and interpretation of ceramics has been used by archaeologists to accomplish varied ends: to establish a time scale, to document interconnections between different areas, sites or groups of people, and to suggest what activities were carried out at particular sites. Archaeologists also use ceramics as a basis to understand the organization of ceramic production itself as an important activity. The varied means that archaeologists use to bridge the gap between the recovery of ceramics and their interpretation is the focus of this course.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- ANTH 581. Geoarchaeology** **3 Units**
Term Typically Offered: Spring Even Years
Description: A firm grasp of geologic principles is essential for interpreting prehistoric archaeological sites, and this course provides students with a basic understanding of geoarchaeology. No prior geologic or archaeological knowledge is required to take this course. The course begins with the basics of sediments, soils, stratigraphy, and dating. This is followed by discussion of different depositional environments and their impacts on the archaeological record. Key topics include site formation processes, landscape reconstruction, and interpretation of climate change.
Note: Cross-listed with ANTH 381.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ANTH 607. Emergence of Human Culture** **3 Units**
Prerequisite(s): Graduate status.
Description: Traces of the origins and development of human culture; focus on technology, social organization, language, food acquisition and sharing, religion and art in both Old and New World.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ANTH 608. Social and Cultural Theory** **3 Units**
Prerequisite(s): Graduate status.
Description: Examination of how social and cultural theorists construct accounts of human existence that compliment and diverge from one another.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ANTH 609. Research Design: Archaeology** **3 Units**
Prerequisite(s): Graduate status.
Description: Basic practices and procedures in research skills and writing in archaeology; focus on preparing grant proposals; publications and oral presentations.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ANTH 610. Research Design: Biological Anthropology** **3 Units**
Prerequisite(s): Graduate status and consent of instructor.
Description: Review of methods, models, and theory from seminal papers and new research in anthropological genetics.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ANTH 611. Research Design: Socio-Cultural Anthropology** **3 Units**
Prerequisite(s): Graduate status.
Description: Course focuses on developing a substantive research project in cultural anthropology; students will integrate a literature review, theoretical and methodological approaches, and data collection strategies to produce a research proposal.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ANTH 612. Seminar: Contemporary Issues in Anthropology** **3 Units**
Prerequisite(s): Graduate status.
Description: Team taught course focused on the intertwined contributions of archaeology, biological and cultural anthropology to understandings of theory and method in anthropology. Themes will vary year to year.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ANTH 622. Anthropology of Violence** **3 Units**
Prerequisite(s): Graduate status.
Description: Seminar on anthropological approaches to the study of violence and human suffering, including political, structural, domestic, and criminal violence. Case studies come from different regions of the world.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ANTH 624. Black Cultural Traditions** **3 Units**
Prerequisite(s): Graduate status.
Description: Intensive and interdisciplinary approach to production of African-based traditions in the Diaspora; explores sociocultural implications of African-based literacy and arts.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ANTH 625. Globalization, Transnationalism, and Anthropology** **3 Units**
Prerequisite(s): Graduate status.
Description: Focus on globalization at the local level; how it bears on identities and how subjects construct identities in transnational spaces.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ANTH 626. Food Justice** **3 Units**
Prerequisite(s): Graduate status.
Description: This course explores the political, economic, cultural dimensions of hunger, food security, and food justice globally and locally. The concept of food justice has been deployed to capture consumption-based inequalities in access to tasty and nutritious food. The course considers not only justice in terms of dietary and culinary consumption but also such matters as land rights, intellectual patrimonies, migrant farm labor, restaurant working conditions, the concentration of grocery chains, food regulation, international trade rules related to agricultural commodities, and the environmental impacts of farming. The course concludes with a look at transnational efforts to build more just and sustainable food systems.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

<p>ANTH 627. Political Economy and Culture 3 Units Prerequisite(s): Graduate status. Description: Examines how anthropologists have used concepts and methods derived from political economy to understand markets, production, power, and cultural practices. Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>ANTH 661. Special Topics in Anthropology 3 Units Term Typically Offered: Fall, Spring, Summer Prerequisite(s): Consent of instructor, or department chair. Description: Outlines vary as to area of expertise of instructors; objectives aim at the maximum of staff utilization and meeting program needs within the University which call for studies in anthropology as that discipline interrelates with other special knowledge. Note: Students may take the course as often as topics vary, up to 6 hours.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>ANTH 640. Linguistic Anthropology 3 Units Prerequisite(s): LING 325 or LING 327 or graduate standing. Description: This course provides an introduction to the field of linguistic anthropology. Topics include: the semiotic properties of human language; principles of linguistic and cultural categorization; language use in social interaction; markers of social identity and relationship; registers of social conduct; the textual organization of discourse; the role of discourse in the formulation of norms, and the institutionalization of modes of conduct. Note: Cross-listed with LING 640.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>ANTH 662. Special Topics in Cultural Anthropology 3 Units Prerequisite(s): Consent of instructor. Description: An examination of one or more specific areas of social-cultural anthropology. Note: Details announced each semester.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>ANTH 650. Health and Disease: A Bio-Cultural Approach 3 Units Prerequisite(s): Graduate student. Description: Focus on the adaptations that made us human and may not fit as well at the present; how human biology and evolution were and are shaped by lifestyles, health, and disease. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>ANTH 663. Special Topics in Biological Anthropology 1-3 Units Description: An examination of one or more specific areas of biological anthropology. Note: Details announced each semester.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>ANTH 651. Seminar in Biological Anthropology 3 Units Prerequisite(s): Graduate status. Description: Discusses current issues and debates in biological anthropology; discuss selected papers that have made a fundamental contribution to understanding human evolution. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>ANTH 664. Special Topics in Archaeology 3 Units Term Typically Offered: Fall, Spring, Summer Description: An examination of one or more specific areas of archaeology. Note: Details announced each semester.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>ANTH 653. Human Molecular Evolutionary Genetics 3 Units Prerequisite(s): Graduate status and consent of instructor. Description: Introduction to population genetics theory and a review of the peopling of the world as conceptualized using both molecular and anthropometric data. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>ANTH 670. Independent Study (Reading) 1-6 Units Prerequisite(s): Graduate status. Description: Intensive reading course under the supervision of a faculty member. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>ANTH 671. Independent Study (Research) 1-6 Units Prerequisite(s): Graduate status. Description: Intensive research course under the supervision of a faculty member. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>ANTH 672. Thesis 1-6 Units Prerequisite(s): Graduate status. Description: Reading, research, and writing of thesis under the supervision of a faculty member. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>

ANTH 673. Internship 1-6 Units

Prerequisite(s): Graduate status.
Description: Internship in a social service, governmental, or NGO under the supervision of a faculty member. A substantial paper related to the internship is required.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Art (Studio) (ART)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

ART 501. Concepts in Painting 3 Units

Term Typically Offered: Fall, Spring
Prerequisite(s): ART 301 and BFA Candidacy; or faculty consent.
Fee: An additional \$50.00 is charged for this course.
Description: Exploration of conceptual and technical issues in painting.
Note: May be repeated up to a maximum of 12 hours.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 502. Advanced Concepts in Painting 3 Units

Term Typically Offered: Fall, Spring
Prerequisite(s): ART 301 and BFA Candidacy; or faculty consent.
Fee: An additional \$50.00 is charged for this course.
Description: Exploration of individual (self-generated) conceptual issues and techniques in painting.
Note: Formerly Directed Study Painting.
Note: May be repeated up to a maximum of 12 hours.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 503. Special Topics in Painting 3 Units

Term Typically Offered: Occasionally Offered
Prerequisite(s): ART 301 and BFA candidacy; or faculty consent.
Fee: An additional \$50.00 is charged for this course.
Description: Focused exploration of a painting topic, process, technique or issue.
Note: May be repeated up to 12 credit hours.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 504. Directed Study in Painting 3 Units

Term Typically Offered: Fall, Spring
Prerequisite(s): ART 502 and BFA Candidacy; or faculty consent.
Fee: An additional \$50.00 is charged for this course.
Description: A focused, in-depth exploration of self-generated problems in painting.
Note: May be repeated up to a maximum of 12 credit hours.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 505. Advanced Figure Drawing 3 Units

Term Typically Offered: Fall, Spring
Prerequisite(s): ART 305 and BFA Candidacy; or faculty consent.
Fee: An additional \$50.00 is charged for this course.
Description: Advanced study of the human figure exploring more complex problems as a means of developing an individual approach to drawing. Coursework may include work from nude models.
Note: May be repeated to a maximum of 12 hours.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 506. Themes and Concepts in Drawing 3 Units

Term Typically Offered: Occasionally Offered
Prerequisite(s): ART 305 and BFA Candidacy; or faculty consent.
Fee: An additional \$50.00 is charged for this course.
Description: Individual problems stressing development of personal imagery and concepts and optional media and approaches. Coursework may include work from nude models.
Note: Formally taught as Advanced Drawing Concepts.
Note: May be repeated to a maximum of 12 hours.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 507. Directed Study in Drawing 3 Units

Term Typically Offered: Fall, Spring
Prerequisite(s): ART 505 or ART 506; and BFA Candidacy; or faculty consent.
Fee: An additional \$50.00 is charged for this course.
Description: Experimentation on individual problems in drawing.
Note: May be repeated to a maximum of 12 hours.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

<p>ART 508. Art Education Methods and Research I 3 Units Prerequisite(s): Fine Arts majors only. Fee: An additional \$50.00 is charged for this course. Description: Art education methods and current research readings to satisfy Kentucky certification requirements for teachers of art in grades K-6. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>ART 518. Art Education Methods and Research II 3 Units Term Typically Offered: Occasionally Offered Prerequisite(s): Fine Arts majors only. Fee: An additional \$50.00 is charged for this course. Description: Art education methods and current research readings to satisfy Kentucky certification requirements for teachers in grades 7-12. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>ART 509. Anatomy & Life Drawing 3 Units Term Typically Offered: Occasionally Offered Prerequisite(s): ART 305 and BFA candidacy; or faculty consent. Fee: An additional \$50.00 is charged for this course. Description: The study of human anatomy for the artist as visual structural form with emphasis on skeletal system, and movement; muscle system, and surface features. Course work may include drawing from nude models. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>ART 520. Adventures in Design Methods and Processes 3 Units Term Typically Offered: Spring Odd Years Prerequisite(s): ART 572; BFA Graphic Design Candidacy; or faculty consent. Fee: An additional \$50.00 is charged for this course. Description: An in-depth investigation of experimental methods of the design process within the context of designing effective visual communications. This studio-based exploration of graphic design revolves around Adventures: unconventional projects with emphasis placed on experimentation and observation. Note: This course satisfies an elective for completion of the BFA in Graphic Design. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>ART 510. Information Visualization 3 Units Term Typically Offered: Spring Only Prerequisite(s): BFA Graphic Design Candidacy; or faculty consent. Description: Intermediate-level studio to create and refine visual forms with emphasis on presenting numerical data and relational information in visually engaging ways with accuracy and integrity for a general audience. Formerly taught as Design for Visualizing Data and Information. Cross-listed with DES 510. Note: This course is a requirement for completion of the BFA in Graphic Design. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>ART 521. Practice of Sculpture 3 Units Term Typically Offered: Fall, Spring Prerequisite(s): ART 321 and BFA Candidacy; or faculty consent. Fee: An additional \$50.00 is charged for this course. Description: Introduction to a wide range of sculpture processes and media with an exploration of concepts and issues in contemporary sculpture. Note: Formerly taught as Sculpture II. Note: May be repeated to a maximum of 12 hours. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>ART 511. Advanced Glassmaking Techniques 3 Units Term Typically Offered: Fall, Spring Prerequisite(s): ART 311 and BFA candidacy; or faculty consent. Fee: An additional \$50.00 is charged for this course. Description: Specialized exploration of glassmaking techniques. Emphasis on professional and academic issues pertaining to glass. Note: May be repeated up to 12 hours. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>ART 522. Sculpture Strategies 3 Units Term Typically Offered: Fall, Spring Prerequisite(s): ART 321 and BFA Candidacy; or faculty consent. Fee: An additional \$50.00 is charged for this course. Description: Exploration of sculpture at the advanced level with emphasis on developing an individual direction in sculpture. Note: Formerly taught as Advanced Sculpture. Note: May be repeated to a maximum of 12 hours. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>ART 512. Directed Study in Glass 3 Units Term Typically Offered: Fall, Spring Prerequisite(s): ART 511 and BFA Candidacy; or faculty consent. Fee: An additional \$50.00 is charged for this course. Description: Experimentation on individual problems in Glass. Emphasis is placed on realization and execution of ideas. Note: May be repeated up to 12 hours. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>ART 523. Directed Study in Sculpture 3 Units Term Typically Offered: Fall, Spring Prerequisite(s): ART 521 and BFA Candidacy; or faculty consent. Fee: An additional \$50.00 is charged for this course. Description: Experimentation on individual problems in sculpture. Note: May be repeated to a maximum of 12 hours. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>

ART 530. Environmental Graphic Design and Wayfinding 3 Units

Term Typically Offered: Occasionally Offered
Prerequisite(s): ART 572; BFA Graphic Design Candidacy; or faculty consent.
Fee: An additional \$50.00 is charged for this course.
Description: Problems in architectural, environmental, and placemaking graphic design.
Note: This course satisfies an elective for completion of the BFA in Graphic Design.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 531. Advanced Ceramics: Wheelthrowing 3 Units

Term Typically Offered: Fall Only
Prerequisite(s): ART 331 and BFA Candidacy; or consent of instructor.
Fee: An additional \$50.00 is charged for this course.
Description: Focus on individual expression, experimentation and development of subject in wheelthrown vessels. Loading and firing of kilns is expected.
Note: Formerly taught as Advanced Ceramics I.
Note: May be repeated to a maximum of 12 hours.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 532. Advanced Ceramics: Sculptural Forms 3 Units

Term Typically Offered: Spring Only
Prerequisite(s): ART 331 and BFA Candidacy; or consent of the instructor.
Fee: An additional \$50.00 is charged for this course.
Description: Focus on individual expression, experimentation and development of content driven sculptural forms. Students explore abstraction, observation and narrative through singular or modular pieces. Loading and firing of kilns is expected.
Note: Formerly taught as Advanced Ceramics II & Handbuilding Techniques.
Note: May be repeated to a maximum of 12 hours.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 533. Clay Glazes and Firing 3 Units

Term Typically Offered: Occasionally Offered
Prerequisite(s): ART 331 and BFA Candidacy; or faculty consent.
Fee: An additional \$50.00 is charged for this course.
Description: The study of the chemistry of clay and glazes. Students will develop and test formulas for clay bodies, slips and glazes. The theories and practice of firing ware will also be explored.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 534. Directed Study in Ceramics 3 Units

Term Typically Offered: Fall, Spring
Prerequisite(s): ART 531 and BFA Candidacy; or faculty consent.
Fee: An additional \$50.00 is charged for this course.
Description: Experimentation on individual problems in clay and ceramics.
Note: May be repeated up to a maximum of 12 hours.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 540. Art, Design and Meaning 3 Units

Term Typically Offered: Spring Even Years
Prerequisite(s): ART 572; BFA Graphic Design Candidacy; or faculty consent.
Fee: An additional \$50.00 is charged for this course.
Description: Readings and experiments applying semiotics to visual communication problems in the fine and design arts.
Note: This course satisfies an elective for completion of the BFA in Graphic Design.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 541. Studio Practice in Printmaking 3 Units

Term Typically Offered: Fall, Spring
Prerequisite(s): ART 341.
Fee: An additional \$50.00 is charged for this course.
Description: Advanced projects in all printmaking media. Emphasis is on the unique qualities of print media for personal expression.
Note: Formerly ART 525.
Note: May be repeated to a maximum of 12 hours.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 542. Digital Printmaking 3 Units

Prerequisite(s): BFA Candidacy or faculty consent.
Fee: An additional \$50.00 is charged for this course.
Description: Using the computer to create imagery for printmaking. An introduction to digital techniques to be used alone or in conjunction with traditional printmaking media to produce fine art prints.
Note: Formally ART 526.
Note: May be repeated to a maximum of 12 hours.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 543. Directed Study in Printmaking 3 Units

Term Typically Offered: Fall, Spring
Prerequisite(s): ART 541 and BFA Candidacy; or faculty consent.
Fee: An additional \$50.00 is charged for this course.
Description: Experimentation on individual problems in printmaking.
Note: Formerly ART 527.
Note: May be repeated to a maximum of 12 hours.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 550. Lettering and Font Design **3 Units**

Term Typically Offered: Spring Odd Years
Prerequisite(s): ART 572; BFA Graphic Design Candidacy; or faculty consent.

Fee: An additional \$50.00 is charged for this course.
Description: In-depth investigation of the contemporary world of handmade work marks and typeface design.

Note: This course satisfies an elective for completion of the BFA in Graphic Design.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 551. Lighting **3 Units**

Term Typically Offered: Spring Only
Prerequisite(s): ART 351 or faculty consent.

Fee: An additional \$50.00 is charged for this course.
Description: This course focuses on all aspects of lighting including studio strobes, on-camera flash, and natural light for digital photography. Explored themes will include portraiture, still-life, and landscapes, both interior and exterior. Students are required to have a digital camera to take this course.

Note: Formerly taught as Photography Techniques and Processes.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 552. Digital Photography **3 Units**

Term Typically Offered: Fall Only
Prerequisite(s): ART 351 or faculty consent.

Fee: An additional \$50.00 is charged for this course.
Description: Exploration of color photography concepts and digital media utilizing photographic principles and techniques. Formerly Color Photography.

Note: **Note:** May be repeated to a maximum of 6 hours.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 554. Experimental Photography I **3 Units**

Term Typically Offered: Fall Only
Prerequisite(s): ART 351 or Faculty Consent.

Fee: An additional \$50.00 is charged for this course.
Description: An introduction to historic photographic techniques through the use of hand-crafted pinhole cameras, toy cameras, and view cameras.

Note: May be repeated to a maximum of 6 hours.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 555. Directed Study in Photography **3 Units**

Term Typically Offered: Fall, Spring
Prerequisite(s): ART 351, BFA Candidacy, or faculty consent.

Fee: An additional \$50.00 is charged for this course.
Description: Experimentation on individual problems in photography.

Note: May be repeated to a maximum of 12 hours.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 556. Experimental Photography II **3 Units**

Term Typically Offered: Spring Only
Prerequisite(s): ART 351; or faculty consent.

Fee: An additional \$50.00 is charged for this course.
Description: Experimentation with historic and alternative photographic methods of image making.

Note: May be repeated up to 6 hours.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 557. Advanced Photography Seminar **3 Units**

Term Typically Offered: Spring Only
Prerequisite(s): ART 551 and ART 552, or faculty consent.

Fee: An additional \$50.00 is charged for this course.
Description: Students will work on long-term individual self-designed projects that focus on exhibitions and professional portfolios. The course will emphasize production, research, critique, and revision. This course includes readings on contemporary photographic theory, student-led slide lectures, research presentations, field trips, and writing as an important component of developing advanced photographic work.

Note: Formerly taught as Advanced Photography.

Note: May be repeated to a maximum of 6 hours.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 559. Computer Applications for Interiors I **3 Units**

Term Typically Offered: Fall Only
Prerequisite(s): ART 361; BFA Candidacy or faculty consent.

Fee: An additional \$50.00 is charged for this course.
Description: An introduction to professional applications for graphic communication skills, specifically the technical drawings used in construction. Students will develop a set of construction drawings and schedules for a project of their own design. The course will introduce professional industry-standard software applications and drawing skills, and foster the continuing development of those skills.

Note: This course is a requirement for completion of the BFA in Interior Design.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 560. Sustainable Design **3 Units**

Prerequisite(s): ART 361 and ART 362; BFA Candidacy; or faculty consent.

Fee: An additional \$50.00 is charged for this course.
Description: Principles and theory of sustainable design in order to prepare students for the LEED (Leadership in Energy and Environmental Design) accreditation exam. Students will also learn to apply LEED professional standards into practical design solutions through interdisciplinary projects.

Note: This course is a requirement for completion of the BFA in Interior Design.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 561. Interior Design Studio I **3 Units**
Term Typically Offered: Spring Only
Prerequisite(s): ART 361 and BFA Candidacy; or faculty consent.
Fee: An additional \$50.00 is charged for this course.
Description: Introduction to small scale interior design projects emphasizing process and techniques in relation to special populations.
Note: Formerly taught as Interior Architecture Studio I.
Note: This course is a requirement for completion of the BFA in Interior Design.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 562. Interior Design Studio II **3 Units**
Term Typically Offered: Fall Only
Prerequisite(s): ART 561 and BFA Candidacy; or faculty consent.
Fee: An additional \$50.00 is charged for this course.
Description: Study of three-dimensional space through model making.
Note: Formerly taught as Interior Architecture Studio II.
Note: This course is a requirement for completion of the BFA in Interior Design.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 563. Interior Design Studio III **3 Units**
Term Typically Offered: Spring Only
Prerequisite(s): ART 562 and BFA Candidacy; or faculty consent.
Fee: An additional \$50.00 is charged for this course.
Description: Design of projects involving such areas as historic preservation, hospitality, and retail sales.
Note: Formerly taught as Interior Architecture Studio III.
Note: This course is a requirement for completion of the BFA in Interior Design.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 564. Interior Design Studio IV **3 Units**
Term Typically Offered: Fall Only
Prerequisite(s): ART 563 and BFA Candidacy; or faculty consent.
Fee: An additional \$50.00 is charged for this course.
Description: Large scale office design involving programming, space planning and specifying materials. Practice for NCIDQ exam.
Note: Formerly taught as Architecture Studio IV.
Note: This course is a requirement for completion of the BFA in Interior Design.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 565. Directed Projects in Interior Design **3 Units**
Term Typically Offered: Spring Only
Prerequisite(s): Senior standing; BFA Candidacy; or faculty consent.
Fee: An additional \$50.00 is charged for this course.
Description: Development of advanced research and project design.
Note: Formerly taught as Directed Projects in Interior Architecture.
Note: May be repeated to a maximum of 6 hours.
Note: This course is a requirement for completion of the BFA in Interior Design.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 566. Interiors Construction **3 Units**
Term Typically Offered: Fall Odd Years
Prerequisite(s): ART 361 and BFA Candidacy; or faculty consent.
Fee: An additional \$50.00 is charged for this course.
Description: A study of interiors construction components and materials. A review of building codes, specifications and terminology.
Note: This course is a requirement for completion of the BFA in Interior Design.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 567. Interior Finishes **3 Units**
Term Typically Offered: Spring Only
Prerequisite(s): ART 361 and BFA Candidacy; or faculty consent.
Description: A study of interior materials, such as wall coverings and floor coverings and their fabrication, and marketing and installation procedures.
Note: Formerly taught as Textiles and Finishes for Interior Design.
Note: This course is a requirement for completion of the BFA in Interior Design.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 568. Building Systems **3 Units**
Term Typically Offered: Fall Even Years
Prerequisite(s): ART 361 and BFA Candidacy; or faculty consent.
Description: An investigation of building systems including - HVAC, plumbing, electrical, lighting and acoustics and other systems.
Note: Formerly taught as Environmental Systems.
Note: This course is a requirement for completion of the BFA in Interior Design.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 569. Computer Applications for Interiors II 3 Units**Term Typically Offered:** Spring Only**Prerequisite(s):** ART 559 and BFA Candidacy; or faculty consent.**Fee:** An additional \$50.00 is charged for this course.**Description:** Intensive use of industry-standard software applications in the exploration, documentation, and presentation of design projects. Course will take students from 2-D drafting to 3-D modeling, rendering, and animation.**Note:** Formerly Computer Applications in Interior Design.**Note:** This course is a requirement for completion of the BFA in Interior Design.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 570. Design for Public Issues I 3 Units**Term Typically Offered:** Fall Only**Prerequisite(s):** Senior standing and BFA Graphic Design Candidacy; or faculty consent.**Fee:** An additional \$50.00 is charged for this course.**Description:** Advanced studio to understand dimensions of a public issue and propose system-level interventions in a collaborative, human-centered design process, with emphasis on problem identification. Formerly taught as Design for Public Issues. Cross-listed with DES 570.**Note:** This course is a requirement for completion of the BFA in Graphic Design.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 571. Typography I 3 Units**Term Typically Offered:** Fall Only**Prerequisite(s):** BFA Graphic Design Candidacy; or faculty consent.**Fee:** An additional \$50.00 is charged for this course.**Description:** Studio course on typography, covering the anatomy of type, typefaces, and the function of typography in visual communication, with an emphasis on practical skills related to print and digital forms. Cross-listed with DES 571.**Note:** This course is a requirement for completion of the BFA in Graphic Design.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 572. Typography II 3 Units**Term Typically Offered:** Spring Only**Prerequisite(s):** ART 571 and BFA Graphic Design Candidacy; or faculty consent.**Fee:** An additional \$50.00 is charged for this course.**Description:** An intermediate studio focused on the study and use of type to solve visual communication problems with advanced skills of typography in organizing, arranging, and presenting information in complex forms. Cross-listed with DES 572.**Note:** This course is a requirement for completion of the BFA in Graphic Design.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 573. Typography III 3 Units**Term Typically Offered:** Fall Only**Prerequisite(s):** ART 572 and BFA Graphic Design Candidacy; or faculty consent.**Fee:** An additional \$50.00 is charged for this course.**Description:** Advanced studio on the development of a cohesive visual and verbal system through a systematic combination of typography, color, image style and layout across a variety of forms. Formerly taught as Identity Systems. Cross-listed with DES 573.**Note:** This course is a requirement for completion of the BFA in Graphic Design.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 574. The Book Form 3 Units**Term Typically Offered:** Fall Only**Prerequisite(s):** ART 572 and BFA Graphic Design Candidacy; or faculty consent.**Fee:** An additional \$50.00 is charged for this course.**Description:** The communication and expressive possibilities of bound pages as a medium for words and images.**Note:** This course is a requirement for completion of the BFA in Graphic Design.**Note:** Formerly taught as Graphic Design V.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 575. Packaging Design 3 Units**Term Typically Offered:** Fall Odd Years**Prerequisite(s):** ART 572 and BFA Graphic Design Candidacy; or faculty consent.**Fee:** An additional \$50.00 is charged for this course.**Description:** Problems in designing for packaging structures.**Note:** This course satisfies an elective for completion of the BFA in Graphic Design.**Note:** Formerly taught as Packaging.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 576. Interaction Design I 3 Units**Term Typically Offered:** Spring Only**Prerequisite(s):** BFA Graphic Design Candidacy; or faculty consent.**Fee:** An additional \$50.00 is charged for this course.**Description:** Studio course on the conceptualization and development of human experiences in digital environments; covering the process from research to delivery with an emphasis on stakeholder engagement. This course is a requirement for completion of the BFA in Graphic Design. Cross-listed with DES 576.**Note:** Formerly taught as Web Site Design.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 577. Interaction Design II 3 Units**Term Typically Offered:** Fall Only**Prerequisite(s):** ART 576 and BFA Graphic Design Candidacy; or faculty consent.**Fee:** An additional \$50.00 is charged for this course.**Description:** Intermediate-level studio covering special problems of digital environments including interface issues, design systems, and consistency across interactions; with discussions about implementation and delivery. This course satisfies an elective for completion of the BFA in Graphic Design. Cross-listed with DES 577.**Note:** Formerly taught as Design for Interaction.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 578. Image and Installation 3 Units**Term Typically Offered:** Occasionally Offered**Prerequisite(s):** ART 351 and BFA Candidacy; or faculty consent.**Fee:** An additional \$50.00 is charged for this course.**Description:** Students will construct artwork designed to transform site-specific spaces by using analog and digital approaches. Multi-sensory experiences of space and time will be explored through basic video editing, drone flying, sculptural, perceptual and interdisciplinary-based assignments. Installation work will be contextualized with respect to other forms of aesthetic experience and constructed with meaningful connections between individuals, sites, history, technology and materials. Artists and collaborative groups who utilize a variety of methods in order to activate public space or site-specific locations will also be studied.**Note:** May be repeated to a maximum of 6 hours.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 579. Directed Study in Graphic Design 1-3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** ART 571 and BFA Graphic Design Candidacy; or faculty consent.**Fee:** An additional \$50.00 is charged for this course.**Description:** Experimentation on individual problems in graphic design.**Note:** This course satisfies an elective for completion of the BFA in Graphic Design.**Note:** May be repeated to a maximum of 12 hours.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 580. Design for Public Issues II 3 Units**Term Typically Offered:** Spring Only**Prerequisite(s):** BFA Graphic Design Candidacy; or faculty consent.**Fee:** An additional \$50.00 is charged for this course.**Description:** Advanced studio to understand dimensions of a public issue and propose system-level interventions in a collaborative, human-centered design process, with emphasis on program development. This course satisfies an elective for completion of the BFA in Graphic Design.**Note:** Cross-listed with DES 580.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 581. Advanced Fiber/Surface Design 3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** ART 381 and BFA Candidacy; or faculty consent.**Fee:** An additional \$50.00 is charged for this course.**Description:** Traditional as well as non-traditional fiber techniques are used as a means for developing conceptual skills and problem solving ability in pursuit of a personal direction. Emphasis on surface development using printing, painting, and photo techniques.**Note:** Formerly taught as Fiber: Surface.**Note:** May be repeated to a maximum of 12 hours.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 582. Advanced Fiber/ Mixed Media Art 3 Units**Term Typically Offered:** Occasionally Offered**Prerequisite(s):** ART 381 and BFA Candidacy; or faculty consent.**Fee:** An additional \$50.00 is charged for this course.**Description:** Traditional as well as non-traditional fiber techniques are used as a means for developing conceptual skills and problem solving ability in pursuit of a personal direction. Emphasis on sculptural form, papermaking techniques and installation.**Note:** Formerly taught as Fiber: Construction.**Note:** May be repeated to a maximum of 12 hours.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 583. Papermaking 3 Units**Term Typically Offered:** Occasionally Offered**Prerequisite(s):** BFA Candidacy, faculty consent for graduate credit.**Fee:** An additional \$50.00 is charged for this course.**Description:** Introduces the basic procedures of handmade paper while investigating papermaking as a means for contemporary expression.**Note:** May be taken for graduate credit.**Note:** May be repeated to a maximum of 6 hours.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 584. Directed Study in Fiber and Mixed Media Art 3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** ART 581 or ART 582; and BFA Candidacy; or faculty consent.**Fee:** An additional \$50.00 is charged for this course.**Description:** Experimentation on individual problems in fiber and mixed media art.**Note:** May be repeated to a maximum of 12 hours.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 585. Book Art Concepts **3 Units**
Term Typically Offered: Occasionally Offered
Prerequisite(s): BFA candidacy or faculty consent.
Fee: An additional \$50.00 is charged for this course.
Description: An introduction to traditional and non-traditional book arts with focus on the construction of traditional book forms such as folded bindings, Japanese stab bindings, portfolios, as well as types of multi-signature bindings. Emphasis will be placed on the book as an art form incorporating concept, design, content, and craft.
Note: May be repeated to a maximum of 6 hours.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 588. Internship in Design **3 Units**
Grading Basis: Pass/Fail
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): BFA Graphic Design Candidacy or faculty consent.
Description: Internships in graphic design are paid, hands-on work experience to implement the skills learned during the course of graphic design program study. Internships are by special arrangement. Registering for ART/DES 588 is contingent upon the student identifying a graphic design faculty member who will sponsor and oversee their work. May not be used to fulfill minimum requirements for the BFA in Graphic Design. May be repeated to a maximum of 6 hours.
Note: This work/learning arrangement must be overseen by a graphic design faculty member and by a designated employee of an organization.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 590. Special Problems in Studio Art **3 Units**
Term Typically Offered: Occasionally Offered
Prerequisite(s): BFA Candidacy or faculty consent.
Fee: An additional \$50.00 is charged for this course.
Description: Advanced exploration of a particular theme, medium or combination of media outside the scope of established departmental curriculum, with emphasis on individual problems.
Note: May be repeated with different subtitles to a maximum of 12 hours.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 594. Directed Projects in Design **3 Units**
Term Typically Offered: Fall, Spring
Prerequisite(s): BFA Graphic Design Candidacy or faculty consent.
Fee: An additional \$50.00 is charged for this course.
Description: Advanced studio for a personal interest project that demonstrates capacity to synthesize visual and written components into a compelling communication program with a variety of forms.
Note: Cross-listed with DES 594.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 595. Independent Study **1-3 Units**
Prerequisite(s): Minimum grade point average of 3.0 overall, and minimum grade point average of 3.5 in the department, and at least 18 semester hours credit in the department.

Fee: An additional \$50.00 is charged for this course.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 596. Professional Development in Interior Design - CUE **3 Units**
Term Typically Offered: Spring Only

Prerequisite(s): ART 564 and BFA Candidacy; or faculty consent.
Fee: An additional \$50.00 is charged for this course.
Description: The professional aspects of interior design, with emphasis on the fundamental knowledge and technical skills required for practice in the interior design profession and the role, purpose, and study of professional development. Students will develop, prepare, and edit a resume and a portfolio of work for presentation within the interior design profession.

Note: This course is a requirement for completion of the BFA in Interior Design.

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 597. Professional Development in Studio Arts - CUE **3 Units**
Term Typically Offered: Fall, Spring

Prerequisite(s): Senior standing; BFA Candidacy and successful completion of BFA review.
Fee: An additional \$50.00 is charged for this course.
Description: The development, preparation, and editing of a resume, artist's statement and a body of work for exhibition for 2-D or 3-D studios.
Note: Exhibition must be scheduled within the same calendar year as graduation.

Note: This course is required for the completion of the BFA in Studio Art and is restricted to students completing the BFA program in the current semester.

Note: Permission to enroll will be granted after the student successfully passes the BFA review in the semester prior.

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 598. Professional Development in Design - CUE 3 Units

Term Typically Offered: Spring Only

Prerequisite(s): Senior standing and BFA Candidacy; or faculty consent.

Fee: An additional \$50.00 is charged for this course.

Description: Advanced studio dedicated to the development of professional quality portfolio and resume representing undergraduate experience; plus, the organization and production of the senior design portfolio day. Cross-listed with DES 598.

Note: Formerly taught as Portfolio Development in Graphic Design - CUE.

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 599. Studio Art Undergraduate Capstone Seminar - CUE 1 Unit

Term Typically Offered: Fall, Spring

Prerequisite(s): Senior standing and BA Candidacy; or faculty consent.

Fee: An additional \$50.00 is charged for this course.

Description: This course provides students with a culminating experience through research, critical thinking, analytical writing and fieldwork focused on the visual arts process and professions.

Note: This course is required for completion of the BA in Studio Art.

Note: Course must be scheduled within the same calendar year as graduation.

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 600. Graduate Seminar 3 Units

Grading Basis: Pass/Fail

Term Typically Offered: Fall Only

Prerequisite(s): Graduate standing.

Fee: An additional \$75.00 is charged for this course.

Description: This course will provide an orientation to the University of Louisville and the MFA program. Students will plan and take a field trip to New York City (pending funding) in order to survey national and international art exhibits. Students will organize and mount a group exhibition at the MFA Gallery and learn the practice of professional presentation and promotion of art. Students will also learn the practice of producing an artist's lecture, receive library training, and write a research paper on a contemporary topic.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 601. Workshop in Painting 3 Units

Prerequisite(s): Four semesters of undergraduate painting.

Fee: An additional \$75.00 is charged for this course.

Description: Concentrated study in advanced contemporary painting problems, with strong emphasis on independent visual thought.

Note: May be repeated, but no more than 18 hours can be credited to MA.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 602. Professional Practice in Painting 3 Units

Prerequisite(s): MFA Standing, or faculty consent.

Fee: An additional \$75.00 is charged for this course.

Description: Individual research and professional practice in painting.

Note: May be repeated but no more than 18 hours may be applied to MFA.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 605. Workshop in Drawing 3 Units

Prerequisite(s): Four semesters of undergraduate drawing.

Fee: An additional \$75.00 is charged for this course.

Description: Concentrated study of contemporary concepts and theories leading to independent visual thought expressed through drawing techniques.

Note: May be repeated, but no more than 18 hours can be counted toward MA.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 606. Professional Practice Drawing 3 Units

Prerequisite(s): MFA standing, or faculty consent.

Fee: An additional \$75.00 is charged for this course.

Description: Individual research and professional practice in drawing.

Note: May be repeated, but no more than 18 hours may be applied MFA.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 610. Special Problems in Studio Art 3 Units

Term Typically Offered: Fall, Spring

Prerequisite(s): MFA standing or faculty consent.

Fee: An additional \$75.00 is charged for this course.

Description: Advanced exploration of a particular theme, medium or combination of media outside the scope of established departmental curriculum, with emphasis on individual problems.

Note: May be repeated, but no more than 18 hours may be counted toward MFA.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 611. Workshop in Glass 3 Units

Prerequisite(s): Graduate status or consent of instructor.

Fee: An additional \$75.00 is charged for this course.

Description: Concentrated pursuit of creative concepts using glass. Refinement of conceptual and practical glassmaking fundamentals.

Note: May be repeated, but no more than 18 hours may be counted toward MA or MFA.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

<p>ART 612. Professional Practice in Glass 3 Units Prerequisite(s): MFA standing or faculty consent. Fee: An additional \$75.00 is charged for this course. Description: Individual research and professional practice in glass. Note: May be repeated, but no more than 18 hours can be credited to MFA.</p>	<p>ART 642. Professional Practice in Printmaking 3 Units Prerequisite(s): MFA Standing or faculty consent. Fee: An additional \$75.00 is charged for this course. Description: Individual research and professional practice in printmaking. Note: May be repeated, but no more than 18 hours may be applied to MFA.</p>
<p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	
<p>ART 621. Workshop in Sculpture 3 Units Prerequisite(s): Four semesters of undergraduate sculpture. Fee: An additional \$75.00 is charged for this course. Description: Concentrated study of sculptural problems and techniques. Note: May be repeated, but no more than 18 hours can be credited to MA.</p>	<p>ART 643. Independent Study 1-15 Units Prerequisite(s): Consent of instructor. Fee: An additional \$75.00 is charged for this course. Description: Credit according to achievement. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	
<p>ART 622. Professional Practice in Sculpture 3 Units Prerequisite(s): MFA standing or faculty consent. Fee: An additional \$75.00 is charged for this course. Description: Individual research and professional practice in sculpture. Note: May be repeated, but no more than 18 hours may be applied to MFA.</p>	<p>ART 644. Independent Study 1-15 Units Prerequisite(s): Consent of instructor. Fee: An additional \$75.00 is charged for this course. Description: Credit according to achievement. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	
<p>ART 631. Workshop in Ceramics 3 Units Prerequisite(s): Consent of instructor. Fee: An additional \$75.00 is charged for this course. Description: Advanced individual projects and experimentation. Note: May be repeated, but no more than 18 hours can be credited to MA.</p>	<p>ART 645. Thesis Guidance 3 Units Fee: An additional \$75.00 is charged for this course. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	
<p>ART 632. Professional Practice in Ceramics 3 Units Prerequisite(s): MFA standing or faculty consent. Fee: An additional \$75.00 is charged for this course. Description: Individual research and professional practice in ceramics. Note: May be repeated, but no more than 18 hours may be applied to MFA.</p>	<p>ART 646. Thesis Guidance 3 Units Fee: An additional \$75.00 is charged for this course. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	
<p>ART 641. Workshop in Printmaking 3 Units Prerequisite(s): Four semesters of undergraduate printmaking. Fee: An additional \$75.00 is charged for this course. Description: Concentrated study leading to independent visual thought. Note: May be repeated, but no more than 18 hours can be credited to MA.</p>	<p>ART 651. Workshop in Photography 3 Units Prerequisite(s): Four semesters of undergraduate photography, and consent of instructor. Fee: An additional \$75.00 is charged for this course. Description: Concentrated study of photographic techniques and theory leading to independent visual thought. Note: May be repeated, but no more than 18 hours can be counted toward a MA.</p>
<p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	
<p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>ART 652. Professional Practice in Photography 3 Units Prerequisite(s): MFA standing, or faculty consent. Fee: An additional \$75.00 is charged for this course. Description: Individual research and professional practice in photography. Note: May be repeated, but no more than 18 hours may be applied to MFA.</p>
<p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	

ART 672. Professional Practice in Graphic Design 3 Units
Term Typically Offered: Occasionally Offered
Prerequisite(s): MFA Standing or faculty consent.
Description: Individual research and professional practice in graphic design.
Note: May be repeated, but no more than 18 hours may be applied to MFA.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 681. Workshop in Fiber/Mixed Media 3 Units
Prerequisite(s): Consent of instructor.
Fee: An additional \$75.00 is charged for this course.
Description: Concentrated study of fiber problems and techniques with emphasis on development of student's individual direction.
Note: May be repeated, but no more than 18 hours can be credited to MA.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 683. Professional Practice in Fiber/Mixed Media 3 Units
Prerequisite(s): MFA standing or faculty consent.
Fee: An additional \$75.00 is charged for this course.
Description: Individual research and professional practice in fiber/mixed media.
Note: May be repeated, but no more than 18 hours may be applied to MFA.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 688. Professional Development 1 Unit
Term Typically Offered: Spring Only
Prerequisite(s): MFA standing or faculty consent.
Description: Students will develop a personal website and establish social media as a professional artist. Students will also develop a professional resume/CV; and write a cover letter. Students will learn to research and apply for artist grants and exhibition opportunities.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 689. MFA Seminar 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): MFA standing or faculty consent.
Fee: An additional \$75.00 is charged for this course.
Description: Reports, critiques, presentations, discussions on current topics in the visual arts. Formerly taught as ART 693, 694, 695.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 690. MFA Projects: Studio 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): MFA Standing or faculty consent.
Fee: An additional \$75.00 is charged for this course.
Description: Offered in the fall semester by a member of the studio faculty in an appropriate studio space or workspace; this course provides an opportunity for MFA candidates to develop their work in the studio with guidance and input from studio faculty and peers. The primary components of the curriculum are supervised studio work, group critiques, and individual meetings. This course is required in semesters 1, 3, and 5 for students enrolled in the MFA program; and may be taken as an elective in semesters 2, 4, and 6, if desired.
Note: No more than 18 hours may be applied to MFA.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 691. Professional Practice in Studio Art 3 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): MFA standing or faculty consent.
Fee: An additional \$75.00 is charged for this course.
Description: Interdisciplinary investigation in advanced contemporary visual problems leading to independent visual thought.
Note: May be repeated, but no more than 18 hours may be counted toward MFA.
Note: Formerly taught as Workshop in Studio Art.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 692. Art, Thinking & Social Change 3 Units
Term Typically Offered: Occasionally Offered
Prerequisite(s): MFA standing or faculty consent.
Fee: An additional \$75.00 is charged for this course.
Description: Studio art course that integrates aesthetics, critical theories and practice of art. Students will think creatively to produce artwork that transcends the confines of mediums, to reflect upon philosophical issues, to critique historical and current events, and to examine the boundary between aesthetics and ethics.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 693. MFA Seminar I 1 Unit
Term Typically Offered: Spring Only
Prerequisite(s): MFA standing or faculty consent.
Fee: An additional \$75.00 is charged for this course.
Description: Reports, critiques, presentations, discussions on current topics in the visual arts.
Note: MFA Seminar I to be taken in the second semester.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 694. MFA Seminar II **1 Unit**
Term Typically Offered: Fall Only
Prerequisite(s): MFA standing or faculty consent.
Fee: An additional \$75.00 is charged for this course.
Description: Reports, critiques, presentations, and discussions on current topics in the visual arts.
Note: MFA Seminar II to be taken in the third semester.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 695. MFA Seminar III **1 Unit**
Term Typically Offered: Spring Only
Prerequisite(s): MFA standing or faculty consent.
Fee: An additional \$75.00 is charged for this course.
Description: Reports, critiques, presentations, and discussions on current topics in the visual arts.
Note: MFA Seminar III to be taken in the fourth semester.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 696. Teaching Seminar **1 Unit**
Term Typically Offered: Spring Only
Prerequisite(s): MFA standing or faculty consent.
Fee: An additional \$75.00 is charged for this course.
Description: Development and practice of teaching skills and methodologies through work with an individual instructor in an undergraduate course.
Note: To be taken prior to the receipt of a Graduate Teaching Assistantship (GTA).

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 697. Teaching Practicum **3 Units**
Term Typically Offered: Fall Only
Prerequisite(s): MFA standing or faculty consent and receipt of graduate teaching assistantship.
Fee: An additional \$75.00 is charged for this course.
Description: Students will develop practical teaching skills and methodology; learn how to structure a course; develop content, projects, semester calendar, and set and meet learning outcomes. Students will learn classroom management, how to deal with student issues, curriculum development in studio art, studio maintenance, and how to monitor and order supplies. Students will also learn about the college teaching profession and teaching job opportunities.
Note: To be taken after student receives a GTA.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 698. Internship in Studio Art / Service Learning **1-2 Units**
Term Typically Offered: Spring Only
Prerequisite(s): MFA standing or faculty consent.
Fee: An additional \$75.00 is charged for this course.
Description: Supervised professional experience in Studio Art.
Note: May be repeated, but no more than 2 hours may be counted toward MFA.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ART 699. MFA Thesis Project **3 Units**
Prerequisite(s): MFA standing or faculty consent.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Art History (ARTH)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

ARTH 501. Advanced History of Graphic Design **3 Units**
Term Typically Offered: Fall Only
Prerequisite(s): BFA Graphic Design Candidacy or faculty consent.
Description: Seminar course covering the development of graphic design from 1800 to present. Topics include key movements, technologies, ethics, and general issues relating to design theory and criticism. Cross-listed with DES 501.
Note: Formerly taught as Advanced History and Issues of Graphic Design.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ARTH 521. Studies in Modern Art **3 Units**
Prerequisite(s): One 300-level course in Modern Art or consent of instructor.
Description: Reconstruction and interpretations of modern artistic aspirations through study of sources and documents by artists, critics and historians.
Note: May be used to satisfy the Period/Area 2 - after-1750 requirement.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ARTH 523. History of Performance Art 3 Units

Prerequisite(s): ARTH 270 and ARTH 325; or permission of instructor; or graduate standing.

Description: History of Performance Art is designed as an advanced upper-level seminar that investigates the international, historical developments in Performance Art after World War II. It considers the experimental strategies and ideological aims of visual artists who used their bodies as the primary vehicle of expression, information, communication, and social change. Performance Art has had the dubious distinction of being the most censored art medium, and since the 1960s artists have been continually arrested and fined for their work. This is a highly significant social fact, one that draws attention to Performance Art's particularly disruptive aesthetic codes and materials-emphasizing presentation over representation; intersubjective, human bodies over inanimate objects; and temporarily over spatiality.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ARTH 524. Installation Art 3 Units

Prerequisite(s): ARTH 270 and ARTH 325; or permission of instructor; or graduate standing.

Description: An advanced exploratory seminar that investigates a contemporary art form as well as a thorny art-historical problem: the term "installation" now functions both as a loose descriptor for a myriad of contemporary artworks (having supplanted terms such as Assemblage and Environment) independent of medium and context, as well as a general and comprehensive art-historical genre, a circumstance that has its own compelling historical development. The course is designed so that students can grapple with a central issue for contemporary art—the definition of a burgeoning critical term for art history.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ARTH 525. Representations of Trauma in the Visual Arts 3 Units

Term Typically Offered: Occasionally Offered

Prerequisite(s): ARTH 270 and ARTH 325; or permission of instructor.

Description: This seminar examines the changing relationships between trauma and its representation in the twentieth century. Beginning with the Holocaust, the course charts a trajectory from this most profound of collective traumas, to the refinement of clinical definitions of trauma (e.g., PTSD) in the wake of the Vietnam War, to the development of trauma studies in the humanities in the 1990s, to the recent "pictorial turn" within scholarship on trauma. This historical framework will be brought to bear upon the dynamics of how trauma and visibility have been approached by scientists, scholars, and artists.

Note: Cross-listed with WGST 525.

Note: May be used to satisfy the Period/Area 2 - after-1750 requirement.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ARTH 526. Studies in Contemporary Art 3 Units

Prerequisite(s): ARTH 320, or ARTH 321, or ARTH 325 or ARTH 326, or permission of the instructor.

Description: An advanced-level seminar on special topics in contemporary art.

Note: May be used to satisfy the Period 2/Area - after-1750 requirement.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ARTH 531. Studies in Asian Art 3 Units

Prerequisite(s): One 300-level course in Asian Art, or consent of instructor.

Description: Selected topics that examine the development of art and architecture in the context of the social and cultural history of China and Japan.

Note: Cross-listed with AST 531.

Note: May be used to satisfy the Period/Area 3 - Non-Western requirement.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ARTH 541. Theories & Methods in the Visual Arts 3 Units

Term Typically Offered: Fall Only

Prerequisite(s): Permission of the instructor.

Description: An introduction to various art historical and interdisciplinary theoretical perspectives and methodological approaches that have shaped the understanding, interpretation, and production of visual art and culture in the nineteenth century to the present. The course will explore these theories and methods as specific fields of inquiry through the study of primary texts, secondary or applied texts, artists' writings and artworks.

Note: This course is required for completion of the BA in Art History.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ARTH 542. Special Topics 3 Units

Prerequisite(s): Permission of the instructor.

Description: An examination of one or more specific areas of Art History not covered in the regular course offerings. Content to be indicated in schedule of courses.

Note: May be taken with four different subtitles to a maximum of 12 hours.

Note: Satisfaction of curricular requirement determined by individual course content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ARTH 543. Independent Study 1-3 Units

Prerequisite(s): Minimum grade point average of 3.0 overall, and minimum grade point average of 3.5 in the department, and at least 18 semester hours credit in the department, or consent of instructor.

Description: Topic and content to be determined in consultation with instructor.

Note: Satisfaction of curricular requirement determined by individual course content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ARTH 544. Pan-African Art: Form and Content 3 Units

Prerequisite(s): Permission of the instructor.
Description: Similarities and differences in African-American folk art, Caribbean folk art, and traditional African art.
Note: Cross-listed with PAS 581.
Note: May be used to satisfy the Period/Area 3 - Non-Western requirement.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ARTH 547. Introduction to Critical and Curatorial Studies I 3 Units

Prerequisite(s): Consent of instructor.
Description: An introduction to curatorial practice of the last 30 years. Focusing on the curator's increasingly prominent role in the reception and synthesis of contemporary art, the course explores developments in exhibition design in terms of art production, international exchange, globalization, and critical theory.
Note: Cross-listed with CCS 547.
Note: A student may only receive credit for only one of the courses: ARTH 547, CCS 547, ARTH 647, CCS 647.
Note: Formerly Museum Methods I.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ARTH 548. Critical and Curatorial Studies II 3 Units

Prerequisite(s): ARTH 547, or CCS 547, or ARTH 647, or CCS 647, or consent of instructor.
Description: This seminar is structured as a curatorial practicum. Students work with the professor to develop and produce an exhibition from the university's print collection. Throughout the semester, weekly readings and presentations focus on contemporary exhibition practice as well as on the theoretical and critical concerns undergirding the student's developing exhibition.
Note: Cross-listed with CCS 548.
Note: A student may receive credit for only one of the following courses: ARTH 548, ARTH 648, CCS 548 and CCS 648.
Note: Formerly taught as Museum Methods II.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ARTH 549. Contemporary Trends in African-American Art 3 Units

Prerequisite(s): One 300-level art history course or faculty consent.
Description: Survey of contemporary African American art since the 1960s into current trends today. Examination of contemporary paintings, sculpture, fabric art, folk art, public art, and installation art.
Note: Cross-listed with PAS 509.
Note: Undergraduate credit may not be earned for this course and ARTH 349 and ARTH 329.
Note: May be used to satisfy the Period 3/Area - Non-Western requirement.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ARTH 550. Art History Undergraduate Capstone Seminar - CUE 3 Units

Term Typically Offered: Fall, Spring
Prerequisite(s): Senior standing and BA candidacy; or faculty consent.
Description: The Art History Program's undergraduate capstone seminar evaluates the ability of our majors to conduct original art historical research, frame their investigations in the form of a scholarly abstract, and present their ideas in a "conference paper" following the conventions appropriate to the discipline.
Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ARTH 551. Studies in Ancient Art 3 Units

Prerequisite(s): ARTH 351, or ARTH 353, or consent of instructor.
Description: Selected topics in ancient art and architecture.
Note: May be used to satisfy the Period/Area 1 - Pre-1750 requirement.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ARTH 552. Ancient Painting 3 Units

Prerequisite(s): ARTH 351, or ARTH 353, or consent of instructor.
Description: A study of mural painting from the ancient cultures of Egypt, the Aegean, Greece and Italy.
Note: May be used to satisfy the Period/Area 1 - Pre-1750 requirement.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ARTH 553. Ancient Cities 3 Units

Prerequisite(s): ARTH 351, or ARTH 353, or consent of instructor.
Description: A study of the development of the city in the Mediterranean region from prehistoric times to the late Roman Empire.
Note: May be used to satisfy the Period/Area 1 - Pre-1750 requirement.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ARTH 561. Studies in Medieval Art 3 Units

Prerequisite(s): One 300-level course in Medieval art or architecture, or consent of instructor.
Description: Studies in the art and architecture of the Middle Ages emphasizing a synthesis of the arts in a particular period or place.
Note: May be used to satisfy the Period/Area 1 - Pre-1750 requirement.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- ARTH 571. Studies in Renaissance Art** 3 Units
Prerequisite(s): One 300-level course in Renaissance art, or consent of instructor.
Description: Study of a major phase of painting or sculpture, fifteenth or sixteenth century, in Italy or Northern Europe, with emphasis on sources and development of style.
Note: May be used to satisfy the Period/Area 1 - Pre-1750 requirement.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ARTH 574. History of Drawing and Prints** 3 Units
Term Typically Offered: Occasionally Offered
Prerequisite(s): One 300-level course in Art History, or faculty consent.
Description: Origin and development of woodcut, engraving, etching, aquatint, lithography, and serigraphy; major artists using these techniques.
Note: May be used to satisfy the Period/Area 1 - Pre-1750 requirement.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ARTH 581. Studies in Baroque Art** 3 Units
Prerequisite(s): ARTH 381 or consent of instructor.
Description: Study of one of the leading artists of the seventeenth and eighteenth centuries, such as Bernini, Borromini, Tiepolo, Velazquez, Rembrandt, Rubens, or Watteau.
Note: May be used to satisfy the Period/Area 1 - Pre-1750 requirement.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ARTH 593. Studies in Modern Architecture** 3 Units
Prerequisite(s): One 300-level course in Modern architecture, or consent of instructor.
Description: Principal forms and theories of urban and building design in relation to social forces in modern Europe and America.
Note: May be used to satisfy the Period/Area 2 - after-1750 requirement.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ARTH 595. Studies in American Art** 3 Units
Prerequisite(s): One 300-level course in American art or architecture, or consent of instructor.
Description: Studies in American architecture, city planning, decorative arts, painting, or sculpture, from colonial times to present.
Note: May be used to satisfy the Period/Area 2 - after-1750 requirement.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ARTH 597. Studies in Photographic History** 3 Units
Prerequisite(s): Consent of instructor.
Description: The aesthetic development of photography, with emphasis on U.S. photographers and contemporary issues relevant to the medium.
Note: May be used to satisfy the Period/Area 2 - after-1750 requirement.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ARTH 600. Graduate Seminar** 1 Unit
Grading Basis: Pass/Fail
Prerequisite(s): Graduate standing.
Fee: An additional \$75.00 is charged for this course.
Description: Reports, critiques, presentations and discussions on personal research and current topics in visual arts.
Note: Cross-listed with ART 600 and CCS 600.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ARTH 621. Topics in Modern Art** 3 Units
Prerequisite(s): Consent of instructor.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ARTH 623. History of Performance Art** 3 Units
Prerequisite(s): Graduate standing.
Description: Consideration of investigation of experimental strategies and ideological aims of visual artists who used their bodies as the primary vehicle of expression, information, communication, and social change. Performance Art has had the dubious distinction of being the most censored art medium, and since the 1960s artists have been continually arrested and fined for their work. This is a highly significant social fact, one that draws attention to Performance Art's particularly disruptive aesthetic codes and materials, emphasizing presentation over representation; intersubjective, human bodies over inanimate objects; and temporality over spatiality.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ARTH 624. Installation Art** 3 Units
Prerequisite(s): Graduate standing.
Description: An advanced exploratory seminar that investigates a contemporary art form as well as a thorny art-historical problem: the term "installation" now functions both as a loose descriptor for a myriad of contemporary artworks (having supplanted terms such as Assemblage and Environment) independent of medium and context, as well as a general and comprehensive art-historical genre—a circumstance that has its own compelling historical development. The course is designed so that students can grapple with a central issue for contemporary art—the definition of a burgeoning critical term for art history.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ARTH 625. Representations of Trauma in the Visual Arts** 3 Units
Prerequisite(s): Graduate standing.
Description: This seminar examines the changing relationships between trauma and its representation in the twentieth century. Beginning with the Holocaust, the course charts a trajectory from this most profound of collective traumas, to the refinement of clinical definitions of trauma (e.g., PTSD) in the wake of the Vietnam War, to the development of trauma studies in the humanities in the 1990s, to the recent "pictorial turn" within scholarship on trauma. This historical framework will be brought to bear upon the dynamics of how trauma and visibility have been approached by scientists, scholars, and artists.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

<p>ARTH 626. Topics in Contemporary Art Prerequisite(s): Permission of instructor. Description: An advanced-level seminar on special topics in contemporary art. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>	<p>ARTH 647. Introduction to Critical and Curatorial Studies I 3 Units Prerequisite(s): Consent of instructor. Description: An introduction to curatorial practice of the last 30 years. Focusing on the curator's increasingly prominent role in the reception and synthesis of contemporary art, the course explores developments in exhibition design in terms of art production, international exchange, globalization, and critical theory. Note: Cross-listed with CCS 647. Note: A student may only receive credit for only one of the following courses: ARTH 547, CCS 547, ARTH 647, CCS 647.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>ARTH 631. Topics in Asian Art Prerequisite(s): Restricted to graduate students or consent of instructor. Description: Advanced study on selected topics in Asian art and architecture. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>	<p>ARTH 648. Critical and Curatorial Studies II 3 Units Prerequisite(s): ARTH 547, or CCS 547, or ARTH 647, or CCS 647, or consent of instructor. Description: This seminar is structured as a curatorial practicum. Students work with the professor to develop and produce an exhibition from the university's print collection. Throughout the semester, weekly readings and presentations focus on contemporary exhibition practice as well as on the theoretical and critical concerns undergirding the student's developing exhibition. Note: Cross-listed with CCS 648. Note: A student may receive credit for only one of the following courses: ARTH 548, ARTH 648, CCS 548 and CCS 648. Note: Formerly taught as Museum Methods II.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>ARTH 641. Seminar in Art History Prerequisite(s): Consent of instructor. Description: Exploration of core problems in iconography, formal analysis, criticism, or historiography. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>	<p>ARTH 642. Theories & Methods in the Visual Arts 3 Units Term Typically Offered: Fall Only Prerequisite(s): Graduate standing, or permission of the instructor. Description: Introduces students to various art historical and interdisciplinary theoretical perspectives and methodological approaches that have shaped the understanding, interpretation, and production of visual art and culture from the nineteenth century to the present. The course will explore these theories and methods as specific fields of inquiry through the study of primary texts, secondary or applied texts, artists' writings and artworks. Note: This course is required for completion of all graduate degrees in the Department of Fine Arts.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>ARTH 643. Independent Study Prerequisite(s): Consent of instructor. Description: Credit according to achievement. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>1-12 Units</p>	<p>ARTH 651. Topics in Ancient Art 3 Units Prerequisite(s): Consent of instructor. Description: Advanced study on selected topics in ancient art and architecture. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>ARTH 644. Independent Study Prerequisite(s): Consent of instructor. Description: Credit according to achievement. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>1-12 Units</p>	<p>ARTH 661. Topics in Medieval Art 3 Units Prerequisite(s): Consent of instructor. Description: Advanced study on selected topics in medieval art and architecture. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>ARTH 645. Thesis Guidance Grading Basis: Pass/Fail For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>	<p>ARTH 671. Topics in Renaissance Art 3 Units Prerequisite(s): Consent of instructor. Description: Advanced study on selected topics in art and architecture of the Renaissance. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>ARTH 646. Thesis Guidance Grading Basis: Pass/Fail For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>	<p>ARTH 681. Topics in Baroque Art 3 Units Prerequisite(s): Consent of instructor. Description: Advanced study on selected topics in art and architecture of the 17th and 18th centuries. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>

ARTH 693. Topics in Modern Architecture **3 Units**

Prerequisite(s): Consent of instructor.
Description: Advanced study on selected topics in modern architecture. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ARTH 695. Topics in American Art **3 Units**

Prerequisite(s): Consent of instructor.
Description: Advanced study on selected topics in American art and architecture. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ARTH 699. Topics in Urban History **3 Units**

Prerequisite(s): Consent of instructor.
Description: Advanced research in urban history from an architectural standpoint. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ARTH 743. Directed Reading for Comprehensive Exams (Major) **2-12 Units**

Grading Basis: Pass/Fail
Prerequisite(s): Completion of coursework for the PhD. To be taken by doctoral students who have completed all coursework and are preparing for the major comprehensive exam.
Description:
Note: May be repeated up to 12 hours but only 2 hours count towards degree requirements.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ARTH 744. Directed Readings for Comprehensive Exams (Minor) **1-9 Units**

Grading Basis: Pass/Fail
Prerequisite(s): Completion of all coursework for the PhD. To be taken by doctoral students who have completed all coursework and are preparing for the minor comprehensive exam.
Description:
Note: May be repeated up to 9 hours but only 1 hour counts toward degree requirements.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ARTH 745. Dissertation Research **1-12 Units**

Grading Basis: Pass/Fail
Prerequisite(s): Permission of dissertation director. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Asian Studies (AST)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

AST 500. Topics in Asian Studies-Humanities **3 Units**

Description: Selected topics in Asian studies from a humanities perspective. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

AST 501. Topics in Asian Studies-Social Sciences **3 Units**

Description: Selected topics in Asian studies from a social science perspective. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

AST 517. Anthropology of China **3 Units**

Term Typically Offered: Fall Only
Prerequisite(s): Graduate standing or permission of the instructor.
Description: It is widely acknowledged that China is a rising power in the global political economy. However, with the coexistence of tradition and modernity, the nature of Chinese culture and society remains heavily debated. This course explores a wide range of topics and issues that constitute the socio-cultural fabric of contemporary mainland Chinese society. These topics include, but are not limited to, family, gender, ethnicity, religion, education, politics, and economics. Our investigation will focus on two broad themes: 1) the unity and diversity of Chinese society, and 2) the continuity and change that took place from late traditional China to the present. The goal of this course includes learning various aspects of Chinese culture and society, studying diverse anthropological approaches to the study of China, and examining the political dimensions of representation.
Note: Cross-listed with ANTH 517.
Note: Students may not receive credit for this course and ANTH 317 or AST 317.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

AST 531. Studies in Asian Art **3 Units**

Prerequisite(s): One 300-level course in Asian art, or consent of instructor.
Description: Select topics that examine the development of art and architecture in the context of social and cultural history of China and Japan.
Note: Cross-listed with ARTH 531.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

AST 598. Nationalism and Modernity in East Asia 3 Units

Description: The creation of modern nation-states in China, Japan, and Korea from 1840 to 1945.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

AST 641. Clash of Civilizations in the 21st Century 3 Units

Description: This course examines three major civilizations (Western, Islam, and Chinese) and their roles in international relations in the 21st century.

Note: Cross-listed with POLS 641.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Audiology (AUDI)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

AUDI 600. Anatomy and Physiology of Hearing 3 Units

Description: Intensive study of the gross aspects of anatomy associated with normal hearing, including the peripheral and central auditory system.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

AUDI 604. Essential Techniques in Audiometry for Pediatrics and Adults 3 Units

Description: The epidemiology of hearing loss. Basic tests of auditory function including pure tone audiometry, speech audiometry and immittance. Focus on both pediatric and adult aspects of testing, with additional topics related to newborn testing. Principles of masking and pathologic correlates of hearing loss discussed.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

AUDI 605. Introduction to Audiological Techniques and Rehabilitation 3 Units

Term Typically Offered: Fall Only

Description: This course provides an introduction to the evaluation, screening and habilitation/rehabilitation of adults and children with hearing impairment. Topics include tests of auditory function, effects of auditory pathology, and amplification.

Note: Cross-listed with CMDS 405.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

AUDI 606. Acoustics and Speech Acoustics 3 Units

Description: Study of sound and its measurement. Relationship of sound to human hearing. Speech acoustics and perception of speech.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

AUDI 608. Auditory Anatomy and Physiology II 3 Units

Description: Structure and function of the central auditory system with an emphasis on electrophysiologic assessment of cortical and subcortical pathways for clinical purposes.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

AUDI 610. Clinical Clerkship I 1 Unit

Fee: An additional \$125.00 is charged for this course.

Description: A two-semester sequence of directed observation in the audiology clinic. Participation in interviewing patients, eliciting a complete history, preparing written technical reports and record keeping. Includes observations during the first semester. 1 credit hour each semester.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

AUDI 612. Pathology of the Auditory-Vestibular System 3 Units

Description: Study of pathology of the auditory-vestibular system with special reference to clinical symptomatology. Etiology, epidemiology, pathogenesis, diagnosis and treatment of auditory-vestibular disease and injury.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

AUDI 614. Clinical Techniques in Audiology I 1 Unit

Fee: An additional \$25.00 is charged for this course.

Description: Part one of a two-semester sequence of directed laboratory exercises. Laboratory exercises will give students hands-on experience with clinical techniques designed to evaluate hearing.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- AUDI 615. Clinical Techniques in Audiology II** 2 Units
Fee: An additional \$25.00 is charged for this course.
Description: Part two of a two-semester sequence of directed laboratory exercises. Laboratory exercises will give students hands-on experience with clinical techniques designed to evaluate hearing.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- AUDI 618. Instrumentation and Electronics in Audiology** 2 Units
Description: Basics of electronic circuitry, especially in audiometric instrumentation and amplification systems. Includes instrumentation calibration, trouble-shooting and repair. Analog, analog-digital hybrid, and digital signal processing.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- AUDI 619. Audiologic Counseling & Patient Communication** 1 Unit
Description: An exploration of the communication and counseling relationship between student clinician and patient. Students will have an opportunity to develop and refine effective communication and counseling via interaction with standardized patients and personal reflection.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- AUDI 620. Clinical Clerkship II** 2 Units
Fee: An additional \$125.00 is charged for this course.
Description: A three-semester sequence of introductory level clinical audiometry under the aegis of an experienced clinician. Mastery of basic skills such as threshold determination for pure tones and speech stimuli, masking, auditory discrimination measurements, tympanometry, and calibration. 2 credit hours each semester.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- AUDI 621. Audiologic Rehabilitation** 3 Units
Term Typically Offered: Fall Only
Description: Management strategies for hearing loss beyond the hearing aid. Topics include auditory training, speech reading, communication repair strategies, counseling, adjustment to hearing aids, assistive listening devices and cochlear implants.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- AUDI 622. Electrophysiologic Techniques in Audiology** 3 Units
Fee: An additional \$25.00 is charged for this course.
Description: Principles of biological potentials, signal averaging, amplification and filtering. Clinical utility of the brainstem auditory evoked response with attention to diagnostic techniques and peripheral hearing assessment.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- AUDI 623. Audiologic Electrophysiology II** 1 Unit
Description: Clinical acquisition of middle and late auditory evoked potentials with applications for both diagnostic and rehabilitative ideology. Equal emphasis is placed on acquisition and interpretation of those evoked responses.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- AUDI 624. Amplification Technology** 3 Units
Fee: An additional \$25.00 is charged for this course.
Description: Principles of amplification electronics, electroacoustics and acoustics in audiologic (re)habilitation. Real ear measurements. ANSI specifications. Earmold acoustics. Modifying acoustical parameters.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- AUDI 625. Audiologic Counseling** 1-2 Units
Prerequisite(s): Students in Doctor of Audiology Program.
Description: Review of the complex psychosocial and emotional aspects arising within families in the presence of both pediatric and adult hearing loss. Examination of counseling approaches for "non-professional" counseling.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- AUDI 626. Assessment and Management of Vestibular Disorders** 3 Units
Description: Study of the contribution of the vestibular system to balance and orientation. Technologies and procedures for assessing the dizzy patient. Management of vestibular disorders.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- AUDI 627. Tinnitus** 3 Units
Term Typically Offered: Spring Only
Description: The purpose of the course is to provide an overview of tinnitus applications in Audiology. Topics will include defining tinnitus and discussing theoretical foundations, tinnitus in relation to hearing impairment, psychological mechanisms involved with tinnitus, tinnitus in the various age populations, drug induced tinnitus, music's effect on tinnitus, acoustic shock, assessing and evaluating a patients tinnitus for clinical decision making, hearing aids/cochlear implants as treatment for tinnitus, additional intervention methods, misophonia, phonophobia, management of tinnitus in patient's across the lifespan, emerging approaches to treating tinnitus, and business management considerations when treating patient's with tinnitus.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- AUDI 628. Differential Diagnosis in Audiology** 2 Units
Description: Interpreting the audiologic test battery. Integrating audiologic test results with other diagnostic procedures (i.e., radiologic, neurologic, pathologic, etc). Advanced concepts in test construction, delivery and interpretation. Using test results to plan remediation.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

AUDI 629. Cochlear Implants and other Implantable Hearing Devices**4 Units**

Description: Comprehensive Study of cochlear implantation, BAHA and middle ear implantation including: general anatomy, device components, patient selection and evaluation, speech coding strategies, mapping/programming, troubleshooting, and verification.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

AUDI 630. Amplification Selection and Fitting**3 Units**

Fee: An additional \$25.00 is charged for this course.

Description: Determining candidacy and benefit from amplification. Selecting appropriate amplification systems and options including assistive listening devices and implantable technologies. Review of current technologies and their clinical efficacy. Introduction to the business aspects of hearing aid dispensing.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

AUDI 632. Professional Issues in Audiology**2 Units**

Description: Overview of the social, political, ethical, and economic climate in hearing health care delivery. Interprofessional relationships and responsibilities. Supervision of other professionals. Licensure and certification.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

AUDI 634. Electrophysiologic Techniques in Audiology II**1 Unit**

Description: This course introduces brain imaging techniques for cognitive brain research in Audiology with a focus on late auditory event-related potentials (ERP's). The course will focus on four main areas: 1) theory; 2) experimental design; 3) data collection, analysis, and interpretation; and 4) the use of late potentials in audiological practice. Basic tutorials on EEG and ERP software packages will include ASA and EEGLAB.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

AUDI 635. Audiology Internship**4 Units**

Fee: An additional \$125.00 is charged for this course.

Description: A three-semester sequence of supervised patient care in a variety of sites closely associated with the university. Student clinicians will assume increasing responsibility for the full range of basic and intermediate level audiological procedures and interpretation. 4 credits each semester.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

AUDI 636. Pediatric Audiology**3 Units**

Term Typically Offered: Summer Only

Description: The purpose of this course is to provide an overview of Pediatric Audiology. Topics will include review of the Joint Committee on Infant Hearing position statement, medical evaluation and management of hearing loss in children, newborn hearing screening, hearing test protocols (BOA, VRA, CPA), evaluation of hearing loss in children with special needs, evaluation of speech perception in children, APD testing, hearing aid fitting, the role of the test assistant, communication approaches and communication bias, working with multicultural/multilingual families, counseling and collaboration with children and families, ANSD and mild/unilateral hearing loss.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

AUDI 638. Educational Audiology**3 Units**

Description: Overview of current management options for the (re)habilitation of children with hearing loss, including: educational issues, amplification, FM systems, classroom listening systems and counseling.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

AUDI 640. Special Topics in Audiology**1-3 Units**

Description: An elective course designed to focus on specific topics in audiology. Subject matter to be determined by the faculty and students. May be repeated to a limit of 6 credits.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

AUDI 642. Gerontologic Audiology**3 Units**

Description: A broad study of the human aging process at the cellular, organ, system and social levels with respect to the hearing process. Study of the hearing-impaired elderly in a social context with consequences for case management.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

AUDI 646. Advanced Topics in Medical Audiology**4 Units**

Term Typically Offered: Spring Only

Description: This course will introduce students to a variety of content areas related to advanced topics in medical audiology. Topic areas include special populations and diseases in vestibular audiology, imaging, intraoperative monitoring, surgical and medical aspects of implantable devices, and inter-professional practice and education.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

AUDI 648. Hearing Science I**3 Units**

Prerequisite(s): Permission of instructor.

Description: The first in a two-course sequence in Hearing Science. It will survey contemporary theory and research in audition, with emphasis on modern mathematical and psychological methods. Major topics will include the anatomy and physiology of the auditory system, measurement and control of sound, auditory signal analysis, and basic auditory abilities such as detection, discrimination, and masking. Note: Cross-listed with PSYC 646

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

AUDI 650. Research Methods 3 Units

Description: Students will design a clinical research project through: a critical review of the literature, determination of appropriate research design, and a statistical review. Students will prepare an application for the Human Studies Protection Program Office.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

AUDI 652. Prevention of Hearing Loss 2 Units

Description: Focuses on the effect of noise on the auditory system, noise measurement and abatement, hearing conservation programming, OSHA standards, etc. The medical-legal aspects of hearing impairment.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

AUDI 654. Advanced Auditory Processing 3 Units

Term Typically Offered: Spring Only

Fee: An additional \$25.00 is charged for this course.

Description: Special study of the central auditory nervous system with attention to normal and disordered auditory function past the auditory periphery (e.g., linguistic, cognitive, and suprathreshold deficit consideration). Assessment and current strategies for management of auditory processing disorders.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

AUDI 656. Practice Management in Audiology 4 Units

Term Typically Offered: Fall Only

Description: Organizing, managing and expanding an audiologic practice. Determining costs and fees, accounts management, quality assurance, third-party reimbursement, contracting for services, demographic trends, business and professional ethics, professional liability, marketing, certification and licensure.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

AUDI 660. Investigation in Audiologic Practice 1-3 Units

Description: Directed course in which students investigate specific clinical problems in audiology. Will include research on a topic of clinical or professional interest. Investigation eventuates in a publishable paper. May be repeated to a maximum of 9 credits.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

AUDI 670. Clinical Externship 9 Units

Description: A 3-semester sequence of advanced clinical practicum under the direction of a faculty member or preceptor in an external practicum. Each externship is custom-tailored to the interests of the trainee. May involve relocation or travel.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

AUDI 679. Independent Study in Audiology 1-6 Units

Prerequisite(s): Requires consent of instructor in order to register.

Description: Individualized course with topics determined by student and instructor. May be repeated.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

AUDI 680. Special Topics in Audiology 1-3 Units

Term Typically Offered: Fall Only

Description: Discussion covering current ideas in audiology as they relate to clinical practice and research. An emphasis is placed on contemporary and/or advanced topics relevant for the more experienced student.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Biochemistry (BIOC)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

BIOC 545. Biochemistry I 3 Units

Term Typically Offered: Fall Only

Description: Chemistry of amino acids, protein structure and function; metabolism of carbohydrates, fats and amino acids.

Note: Credit may not be earned in both BIOC 545 and BIOC 645.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOC 547. Advanced Biochemistry II 3 Units

Term Typically Offered: Spring Only

Prerequisite(s): BIOC 545 Biochemistry of nucleotides and nucleic acids; RNA, DNA and protein biosynthesis, biomembrane phenomena, enzyme properties, kinetics, and control mechanisms; ligand binding.

Description:

Note: Credit may not be earned in both BIOC 547 and BIOC 647.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOC 603. Special Topics in Biochemistry 1-4 Units

Prerequisite(s): BIOC 645 and BIOC 647 (or concurrently), or consent of instructor.

Description: Arranged to fit individual needs on topics of current interest or to receive some advanced training or conduct research project.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- BIOC 606. Biochemistry Seminar** 1 Unit
Description: Both Fall and Spring semesters.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BIOC 611. Techniques in Biomolecular Interactions** 4 Units
Term Typically Offered: Fall Only
Prerequisite(s): Student must be registered in the graduate school.
Description: Biochemical, molecular, and bioinformatic techniques to understand cellular interactions, including chromatin associations that inform DNA structure, editing, and gene expression; protein-protein interactions; and protein: ligand associations that influence enzyme activity.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BIOC 613. Biochemistry Laboratory** 2-4 Units
Grading Basis: Pass/Fail
Description: The course will consist of participation in the research programs of two laboratories in the department. A half-semester will be devoted to each laboratory. Pass/Fail grading.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BIOC 619. Research** 1-15 Units
Grading Basis: Pass/Fail
Description: Biochemistry research.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BIOC 620. Scientific Method and Grant Writing** 2 Units
Grading Basis: Pass/Fail
Term Typically Offered: Spring Only
Prerequisite(s): Restricted to students in the Biochemistry and Molecular Genetics graduate programs; permission of course director.
Description: This objective of this course is to introduce students to the fundamentals of grantsmanship. The topics incorporate all aspects for grant application process as well as overview of the scientific method, generation of hypotheses, and research design. Student-directed learning is a major component for this course with the summative event being completion of a grant proposal. A reiterative writing process for proposal development will be ongoing throughout the course.
Note: May be repeated once for up to 4 credits.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BIOC 630. Responsible Conduct of Research: Survival Skills and Research Ethics** 1-4 Units
Grading Basis: Pass/Fail
Description: The topics covered include 11 areas of Research Compliance training mandated by the NIH for training grants and focuses on contemporary research ethics in biomedical sciences.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BIOC 640. Principles of Biochemistry** 5 Units
Term Typically Offered: Spring Only
Prerequisite(s): Consent of instructor.
Description: Covers general aspects of biochemistry with special emphasis given to areas applicable to dentistry. Topics include protein structure and function; chemistry and metabolism of carbohydrates, lipids, amino acids, and nucleotides; molecular genetics; nutritional biochemistry; calcification; and molecular endocrinology. Clinical conferences keyed to current lecture topics are presented by clinical faculty.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BIOC 645. Advanced Biochemistry I** 4 Units
Term Typically Offered: Fall Only
Prerequisite(s): Students must be registered in the graduate school.
Description: Chemistry of amino acids, protein structure and function; metabolism of carbohydrates, fats and amino acids.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BIOC 647. Advanced Biochemistry II** 4 Units
Term Typically Offered: Spring Only
Prerequisite(s): BIOC 545 or BIOC 645 or consent of instructor.
Description: Biochemistry of nucleotides and nucleic acids; RNA, DNA and protein biosynthesis, biomembrane phenomena, enzyme properties, kinetics, and control mechanisms; ligand binding.
Note: Credit may not be earned in both BIOC 547 and BIOC 647.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BIOC 648. Journal Club in Biochemistry and Molecular Genetics** 1 Unit
Grading Basis: Pass/Fail
Term Typically Offered: Fall Only
Description: This course will consist if student presentations of primary, peer-reviewed literature featuring current knowledge and techniques relevant to biochemical, molecular, and genetic understanding of molecular and cellular processes in health and disease.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BIOC 661. Molecular Mechanisms of Toxicology** 3 Units
Term Typically Offered: Spring Only
Description: Molecular interactions of drugs and toxicants on cellular processes; including foreign compound metabolism, signal transduction, cell cycle, DNA repair/DNA replication are covered and put in context topics in molecular epidemiology.
Note: Crosslisted with PHTX 661.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOC 662. Biomedical Research Data Analysis Methods 1 Unit**Term Typically Offered:** Summer Only**Prerequisite(s):** Currently enrolled graduate students in good standing.**Description:** A lecture and discussion course designed for graduate students desiring to learn the basic statistical methods and data presentation approaches that are used in biomedical research.**Note:** This course requires permission from the instructor.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOC 663. High-Throughput Sequencing Data Analysis 3 Units**Term Typically Offered:** Fall Only**Prerequisite(s):** Students must be registered in the graduate school and are expected to have a basic understanding of molecular biology.**Description:** Permission from the course director is needed for students not meeting these prerequisites. High-Throughput Sequencing Data Analysis will focus on current issues in bioinformatics, including: next generation sequencing; microRNA and mRNA integrative analysis; epigenetics, metagenomics, personalized genomics, and single cell sequencing.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOC 667. Cell Biology 3 Units**Term Typically Offered:** Spring Only**Prerequisite(s):** One quarter of graduate level biochemistry or consent of instructor.**Description:** An advanced treatment of contemporary cell biology including membrane structure and function, cytoskeleton, signal transduction, regulation of cell cycle, apoptosis, and molecular mechanisms of cellular differentiation. Graded.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOC 668. Molecular Biology 3-4 Units**Term Typically Offered:** Spring Only**Prerequisite(s):** Student must be registered in the graduate school.**Description:** Students are expected to have a basic understanding of molecular biology principles and protein structure. Best preparation for succeeding in the course is previous course in biochemistry and experience with reading scientific literature. Permission from the Course Director is needed for students not meeting these prerequisites. This course examines the fundamental principles of molecular biology as they apply to mechanisms controlling gene expression. Topics include: transcriptional and post-transcriptional regulation of gene expression; RNA and miRNA biology; and protein synthesis and regulation. An emphasis will be on student-directed learning requiring completion of pre-class reading, and in-class discussion of current literature.**Note:** Crosslisted with BIOL 668.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOC 670. Biomedical Genetics and Genomics 3-5 Units**Term Typically Offered:** Fall Only**Prerequisite(s):** Students must be registered in the Graduate School.**Description:** This course examines the fundamental principles of genetics and genomics as they apply to biomedical research. Topics include: Mendelian, population, quantitative genetics, epigenetics, and bioinformatics. An emphasis will be on reading and critiquing current literature.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOC 675. Cancer Biology 4 Units**Prerequisite(s):** BIOC 545 or BIOC 645 or equivalents.**Description:** A comprehensive course on cancer biology with emphasis on molecular mechanisms and research. Topics will include: the public health impact of cancer, molecular mechanisms of carcinogenesis and metastasis, host-tumor interactions, current and future molecular therapies and prevention, apoptosis, tumor immunology, cancer genetics and genomics, prevention, metabolism in cancer cells, signal transduction, cell cycle, and oncogenes and tumor suppressor genes. There will also be clinical-based lectures.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOC 680. Biomolecular Interactions 2 Units**Prerequisite(s):** BIOC 645 and BIOC 647 or equivalents.**Description:** This course examines techniques used to characterize biomolecules and their interactions including surface plasmon resonance, equilibrium dialysis, microcalorimetry, analytical ultracentrifugation, dynamic light scattering and absorption fluorescence and circular dichroism spectroscopies.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOC 816. Special Project-Biochemistry 1-16 Units**Description:** This course is to be arranged to fit individual needs to cover topics of current interest or to participate in research projects or to receive some advance training.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Bioengineering (BE)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific

fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

BE 500. Special Topics in Bioengineering **3 Units**

Term Typically Offered: Fall, Spring, Summer

Description: This course will be devoted to topics that usually are not treated in detail in the general curriculum.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BE 522. Biomedical Acoustics **3 Units**

Term Typically Offered: Spring Only

Prerequisite(s): BE 420.

Description: An introduction to the fundamental principles of physical acoustics with an emphasis on biomedical applications. Major concepts covered include acoustic wave physics, transducers, and ultrasound imaging.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BE 524. LabVIEW for Bioengineers **3 Units**

Term Typically Offered: Fall Only

Prerequisite(s): BE 340 or equivalent.

Description: This course will introduce students to an intermediate level of LabVIEW (Laboratory Virtual Instrument Engineering Workbench) available from National Instruments (Austin, TX). LabVIEW is the worldwide industry standard graphical programming environment for developing data acquisition, instrument control, and industrial automation software. Students will explore core programming fundamentals common to all programming languages by using LabVIEW software to develop independent programs and data acquisition solutions using a combination of LabVIEW, data acquisition hardware, and standard test instrumentation hardware.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BE 530. Machine Learning in Python **3 Units**

Term Typically Offered: Fall, Spring

Prerequisite(s): BE 420.

Description: This course covers programming concepts in Python, machine learning concepts, and application of machine learning into biomedical and other problems using Python. Students will learn about the most applicable Python libraries that deal with different machine learning tools. Students are expected to work on a team project and write technical reports.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BE 540. Machine Learning in Medicine **3 Units**

Term Typically Offered: Spring Only

Prerequisite(s): BE 420.

Description: Topics: 1) fundamentals of medical data, 2) application of machine learning models & algorithms to medicine, 3) learning from data & classification of disorders, and 4) overview of health data, collection with sensors, body area networks, brain image data and other publicly available medical applications data. Students will learn about machine learning applications to real world medical data through examples and reading papers. Students are expected to work on a team project and write technical reports.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BE 542. Medical Image Computing **3 Units**

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): BE 340 and BE 420.

Description: Fundamentals of 2-D and 3-D image computing, application of image computing algorithms to medical images, enhancement and restoration of 2-D and 3-D medical data, and fundamentals of machine vision and medical data visualization. Students will learn image restoration, computer vision and visualization techniques with applications to medical data through examples and reading papers. Students are expected to work on a team project and write technical reports.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BE 543. Computer Tools for Medical Image Analysis **3 Units**

Term Typically Offered: Spring Only

Prerequisite(s): BE 420.

Description: This course covers: 1) Essential computer software that can be used for handling all types of medical data, 2) advanced computer software that is used for medical image analysis, such as segmentation, registration, motion correction, etc., and 3) development of comprehensive computer-aided diagnosis systems based on these ready-to-go software packages.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BE 544. Artificial Intelligence Techniques in Digital Pathology **3 Units**

Term Typically Offered: Spring Only

Prerequisite(s): BE 542 & skills in programming languages R and Python; or consent of instructor.

Description: This course provides both theoretical and practical information about computer vision and AI techniques required to process and analyze microscopic images as a part of the evolving transition to digital pathology. This evolution will enable the use of AI models in pathology to aid pathologists and healthcare professionals in the management and the diagnosis of different diseases.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

<p>BE 552. Introduction to Tissue Engineering 3 Units Term Typically Offered: Spring Only Prerequisite(s): CHEM 341, BE 354, BE 359, and BE 450. Description: Design, development and clinical application of tissue engineered components, including blood vessels, bone, cartilage, pancreas, liver and skin, for use in the human body. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>BE 601. Bioengineering Seminar 1 Unit Prerequisite(s): Admission to the MS Bioengineering program or the PhD in Interdisciplinary Studies with a Specialization in Translational Bioengineering (ISSTBE-PhD) program. Description: Current research topics in the field of transnational bioengineering will be presented and discussed. Sessions will include guest speakers, student presentations on research projects with interaction and feedback from students and faculty, and critical discussion of scientific literature. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>BE 553. Nanoscale Bioengineering: Application and Methodology of Nanobiomaterials in Bioengineering 3 Units Prerequisite(s): BE 450 or BE 453 or permission of department chair. Description: An introduction to the fundamental principles of nanoengineering with a focus on 1) synthetic methodologies of tailored nanobiomaterials (physical, chemical and electrochemical); 2) nanobiomaterial characterization using advanced analytical, microscopic and spectroscopic techniques; and 3) therapeutic and diagnostic applications. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>BE 602. Graduate Internship in Bioengineering 2 Units Grading Basis: Pass/Fail Term Typically Offered: Fall, Spring, Summer Prerequisite(s): Admission to Graduate Study, Permission of Department Chair, and Permission of Director of Career Services. Description: Supervised professional experience in industry at the graduate level. This course provides the structure and focus for the graduate intern field assignment to ensure that the assignment is appropriate and consistent with the intern's graduate course of study and professional development. Not to be counted towards meeting the requirements for a degree. May be repeated for credit. Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>BE 581. Advanced Computer-Aided Design and Manufacturing for Bioengineers 3 Units Term Typically Offered: Fall, Spring, Summer Prerequisite(s): BE 340 or by permission of Department Chair. Description: An introduction to the engineering design and manufacturing processes for bioengineering applications with an emphasis on the use of modern computer-based analysis, design and presentation tools as well as manufacturing techniques such as casting, machining, forming and assembly for polymer and metal-based materials. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>BE 603. Bioengineering Research Ethics 2 Units Prerequisite(s): Admission to the PhD in Interdisciplinary Studies, specialization in Translational Bioengineering program or by permission of Department Chair. Description: Complex ethical issues facing bioengineers will be addressed, including conflicts of interest, patient rights, protection, beneficence and confidentiality, equitable allocation of scarce health resources, research misconduct, animal experimentation, and clinical trails for new medical devices. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>BE 593. Independent Study in Bioengineering 1-4 Units Term Typically Offered: Fall, Spring, Summer Prerequisite(s): Faculty consent. Description: A theoretical or experimental investigation of a problem area related to Bioengineering. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>BE 605. Tissue and Molecular Biology Techniques Laboratory 3 Units Term Typically Offered: Summer Only Prerequisite(s): BE 359 or equivalent. Fee: An additional \$100.00 is charged for this course. Description: Introduces students to techniques used in tissue and molecular biology laboratories including cell and tissue culture, cell assays, cell and tissue imaging techniques and sterilization techniques. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>BE 600. Advanced Topics in Bioengineering 1-6 Units Prerequisite(s): Graduate/Professional Standing in Bioengineering or Consent of Instructor. Description: An advanced course in bioengineering topics not covered by regularly scheduled courses. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	

- BE 611. Cardiovascular Dynamics** 3 Units
Prerequisite(s): Graduate or professional standing in Bioengineering.
Description: Review of basic cardiovascular physiology. Application of basic engineering principles, including electrical and mechanical analog models to describe cardiovascular function and data acquisition and analysis techniques to develop medical devices and instrumentation. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BE 621. Bioinstrumentation** 4 Units
Term Typically Offered: Fall Only
Prerequisite(s): Graduate/Professional Standing; and BE 354 and BE 423 or equivalent(s); or consent of instructor.
Description: Analysis and design of Bioinstrumentation. Basic circuitry, electronics and laboratory techniques including sensors, transducers, biopotentials, amplifiers, measurement and safety. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BE 630. Biomechanical Computer Modeling and Simulation of Human Movement** 3 Units
Prerequisite(s): Graduate/professional standing; BE 354 or equivalent.
Description: Development and application of musculoskeletal computer modeling and simulation techniques to analyze human movement biomechanics. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BE 639. Injury Biomechanics** 3 Units
Prerequisite(s): ME 649 or BE 354 or equivalent, or permission of the instructor.
Description: Application of mechanics to the study of human injury. Response of the human body to injurious conditions. Injury tolerance of the human body. Applications to child abuse, transportation safety and the medico-legal environment.
Note: Cross-listed with ME 639.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BE 640. Computational Methods for Medical Image Analysis** 3 Units
Prerequisite(s): BE 420.
Description: This course covers the theory of stochastic and geometric models of medical imaging, including spatial interaction models, intensity models, and geometric shape models. The emphasis is on understanding the underlying mathematics in a practical sense. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BE 645. Artificial Intelligence and Radiomics** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Graduate/professional standing; BE 340 or equivalent course.
Description: Artificial intelligence is comprehensively a bundle of cutting edge computational algorithms that basically learn the patterns in the provided data to make prediction on new unseen data. Radiomics is almost a new terminology in the radiology area which means the extraction of large number of features from different kinds of medical images. This course couples both artificial intelligence and radiomics together to extract meaningful hidden quantitative data to be used in real word medical applications. This course also presents the basic concepts and applications of artificial intelligence in the computer aided diagnostic systems. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BE 650. Advanced Biomaterials** 3 Units
Prerequisite(s): BE 450 or consent of instructor.
Description: Advanced topics on the use of biomaterials, and their performance, in reconstructive surgery. Specifically skin, nerve, bone, and soft tissue regeneration utilized for burn patients, cancer patients, and trauma patients. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BE 654. Advanced Physiology for Engineers** 3 Units
Prerequisite(s): BE 354.
Description: This course provides an in-depth view of the fundamental principles of how biochemistry and physiology are integrated. Emphasis is placed on the physiologic mechanisms for feedback control of physiologic function in humans. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BE 658. Rehabilitation Engineering and Assistive Technology** 3 Units
Prerequisite(s): ME 649 or BE 354 or equivalent, or permission of instructor.
Description: Introduction to rehabilitation engineering and assistive technology. Medical aspects of disability, assistive technology applications and current rehabilitation research.
Note: Cross-listed with ME 658.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BE 668. Translational Bioengineering teaching Practicum** 2 Units
Prerequisite(s): Admission to Translational Bioengineering PhD program and permission of course instructor.
Description: A guided learning experience in inquiry-based instructional techniques and best practices in engineering education that includes field experience as a graduate instructor. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- BE 670. Cellular Mechanobiology in Cancer** 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): BE 359, BE 450.
Description: This course will focus on biophysical and bioengineering aspects of mechanotransduction, the process through which living cells sense and respond to their mechanical environment. Specifically, this class will discuss the role of these mechanisms in the context of cancer tumorigenicity and spread. Students will learn how mechanical inputs to cells influence both subcellular biochemistry and whole-cell behavior. They will also study newly engineered technologies for force manipulation and measurement in living cells, and synthetic strategies to control the mechanics and chemistry of the extracellular matrix. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BE 683. Artificial Organs** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): Graduate/professional standing in bioengineering.
Description: Bioengineering design of artificial organ replacement systems and their clinical usage. Commercially available systems analyzed for mass transfer efficiency; biomechanics and hemodynamics; and size and efficiency of the device. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BE 685. Modeling of Biological Phenomena** 3 Units
Term Typically Offered: Summer Only
Prerequisite(s): Graduate/professional standing in Bioengineering, BE 359 and BE 354 or equivalent(s).
Description: Introduces basic concepts of the development, analysis, and evaluation of mathematical models of biological systems. Demonstrates how modeling related to genetic, biochemical, physiological, and/or ecological systems is performed by combining both biological and mathematical information, with the goal to apply these techniques in the field of translational bioengineering. Sessions will include critical discussion of scientific literature and student presentations on a research project with interaction and feedback from students and faculty. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BE 691. Bioengineering Non-thesis Design/Research Project** 3 Units
Term Typically Offered: Summer Only
Prerequisite(s): Graduate/Professional standing in bioengineering, BE 491, and BE 497.
Description: Design or research project involving a literature search, project planning, design objectives, fabrication and/or experimentation, analysis, technical report writing, and oral presentation under a faculty member's guidance. Final technical report is required to be presented orally to course instructor and faculty mentor for graded evaluation.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BE 692. Bioengineering Clinical Rotation** 2 Units
Prerequisite(s): Successful completion of Translational Bioengineering qualifying exam, permission of advisor and program director, and HIPAA certified.
Description: Students will observe day to day clinical activities associated with patient care by participating in clinical rounds and/or scheduled specialty clinics led by residents, fellow and/or clinical faculty. Exposure to the clinical setting will allow students to gain an understanding of concepts such as patient history, disorder/disease presentation, diagnostics, clinical decision making, treatment modalities, disease management, procedures and clinical outcomes. Students must work with their PhD advisor and the ISSTBE-PhD Program Director to identify clinical rotation opportunities in specialty areas of interests within the Schools of Medicine or Dentistry.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BE 693. Independent Study in Bioengineering** 1-6 Units
Prerequisite(s): Faculty consent.
Description: An advanced theoretical or experimental investigation of a problem area related to Bioengineering. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BE 695. Bioengineering Research Design & Methods** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): Graduate/Professional standing.
Description: Focus on study designs & methodologies and their appropriate application. Emphasis placed on development of specific aims, testable hypotheses, and interpretation and communication of research findings. Data analysis concerns and strategies for parametric and non-parametric applications will be addressed using SPSS. Students will learn to communicate scientific methodologies and findings, and to interpret their
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BE 697. Master of Engineering Thesis in Bioengineering** 1-6 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Graduate/Professional standing in bioengineering.
Description: Original design or research activity in a bioengineering discipline, under the direction of a faculty member. A written thesis must be presented to a faculty committee and defended.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BE 698. Master of Science Thesis in Bioengineering 1-6 Units

Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Graduate or Professional school standing and permission of Department Chair.

Description: Experimental or design-based thesis research performed as part of Master of Science degree requirements. A written thesis is required to be presented and defended orally and submitted to the faculty for approval.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BE 699. Dissertation Research 3-15 Units

Prerequisite(s): Successful completion of the Translational Bioengineering PhD qualifying exam.

Description: Original research activity in an appropriate translational bioengineering discipline, under the direction of a graduate faculty member affiliated with PhD in Interdisciplinary Studies with a Specialization in Translational Bioengineering (ISSTBE PHD).

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Bioethics (BETH)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

BETH 601. Independent Study in Bioethics 1-3 Units

Prerequisite(s): Consent of instructor.

Description: Independent study in Bioethics.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BETH 605. Selected Topics in Bioethics 1-3 Units

Prerequisite(s): To be determined by instructor, in the light of the topic chosen for that semester.

Description: Selected topics in Bioethics (variable content). May be repeated for credit when topic changes.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BETH 621. Ethical Theory 3 Units

Prerequisite(s): Admission into the Bioethics MA program, or consent of instructor.

Description: Recent developments in ethical theory, such as examination of the status of moral facts, moral realism, impartiality and personal attachments, or moral agency.

Note: Cross-listed with PHIL 521, PHIL 621.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BETH 636. Philosophy of Science 3 Units

Term Typically Offered: Occasionally Offered

Prerequisite(s): Junior standing or consent of instructor.

Description: This course provides an introduction to the main philosophical questions concerning scientific knowledge and methodology.

Note: Cross-listed with PHIL 536.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BETH 680. Foundations of Bioethics 3 Units

Prerequisite(s): Admission into Bioethics MA program, or consent of instructor.

Description: Grounding in the major theories and methods of bioethical decision-making, including contemporary controversies about the role of theory, principles, cases, narrative, and virtues.

Note: Cross-listed with PHIL 680, PHIL 580.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BETH 681. Current Controversies in Health Care Ethics 3 Units

Prerequisite(s): Admission into Bioethics MA program, or consent of instructor.

Description: Topics in health care ethics currently attracting the most attention in both professional and public discussions. A variety of viewpoints on the topics will be considered.

Note: Cross-listed with PHIL 681, PHIL 581.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BETH 682. Health and Social Justice 3 Units

Term Typically Offered: Occasionally Offered

Prerequisite(s): Admission into Bioethics MA program, or consent of instructor.

Description: An interdisciplinary approach to a wide array of issues pertaining to health and health care that arise at the intersection of gender, race, sex, disability, class, and culture.

Note: Cross-listed with PHIL 682, WGST 682, PHIL 582, WGST 582.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BETH 683. Race, Medicine, and Health**3 Units****Term Typically Offered:** Spring Even Years**Prerequisite(s):** Only for BETH 683: Admission to a Philosophy Department graduate program (MA or certificate), or consent of instructor.**Description:** An in-depth study of racial disparities in health outcomes and in interactions with the health care system, and an examination of initiatives within the system to advance racial equity**Note:** Cross-listed with PHIL 683.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**BETH 684. Clinical Ethics****3 Units****Prerequisite(s):** Admission into the Bioethics MA program or consent of instructor.**Description:** Application of ethical principles, virtues, and cases in the context of clinical care, with a practical approach toward ethics consultation and conflict resolution.**Note:** Cross-listed with PHIL 684.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**BETH 685. Health Care Ethics Internship****3 Units****Grading Basis:** Pass/Fail**Term Typically Offered:** Fall, Spring, Summer**Prerequisite(s):** Admission to Bioethics MA program or consent of instructor.**Description:** Capstone for Bioethics MA program. Students will complete a community internship and present their results to their peers and program faculty.**Note:** Cross-listed with PHIL 685.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Biology (BIOL)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

BIOL 501. Independent Study**1-3 Units****Prerequisite(s):** Faculty consent, minimum cumulative GPA of 3.0, and completion of biology core.**Description:** Independent study in a selected subject area with a student-selected faculty member.**Note:** No more than 6 hours of Undergraduate Research (BIOL 404, BIOL 405 or BIOL 406 WR) or Independent Study (BIOL 501, BIOL 502 or BIOL 504 WR) may be used to meet the minimum in Biology for the BA or BS.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**BIOL 502. Independent Study****1-3 Units****Prerequisite(s):** Faculty consent, minimum cumulative GPA of 3.0, and completion of biology core.**Description:** Independent study in a selected subject area with a student-selected faculty member.**Note:** No more than 6 hours of Undergraduate Research (BIOL 404, BIOL 405 or BIOL 406 WR) or Independent Study (BIOL 501, BIOL 502 or BIOL 504 WR) may be used to meet the minimum in Biology for the BA or BS.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOL 504. Independent Study - WR 1-3 Units

Term Typically Offered: Occasionally Offered

Prerequisite(s): Faculty consent, minimum cumulative GPA of 3.0, and completion of the Biology core.

Description: Independent study in a selected subject area with a student-selected faculty member.

Note: No more than 6 hours of Undergraduate Research (BIOL 404, BIOL 405 or BIOL 406 WR) or Independent Study (BIOL 501, BIOL 502 or BIOL 504 WR) may be used to meet the minimum in Biology for the BA or BS.

Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOL 510. Behavioral Ecology 3 Units

Term Typically Offered: Occasionally Offered

Prerequisite(s): BIOL 363.

Description: Evolution of behavioral adaptations for survival and reproduction; topics will include foraging, aggression, mate choice, mating strategies, and sociality.

Note: Credit may not be earned for both BIOL 510 and BIOL 610.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOL 511. Behavioral Endocrinology - CUE, WR 3 Units

Term Typically Offered: Occasionally Offered

Prerequisite(s): BIOL 465.

Description: Interactions of hormones, brain, behavior.

Note: Credit may not be earned in both BIOL 511 and BIOL 611.

Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).

Note: Cross-listed with BIOL 611.

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOL 512. Endocrinology 3 Units

Prerequisite(s): BIOL 465.

Description: Chemical regulation in animals.

Note: Credit may not be earned in both BIOL 512 and BIOL 612.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOL 514. Ornithology 3 Units

Prerequisite(s): BIOL 242 and BIOL 244, or consent of instructor.

Fee: An additional \$40.00 is charged for this course.

Description: Evolution, morphology, diversity, ecology, and behavior of birds. Lab stresses field identification of birds.

Note: Credit may not be earned in both BIOL 514 and BIOL 614.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOL 515. Environmental Physiology 3 Units

Term Typically Offered: Occasionally Offered

Prerequisite(s): BIOL 240, BIOL 242 and BIOL 244 (or equivalent); or permission of department.

Description: Study of the physiological, morphological, behavioral and biochemical responses by eukaryotic organisms (primarily animals) to major physical and chemical factors of their environment.

Note: Credit may not be earned in both BIOL 515 and BIOL 615.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOL 519. Ichthyology 3 Units

Prerequisite(s): BIOL 363.

Fee: An additional \$40.00 is charged for this course.

Description: Introduction to anatomy, physiology, ecology, distribution, economic importance, and classification of major groups and representative local species of fish.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOL 522. Aquatic Ecology 4 Units

Prerequisite(s): BIOL 363.

Description: Ecological processes in aquatic environments with primary emphasis on lakes and reservoirs.

Note: Credit may not be earned in both BIOL 522 and BIOL 622.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOL 540. Metabolic Biochemistry 3 Units

Term Typically Offered: Occasionally Offered

Prerequisite(s): BIOL 329 and CHEM 342.

Description: An advanced study of metabolic pathways including synthesis of macromolecules (proteins, nucleic acids, lipids, carbohydrates), mechanisms of metabolic control and utilization of metabolic intermediates.

Note: Credit may not be earned in both BIOL 540 and BIOL 640.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- BIOL 541. Medicinal Plant Biochemistry - CUE, WR** 3 Units
Term Typically Offered: Occasionally Offered
Prerequisite(s): BIOL 540, CHEM 445, CHEM 545, or BIOC 545.
Fee: An additional \$40.00 is charged for this course.
Description: A detailed study of biosynthesis and bioactivity of specialized plant metabolites (secondary metabolites). Topics will include aspects of general plant metabolism as well as specialized metabolism pathways (alkaloids, terpenes and phenolics) and will include a survey of approaches as they relate to discovery of bioactive plant metabolites and a review of known plant metabolites used to treat human diseases/disorders.
Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).
Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BIOL 542. Gene Structure and Function - WR** 3 Units
Prerequisite(s): BIOL 330 or equivalent, or consent of instructor.
Description: Advanced topics in genetics of prokaryotes and eukaryotes, including chromosome structure and function, and gene regulation.
Note: Approved for the Arts & Sciences upper-level requirement in written communication (WR).
Note: Credit may not be earned for both BIOL 542 and BIOL 642.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BIOL 548. Experimental Design and Analysis - WR, CUE** 3 Units
Prerequisite(s): BIOL 350 or BIOL 651.
Description: Move principles of sound experimental design, analysis and presentation from recognition to active vocabulary. Students completing the course can serve as statistical consultants for moderately complex statistical designs.
Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).
Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BIOL 552. Evolutionary Medicine** 3 Units
Term Typically Offered: Occasionally Offered
Prerequisite(s): BIOL 240, BIOL 242, BIOL 372, or BIOL 409, or equivalents.
Description: In-depth analyses at the interface of evolutionary biology and the health sciences using readings from the primary literature. Format involves lectures, discussion, and a library-based research project.
Note: Credit may not be earned in both BIOL 552 and BIOL 652.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BIOL 553. Chronic Disease Biology** 3 Units
Term Typically Offered: Occasionally Offered
Prerequisite(s): BIOL 329 and BIOL 372.
Description: The course will cover the biological bases of chronic disease, with an emphasis on the mechanisms of disease causation and the evolution of these mechanisms.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BIOL 555. Microbial Ecology** 3 Units
Prerequisite(s): BIOL 357, or BIOL 485, or consent of instructor.
Description: Interrelationships between microorganisms and their environments.
Note: Credit may not be earned in both BIOL 555 and BIOL 655.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BIOL 560. Ecology of Urban and Suburban Landscapes** 3 Units
Term Typically Offered: Spring Odd Years
Prerequisite(s): BIOL 363 or GEOS 365.
Description: Effects of cities and suburban sprawl on air and water chemistry, microclimate, fragmented landscapes, and responses of biotic and human communities to these conditions that degrade or promote urban resilience, adaptation and sustainability.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BIOL 562. Ecosystems Ecology** 3 Units
Term Typically Offered: Spring Even Years
Prerequisite(s): BIOL 363; an advanced ecology course recommended.
Description: The transformations of matter and energy that link plant, animal and geochemical cycles. Implications for resource management also discussed.
Note: Credit may not be earned in both BIOL 562 and BIOL 662.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BIOL 563. Population and Community Ecology** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): BIOL 363.
Description: Introduction to population dynamics and species interactions in aquatic and terrestrial ecosystems. Review of underlying ecological theory and its applications for conserving biodiversity.
Note: Credit may not be earned in both BIOL 563 and BIOL 663.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

<p>BIOL 567. Conservation Biology 3 Units Term Typically Offered: Spring Only Prerequisite(s): BIOL 363 or permission of instructor. Description: This course provides an overview of theory and practice of conservation. Topics include biodiversity, habitat loss, the effects of habitat changes on populations, and the design and establishment of reserves. Among other things, students will learn: 1) key terms and concepts related to biodiversity, 2) significant threats to biodiversity and efforts to mitigate them, and 3) practical and socioeconomic elements of conservation biology. Note: Credit may not be earned for both BIOL 567 and BIOL 667.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>BIOL 594. Experimental Botany for Teachers 3 Units Prerequisite(s): BIOL 240, BIOL 242, BIOL 244, BIOL 329, BIOL 330, BIOL 331 or equivalent, or consent of instructor. Description: This course is designed for pre-service and classroom teachers of the life sciences from elementary through high school. To increase teachers' abilities to teach sciences, especially botany, using inquiry-oriented strategies. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>BIOL 569. Evolution 3 Units Prerequisite(s): BIOL 363. Description: Offers a comprehensive overview of evolution and provides students with a review of issues that make up this critical discipline. Note: Credit may not be earned in both BIOL 569 and BIOL 669.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>BIOL 600. Graduate Seminar I 1 Unit Prerequisite(s): Graduate status. Description: Covers professional development for graduate students in all fields of biology. Topics include the following: time management, how to collect and record data, data management, communication with advisor and advisory committee, finding a research question, grant proposals and funding, scientific ethics, use of graphics, writing and reviewing scientific papers, and careers and interviews. Each student will write a short grant proposal, review a scientific paper, and make a short oral presentation. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>BIOL 571. Selected Topics 3 Units Term Typically Offered: Occasionally Offered Description: Contents to be indicated in schedule of courses. Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>BIOL 601. Graduate Seminar II 1 Unit Prerequisite(s): Graduate status. Description: Focuses on developing presentation skills for graduate students in all fields of biology. We will also discuss how to evaluate presentations. Each student will make a presentation on research in their area of interest and will respond to audience questions. Students will provide written feedback to each other on their presentations. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>BIOL 572. Selected Topics-Laboratory 1-4 Units Description: Contents to be indicated in schedule of courses. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>BIOL 610. Advanced Behavioral Ecology 4 Units Prerequisite(s): BIOL 363. Description: Evolution of behavioral adaptations for survival and reproduction; topics will include foraging, aggression, mate choice, mating strategies, and sociality. Note: Credit may not be earned for both BIOL 510 and BIOL 610.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>BIOL 591. Biology for Teachers I 3 Units Term Typically Offered: Occasionally Offered Prerequisite(s): Experience in teaching biology or biological principles in elementary, middle or secondary school. Description: Teaching pre-college biology with emphasis on curriculum content, laboratory procedures, and process skills. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>BIOL 611. Advanced Behavioral Endocrinology 4 Units Prerequisite(s): Graduate standing. Description: Interactions of hormones, brain and behavior. Lecture concurrent with BIOL 511; more advanced material through requirement of independent study or research project. Note: Credit may not be earned in both BIOL 511 and BIOL 611.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>BIOL 593. Experimental Cell Biology for Teachers 3 Units Prerequisite(s): BIOL 240, BIOL 242, BIOL 244, BIOL 329, BIOL 330, and BIOL 331 or equivalent; or consent of instructor. Description: Lecture and lab activities focused on inquiry-based investigations at the cellular level suitable for secondary school classroom. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>

- BIOL 612. Advanced Endocrinology** 4 Units
Prerequisite(s): BIOL 465.
Description: Chemical regulation in animals, primarily mammals. Lectures concurrent with BIOL 512; more advanced material through requirement of independent study or research project.
Note: Credit may not be earned in both BIOL 512 and BIOL 612.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BIOL 614. Advanced Ornithology** 4 Units
Prerequisite(s): Consent of instructor.
Description: Evolution, morphology, diversity, ecology and behavior of birds. Lab stresses field identification of birds. Lecture concurrent with BIOL 514; more advanced material through requirement of independent study or research project.
Note: Credit may not be earned in both BIOL 514 and BIOL 614.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BIOL 615. Advanced Environmental Physiology** 4 Units
Prerequisite(s): BIOL 240, BIOL 242 and BIOL 244 (or equivalent); or permission of department.
Description: Study of the physiological, morphological, behavioral and biochemical responses by eukaryotic organisms (primarily animals) to major physical and chemical factors of their environment. Lectures concurrent with BIOL 515; BIOL 615 has additional requirements (because it is a 4-credit hour class) through the completion of an independent study or research project.
Note: Credit may not be earned in both BIOL 515 and BIOL 615.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BIOL 619. Environmental Entomology** 3 Units
Prerequisite(s): BIOL 382, or consent of instructor.
Description: Advanced topics in insect systematics, ecology, and applied entomology.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BIOL 622. Advanced Aquatic Ecology** 5 Units
Prerequisite(s): BIOL 363.
Description: Ecological processes in aquatic environments with primary emphasis on lakes and reservoirs. Lectures concurrent with BIOL 522; more advanced material through requirement of independent study or research project.
Note: Credit may not be earned in both BIOL 522 and BIOL 622.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BIOL 633. Advanced Physiological Plant Ecology** 5 Units
Prerequisite(s): BIOL 523 and BIOL 563.
Description: A study of chemical, physical, and biological processes involved in plant ecology.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BIOL 635. Advanced Chemical Ecology** 4 Units
Term Typically Offered: Spring Only
Description: This course will explore the remarkable world of chemical ecology. Where ecological outcomes between or among individuals are influenced or determined directly or indirectly by chemicals produced by individuals. A key focus will be the chemical ecology of plants. Though we will also explore chemical ecology in animals as well. Considerable ecological information is derived from chemicals produced by organisms both to other members of the same species or to a different species, and affect both natural and sexual selection. We will use an interactive discussion/seminar-style to interrogate the primary literature for current knowledge of how chemical cues influence a diverse array of ecological interactions. From the African savannas to galling insects in our own backyard. Students will have flexibility to choose their own research topics to pursue focused critical thinking and hypothesis generation. Discussions will span a range of disciplines including genetics, molecular biology, biochemistry, natural products, ecology, and evolution. Graduate students will be required to write a publication-quality review paper or meta analysis on a topic related to chemical ecology.
Note: Students may not receive credit for both BIOL 435 and BIOL 635.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BIOL 640. Advanced Metabolic Biochemistry** 4 Units
Prerequisite(s): BIOL 329 and CHEM 342.
Description: An advanced study of methods of metabolic pathways including synthesis of macromolecules (proteins, nucleic acids, lipids, carbohydrates), mechanisms of metabolic control and utilization of metabolic intermediates.
Note: Credit may not be earned in both BIOL 540 and BIOL 640.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BIOL 641. Advanced Medicinal Plant Biochemistry** 4 Units
Prerequisite(s): BIOL 640 or consent of instructor.
Fee: An additional \$40.00 is charged for this course.
Description: An advanced detailed study of biosynthesis and bioactivity of specialized plant metabolites (secondary metabolites). Topics will include aspects of general plant metabolism as well as specialized metabolism pathways (alkaloids, terpenes, and phenolics) and will include a survey of approaches as they relate to discovery of bioactive plant metabolites and a review of known plant metabolites used to treat human diseases/disorders.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- BIOL 642. Advanced Gene Structure and Function** 4 Units
Prerequisite(s): BIOL 330 or equivalent.
Description: Advanced topics in genetics of prokaryotes and eukaryotes, including chromosome structure and function, and gene regulation. Lectures concurrent with BIOL 542; more advanced material through requirement of independent study or research project.
Note: Credit may not be earned in both BIOL 542 and BIOL 642.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOL 643. Advanced Developmental Biology 4 Units

Description: Developmental biology is the study of how multicellular organisms process from a single cell to their adult forms. This simple statement, however, belies the incredible complexity of the process, which involves the coordinated actions and interactions of tens of thousands of genes, millions of molecular signals, and, in humans and other large mammals, tens of trillions of cells. This course highlights critical themes in animal development, including cell division; cell differentiation; and morphogenesis, and covers specific topics such as developmental anatomy; embryo development; axis formation, organ, tissue, and limb development; and cell-cell communication. The course also briefly addresses the similarities and differences in developmental strategies among animals and other multicellular organisms.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOL 644. Global Change Ecology 4 Units

Description: Human causes of global-scale changes in climate, air and water resources, and biodiversity, and impacts on people; approaches to addressing these problems that promote sustainable societies. Graduate students will attend lectures with undergraduates taking BIOL 440 but will be expected to attend weekly discussions of primary literature and course material. In addition, graduate students will be expected to write a literature review on a topic relevant to the course subject matter.

Note: Cross-listed with BIOL 440.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOL 648. Advanced Experimental Design and Analysis 4 Units

Prerequisite(s): BIOL 350 or BIOL 651 or permission of instructor.

Description: Move principles of sound experimental design, analysis and presentation from recognition to active vocabulary. Students completing the course can serve as statistical consultants for moderately complex statistical designs.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOL 650. Advanced Biostatistics 4 Units

Prerequisite(s): MATH 180 or MATH 205; an introductory course in statistics; or consent of instructor.

Description: Application of statistical methods commonly used in life sciences, with emphasis on interpretation of experimental data.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOL 651. Advanced Biostatistics II 3 Units

Prerequisite(s): BIOL 650.

Description: Advanced biostatistics involves interpretation of experimental data using statistical software. Topics include experimental design and ANOVA, ANCOVA, MANOVA, logistic analysis, logistic regression, and log linear models.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOL 652. Advanced Evolutionary Medicine 4 Units

Description: In-depth analyses at the interface of evolutionary biology and the health sciences using readings from the primary literature. Format involves lectures, discussion, and a library-based research project. Lecture concurrent with BIOL 552; more advanced material through requirement of independent study or research project. BIOL 552 does not carry graduate credit.

Note: Credit may not be earned in both BIOL 552 and BIOL 652.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOL 653. Advanced Chronic Disease Biology 4 Units

Description: The course will cover the biological bases of chronic disease, with an emphasis on the mechanisms of disease causation and the evolution of these mechanisms.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOL 655. Advanced Microbial Ecology 4 Units

Prerequisite(s): BIOL 357 or BIOL 485 or consent of instructor.

Description: Interrelationships between microorganisms and their environments. Lecture concurrent with BIOL 555; more advanced material through requirement of independent study or research project for students enrolling in BIOL 655.

Note: Credit may not be earned in both BIOL 555 and BIOL 655.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOL 660. Advanced Ecology of Urban and Suburban Landscapes 4 Units

Description: Effects of cities and suburban sprawl on air and water chemistry, microclimate, fragmented landscapes, and responses of biotic and human communities to these conditions that degrade or promote urban resilience, adaptation and sustainability.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOL 662. Advanced Ecosystems Ecology 4 Units

Description: The transformations of matter and energy that link plant, animal and geochemical cycles. Lectures concurrent with BIOL 562; more advanced material through requirement of independent study or research for students enrolling in BIOL 662.

Note: Credit may not be earned in both BIOL 562 and BIOL 662.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOL 663. Advanced Population and Community Ecology 4 Units

Description: Introduction to population dynamics and species interactions in aquatic and terrestrial ecosystems. Review of underlying ecological theory and its applications for conserving biodiversity. Lecture concurrent with BIOL 563; more advanced material through requirement of independent study or research project.

Note: Credit may not be earned in both BIOL 563 and BIOL 663.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOL 664. Research Methods in Ecology 3 Units

Prerequisite(s): BIOL 401 and BIOL 402.

Description: Introduction to experimental design, data collection and quantitative analyses. Field and laboratory research, statistical tools and critical evaluation data.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOL 667. Advanced Conservation Biology 4 Units

Prerequisite(s): BIOL 363 or permission of instructor.

Description: This course provides an overview of the theory and practice of biological conservation. Topics include biodiversity, habitat loss, the effects of habitat changes on populations, and the design and establishment of reserves. Among other things, students will learn: 1) key terms and concepts related to biodiversity, 2) significant threats to biodiversity and efforts to mitigate them, 3) practical and socioeconomic elements of conservation biology.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOL 668. Molecular Biology 3-4 Units

Term Typically Offered: Spring Only

Prerequisite(s): Student must be registered in the graduate school.

Description: Students are expected to have a basic understanding of molecular biology principles and protein structure. Best preparation for succeeding in the course is previous course in biochemistry and experience with reading scientific literature. Permission from the Course Director is needed for students not meeting these prerequisites. This course examines the fundamental principles of molecular biology as they apply to mechanisms controlling gene expression. Topics include: transcriptional and post-transcriptional regulation of gene expression; RNA and miRNA biology; and protein synthesis and regulation. An emphasis will be on student-directed learning requiring completion of pre-class reading, and in-class discussion of current literature.

Note: Crosslisted with BIOC 668.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOL 669. Advanced Evolution 4 Units

Prerequisite(s): BIOL 363.

Description: Offers a comprehensive overview of evolution and provides students with a review of issues that make up this critical discipline. Lecture concurrent with BIOL 569; more advanced material through requirement of independent study or research project.

Note: Credit may not be earned in both BIOL 569 and BIOL 669.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOL 671. Special Topics 4 Units

Description: Topics to be indicated in schedule of courses.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOL 672. Selected Topics-Laboratory 1-4 Units

Description: Contents to be indicated in the schedule of courses.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOL 673. Experimental Design and Analysis 3 Units

Prerequisite(s): BIOL 651 or an equivalent.

Description: Discussion and analysis of practical issues arising in biology research, including interpretation of literature and applied exercises involving experimental design, analysis, and presentation.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOL 682. Advanced Entomology 4 Units

Description: Examination of morphology, physiology, behavior, evolution and ecology of the major groups of insects. A collection of common insect families is required. The laboratory will include observations on live and preserved animals and possible field trips. Students will learn to: 1) use terms and concepts that describe the diversity of insects, 2) compare and contrast major insect groups with respect to structure and function, and 3) collect and prepare museum-quality specimens for scientific study. A project involving the student's interest in a particular group of insects and formal paper are required.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOL 688. Evolution of Disease Seminar 1 Unit

Description: Students will be exposed to current research in Disease Evolution through discussion of papers, making presentations, and attending seminars by faculty members, students, and visiting speakers.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOL 689. Seminar **1 Unit**
Grading Basis: Pass/Fail
Description: Reports on personal research and on current literature, with a critique of the research and of the presentation. Attendance, but not course registration, is required of all graduate biology majors during each semester of residence.
Note: Only 2 hours of credit may be accumulated.
Note: Graded on pass-fail basis.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOL 690. Thesis Research **1-6 Units**
Grading Basis: Pass/Fail
Prerequisite(s): Consent of major professor.
Description: Research on MS thesis project. Grade shall be deferred by the major professor until evaluation of the thesis by the student's committee.
Note: Graded on pass-fail basis by the examining committee.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOL 691. Independent Research **1-6 Units**
Prerequisite(s): Consent of instructor.
Description: Independent field or laboratory research on a problem not related to thesis or dissertation.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOL 692. Independent Study **1-6 Units**
Prerequisite(s): Consent of instructor.
Description: Independent library research on a problem not related to the thesis or dissertation.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

BIOL 700. Dissertation Research **1-9 Units**
Grading Basis: Pass/Fail
Prerequisite(s): Consent of major professor.
Description: Research on dissertation project. Grade shall be deferred by the major professor until evaluation of the dissertation by the student's committee.
Note: Graded on a pass-fail basis by the examining committee until evaluation of the dissertation by the student's committee.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Business Analytics (MSBA)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

MSBA 600. Master of Science in Business Analytics **0 Units**
Description: Master of Science in Business Analytics - billing course
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSBA 605. Python for Analytics **3 Units**
Term Typically Offered: Fall, Spring
Prerequisite(s): Admission to MSBA degree program.
Description: This course introduces essential general programming concepts and techniques to a data analytics audience with no prior programming experience. Students will learn the aspects of programming that can support business analytics with hands on programming including accessing data, creating informative data graphics, writing functions, debugging, and organizing code. Examples are drawn from the problems and programming patterns often encountered in data analysis. It will use a common analytics programming language such as Python.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSBA 610. Data Visualization with Power BI Term Typically Offered: Fall, Spring Prerequisite(s): Admission to MSBA degree program. Description: Students will become well versed in ingesting data sources and selecting the appropriate visualization to unearth the underlying story within large data sets. Students will be utilizing Data Analysis Expressions, DAX, to create various formulas to help in analyzing multiple data sources. By the end of the class, students will build a PowerBI model to be presented to the class in a professional scenario. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	1.5 Units	MSBA 630. Modern Data Management Term Typically Offered: Fall, Spring Prerequisite(s): Admission to MSBA degree program. Description: This course provides an introduction to issues, principles, and technologies of modeling and using organizational data. It covers concepts and skills for developing, accessing, and administering relational databases, and formulating and executing complex queries. It also discusses the role of data management technologies and practices in an organizational setting and how such technologies and practices may impact business strategy, business processes, and organizational structure. This course has a strong hands-on component. The course will make extensive use of a leading relational database management software and structured query language (SQL). For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	3 Units
MSBA 615. R for Analytics Term Typically Offered: Fall, Spring Prerequisite(s): Admission to MSBA degree program. Description: This course provides an intensive, hands-on introduction to the R programming language. The student will learn the fundamental skills required to acquire, manage, transform, manipulate, and visualize data in a computing environment that fosters reproducibility. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	1.5 Units	MSBA 635. Predictive Analytics Term Typically Offered: Fall, Spring Description: This course builds on the MSBA 620 course by introducing more advanced topics in analytics. This course challenges and teaches students how to use powerful statistical tools (e.g., SmartPLS, SAS, and SPAA) to handle data that come in a variety of forms and sizes in more complex, less structured business situations. Students will participate in extensive hands-on work solving realistic business problems. This course may guide students with handling advanced regression analysis that deals with real-life models and interaction variables, time series analysis, and topics such as PLS path modeling. After taking this course, students should: 1) Approach business problems data analytically; 2) think systematically whether and how data can help make better informed decisions; 3) be able to interact competently with business analytical tools; and 4) have had hands-on experience mining data. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	3 Units
MSBA 620. Statistical Foundations of Business Analytics Term Typically Offered: Fall, Spring Description: This course provides comprehensive understanding of analytical fundamentals. Students will learn business problems, the types of data required to address problems, and solution estimation. Students will learn how to setup and test the efficacy of a business strategy by setting up experiments, analyzing data, and making business decisions. The course will provide a basic understanding of some advanced analytical techniques. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	3 Units	MSBA 640. Decision Models Term Typically Offered: Spring Only Description: This course trains students to turn real-world problems into mathematical and spreadsheet models and to use such models to make better managerial decisions. This is a hands-on course that focuses on modeling business problems, turning them into spreadsheet models and using tools like Solver to obtain solutions to these managerial problems. The course focuses on two classes of models, optimization and simulation. The application areas are diverse and they originate from problems in finance, marketing and operations. We cover problems such as how to optimize a supply chain and how to price products when faced with demand uncertainty. Topics covered include linear and linear integer programming, nonlinear programming and evolutionary solver, simulation and optimization, multi-period linear programming and Monte Carlo simulation. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	3 Units
MSBA 625. Storytelling with Data Term Typically Offered: Fall Only Prerequisite(s): Admission to MSBA degree program. Description: This course is a data visualization and business presentations course specifically designed for professionals in the field of business analytics. Throughout the semester, you will develop your ability to organize, visualize, and present data driven messages that are professional, clear, concise, and persuasive. By the end of the course, you will enhance your ability to communicate with and about data in multiple business and professional contexts: formal individual presentations, team-based presentations, and informal one-on-one and small group interactions. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	1.5 Units		

MSBA 645. Applied Machine Learning**3 Units****Term Typically Offered:** Fall, Spring

Description: Data mining draws on statistics, artificial intelligence and machine learning to discover novel, interesting and actionable relationships and patterns in large and complex data sets. This course will introduce the student to the fundamentals of data mining, including methodology, data preparation, commonly used predictive models, supervised and unsupervised learning, model comparison and evaluation, and mining of unstructured data such as text. While the emphasis is on solving realistic business problems, the course will also provide a brief background for the various models and techniques introduced in the course. The course follows a learn-by-doing approach in which the students will complete assignments using real world data sets. A leading data-mining tool such as SAS Enterprise Miner will be used extensively in this course.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSBA 650. Advanced Analytical Tools**3 Units****Term Typically Offered:** Fall, Spring

Description: The course presents advance business analytics using R. The concepts learned in this class should help you identify opportunities in which business analytics can be used to improve performance and support important decisions. It will teach you important tools that can be used to transform data into high-impact business decisions. Lastly, it should make you alert to the ways that analytics can be used, and misused, within an organization.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSBA 655. Special Topics: Marketing Analytics**1.5 Units****Term Typically Offered:** Spring Only

Description: The use and analysis of data to guide marketing decisions is the focus of this course. The course will focus marketing metrics, their estimation, and use.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSBA 680. Special Topics in Business Analytics**1.5-3 Units****Term Typically Offered:** Occasionally Offered**Prerequisite(s):** Admitted to MSBA & achieved elective status.

Description: An advanced study of one or more selected topics or issues related to the study of business. Topics or issues could be from a single business discipline such as management or from a combination of business disciplines, such as accountancy and finance.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSBA 685. Analytics Internship**1 Unit****Term Typically Offered:** Spring Only

Description: The academic objective of the internship program in the Master of Science in Business Analytics program is to provide enrolled students with an opportunity for hands-on business experience where they can apply classroom knowledge in a real-world setting and bring the experiences gained during their internship employment into the classroom. The internship is expected to nominally last for 11 months.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSBA 690. Analytics Capstone**3 Units****Term Typically Offered:** Spring Only

Description: Each student assists (as a team member) an organization in the Louisville area to improve some aspects of its business analytics operations. The students develop project in conjunction with key business executive and work to investigate and then create recommended courses of action.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Chemical Engineering (CHE)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

- CHE 502. Biochemical Engineering** 3 Units
Term Typically Offered: Occasionally Offered
Prerequisite(s): CHE 433 (or concurrent) and CHE 441 (or concurrent).
Description: Engineering principles related to operations involving biological processes, e.g., fermentation. Basic microbiology and biochemistry; biochemical reaction mechanisms, kinetics, rate processes, and separation techniques. Applications to foods, pharmaceuticals, and waste treatment, including system design.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 503. Fundamentals of Engineering Examination Review** 2 Units
Grading Basis: Pass/Fail
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): 4th-year standing.
Description: Review of topics covered on eight-hour NCEES Fundamentals of Engineering examination. Not to be counted towards meeting the requirements for a degree.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 509. Environmental Processes and Systems** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): CEE 309 or CHE 401.
Description: This course examines scientific and engineering aspects of environmental problems, stressing important issues, existing technical solutions and new solutions. The course presents engineering approaches to natural systems and describes techniques to treat/eliminate environmental problems.
Note: Cross-listed with CEE 509.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 520. Modeling and Transport Phenomena** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): CHE 433 and CHE 441.
Description: An introduction to the interrelationship of momentum, heat and mass transport focusing on the development of the equations of change through the use of shell balances and their relation to earlier courses in fluids, heat and mass transfer. Some focus will be placed on this using material in the modeling of basic chemical engineering systems.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 532. Advanced Material Science** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): 90 or more credit hours.
Description: Advanced study of materials science. Topics may include the electronic and atomic structure of materials; properties characterized by electron motion; properties associated with atomic motion; applications and synthesis of fundamentals to several real problems; science of thin films; or other topics selected by the instructor.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 533. Chemical Engineering Safety and Health** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): 90 or more credit hours.
Description: Overview of regulations and industrial practices, emphasizing chemical hazards, including: industrial hygiene, toxicology, controls and hazards analysis. Safety considerations in process design.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 534. Industrial Waste Management** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): 90 or more credit hours.
Description: A survey of regulations, generation, control and management of industrial wastes and environmental hazards: airborne, aqueous, solids and hazardous wastes. Course includes guest speakers, site visits and a term project. Design of waste treatment facilities.
Note: Cross-listed with CEE 534.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 535. Pollution Prevention** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): 90 or more credit hours.
Description: Multimedia pollution prevention and waste minimization of hazardous and non-hazardous wastes and emissions: toxics use reduction; source reduction; reuse, reclamation and recycling; product life-cycle analysis; economic evaluation; assessments; planning and management.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 550. Kinetics of Polymer Reactions** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): CHE 441 and CHEM 341.
Description: Kinetic expressions are developed for several polymer reaction mechanisms including chain, step, ionic and emulsion reactions; copolymerization; polymer reaction engineering; molecular weight distributions; structural considerations; design considerations.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 551. Polymer Science** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): CHEM 341.
Description: Introduction to polymer science and engineering. Polymer synthesis, kinetics, structure, and properties; commercial polymers; polymer processing; equipment design.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 562. Process Control Laboratory** 1 Unit
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): CHE 461.
Description: A laboratory course demonstrating computer simulation and the characteristics of sensing and control devices and their interactions when incorporated into process control systems.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- CHE 572. Plant Process and Project Design - CUE** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): CHE 471.
Description: The design and economic evaluation of a chemical plant, from process definition and flow sheet construction to a cash position diagram and measures of profitability.
Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status., CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 574. Techniques of Research** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): 90 or more credit hours.
Description: The design, analysis, and interpretation of experimental results to obtain the desired information within reasonable constraints of time and expense. Testing predictions and making reliable decisions utilizing graphical, numerical, and statistical techniques.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 581. Chemical Vapor Deposition and Processing** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): CHE 253, CHE 441 and CHE 435 or the consent of the instructor.
Description: Theoretical and experimental concepts involved with chemical vapor deposition and processing of advanced and nanomaterials.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 593. Independent Study in Chemical Engineering** 1-6 Units
Term Typically Offered: Fall, Spring, Summer
Description: Independent research conducted with the approval and supervision of a faculty member.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 594. Special Topics in Chemical Engineering** 3 Units
Term Typically Offered: Fall, Spring, Summer
Description: An examination of one or more specific areas of Chemical Engineering. Details announced each semester.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 595. Master of Engineering Seminar in Chemical Engineering** 1 Unit
Grading Basis: Pass/Fail
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Fifth-year standing.
Description: Presentation and/or discussion of topics of current interest. This course is available to students enrolled in the professional school, division of higher studies or the Graduate School.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 602. Graduate Internship in Chemical Engineering** 2 Units
Grading Basis: Pass/Fail
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Admission to Graduate Study, Permission of Department Chair, and Permission of Director of Career Services.
Description: Supervised professional experience in industry at the graduate level. This course provides the structure and focus for the graduate intern field assignment to ensure that the assignment is appropriate and consistent with the intern's graduate course of study and professional development. May be repeated for credit.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 603. Tissue Engineering** 3 Units
Prerequisite(s): Graduate/Professional School standing and BIOL 329, or consent of instructor.
Description: This is an advanced elective course to satisfy the requirements for a graduate level degree in chemical engineering. This course presents an introduction to tissue engineering with an emphasis on the role of biomaterials and bioreactor design.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 610. Advanced Thermodynamics** 3 Units
Description: A comprehensive study of physical and chemical equilibrium, with special emphasis on nonideality.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 612. Nonequilibrium Thermodynamics** 3 Units
Description: The extension of classical thermodynamics to include systems in which transport processes are taking place. Examples from the areas of engineering, chemistry, and biological systems are examined.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- CHE 618. Computational Chemistry and Molecular Simulation** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): Senior or Graduate Standing in Engineering.
Description: Theory and applications of computational chemistry and molecular simulations. Concepts in statistical mechanics and statistical thermodynamics. Connection of electronic and molecular structure to thermodynamic and transport properties. Prediction of chemical and material properties using modern scientific software.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 620. Transport Phenomena I** 3 Units
Description: An integrated study of momentum, thermal energy, and mass transport by molecular and convective mechanisms, with and without generation, for steady-state and unsteady-state conditions, in laminar, boundary-layer, or turbulent flow. Molecular theories of transport properties.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 621. Transport Phenomena II** 3 Units
Prerequisite(s): CHE 620.
Description: Consideration of advanced theories and applications of transport properties as related to heat, mass, and momentum transfer.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 624. Introduction to Rheology** 3 Units
Description: Principles and applications of the rheology of polymeric materials. Kinematics of shear and extensional flows. Properties of polymer melts; experimental rheometry. Property predictions based on a variety of generalized Newtonian, linear viscoelastic, co-rotational, and co-deformational models.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 630. Computational Fluid Dynamics** 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): Senior or Graduate Standing in Engineering.
Description: Simulate and visualize fluid flow using applied computational fluid dynamics. Mesh generation, quality check, and resolution. Solver convergence and stability for steady state and unsteady state problems; single and multi-phase systems; heat transfer; laminar and turbulent flows. Post processing and flow visualization.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 631. Homogeneous Fluid Dynamics** 3 Units
Description: Advanced study of momentum transfer in homogeneous fluids. Conservation of matter, momentum, and mechanical energy; ideal flow, creeping flow, laminar flow, turbulent flow, and boundary layer approximations; non-Newtonian fluids.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 632. Heterogeneous Flow** 3 Units
Description: Analysis of two-phase flows of gases, liquids, and solids. Single-particle and multiparticle systems, fluidized beds, bubble beds, drop beds; slug flow, annular flow.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 633. Heat Transfer** 3 Units
Description: Advanced problems in the fields of conductive and convective heat transfer.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 637. Advanced Stagewise Processes** 3 Units
Description: Methods of calculations for complex binary and multicomponent mixtures. Consideration is also given to the design of equipment for these separations.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 638. Advanced Absorption** 3 Units
Description: An examination of absorption as a portion of general mass transfer phenomena. Theoretical and generalized relationships are applied to industrial problems of design.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 640. Chemical Kinetics and Catalysis** 3 Units
Description: A study of catalytic reaction mechanisms and solid catalysts with applications to cracking, reforming, hydrotreatment of fuels, synthesis gas conversion and partial oxidation reactions. Design of catalysts and catalytic reactors for specific applications.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 641. Advanced Reactor Design** 3 Units
Description: Reactor design and performance with emphasis on non-ideal behavior. Includes study of non-isothermal, non-ideal flow homogeneous and heterogeneous reactors. Introduction to heterogeneous catalysis and biochemical reactors. Extensive application of digital computers.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 650. Membrane Separations** 3 Units
Description: Qualitative and quantitative description of membrane separation processes including reverse osmosis and ultrafiltration; membrane synthesis; industrial applications including wastewater treatment, continuous systems, liquid membranes and gas separations. Design of membranes, membrane modules and membrane separation processes.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- CHE 653. Polymer Processing** 3 Units
Description: Introduction to polymer melt rheology. Simple model flows. Analysis, modeling, design and control of polymer melt processes such as extrusion, calendaring, fiber spinning, film blowing, injection molding, and blow molding.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 654. Engineering Properties of Polymers** 3 Units
Description: The relationships between molecular structure, measurable properties, and design requirements for polymeric materials. Molecular topology; morphology; rheology; mechanical, thermal, electrical, optical, and chemical properties; design and economic considerations in engineering applications.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 655. Processing for Additive Manufacturing** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): Graduate Standing.
Description: This course focuses on the principal, commercially-realized AM processes and on the processing and materials science underlying them. Topics include the physics and chemistry of photopolymerization, material extrusion, polymer laser sintering and metal laser melting and the structure and properties of the materials produced by these processes.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 660. Optimization in Control Systems** 3 Units
Description: Theory of optimization will be studied and applied to the solution of control problems. Both steady-state and dynamic optimization topics will be considered.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 661. Control of Dynamic Processes** 3 Units
Description: A combined laboratory and seminar course involving advanced process-control experiments and simulation procedures with the necessary concomitant discussion.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 662. Advanced Process Control** 3 Units
Description: Advanced control system design and implementation; feed-forward, cascade, adaptive, multivariable, and constraint control systems; computer process control.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 663. Distillation Dynamics and Control** 3 Units
Description: Multicomponent calculations and design of distillation units. Automatic control of these units, sensitivity analysis in control strategy, and dynamic mathematical modeling and simulation of the columns and accessories, including design considerations.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 671. Bioseparation** 3 Units
Prerequisite(s): ENGR 205 or Graduate/Professional school standing or consent of instructor.
Description: This course introduces the basic concept, theory, and applications of bioseparations.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 686. Chemical Engineering Analysis** 3 Units
Description: Mathematical modeling of chemical engineering phenomena leading to total and partial differential equations requiring solution by use of series, transforms, and digital computer techniques. Applications to design and analysis of chemical engineering processes.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 690. Master of Science Thesis in Chemical Engineering** 1-6 Units
Description: Experimental and/or theoretical research to be presented in thesis for degree requirement.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 693. Advanced Research in Chemical Engineering** 1-15 Units
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 694. Special Topics in Chemical Engineering** 1-6 Units
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 695. Chemical Engineering Seminar** 1 Unit
Grading Basis: Pass/Fail
Prerequisite(s): Graduate standing.
Description: Presentation and/or discussion of topics of current interest.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHE 696. Independent Study in Chemical Engineering** 1-6 Units
Description: Independent research conducted with the approval and supervision of a faculty member.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CHE 697. Master of Engineering Thesis in Chemical Engineering 1-6 Units**Prerequisite(s):** Graduate/Professional School standing.**Description:** A candidate for the Master of Engineering degree, specializing in the field of Chemical Engineering, is required to perform a study, design, or investigation under the direction of a faculty member. A written dissertation is required to be presented and defended orally and submitted to the faculty for approval. This course must be repeated for a minimum total of 6 semester hour credits to satisfy minimum MEng requirements.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**CHE 698. Engineering Project Fundamentals I 3 Units****Prerequisite(s):** Graduate/Professional School standing.**Description:** This is the first of a two course sequence to satisfy the project requirement for the Master of Engineering degree (non-thesis option). This course sequence presents the fundamentals of research proposal writing including literature and background investigation, feasibility evaluation and written and oral communication.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**CHE 699. Engineering Project Fundamentals II 3 Units****Prerequisite(s):** Graduate/Professional School standing and CHE 698.**Description:** This is the second of a two course sequence to satisfy the project requirement for the Master of Engineering degree (non-thesis option). This course sequence presents the fundamentals of business plan development including literature and background investigation, feasibility evaluation and written and oral communication.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Chemistry (CHEM)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific

fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

CHEM 501. Independent Study 1-3 Units**Prerequisite(s):** Minimum GPA of 3.0 overall; minimum GPA of 3.5 in department and at least 18 semester hours credit in the department.**Description:** Independent research conducted with the approval and supervision of a faculty member.**Note:** Credit may not be applied to an advanced degree in Chemistry.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**CHEM 503. Special Topics in Chemistry 1-3 Units****Description:** An examination of one or more specified areas of Chemistry. Details announced each semester.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**CHEM 515. Inorganic Chemistry 3 Units****Term Typically Offered:** Fall Only**Prerequisite(s):** CHEM 342; concurrent enrollment in CHEM 441 or CHEM 465.**Description:** Descriptive and theoretical chemistry of the elements.**Note:** Credit may not be applied to an advanced degree in Chemistry.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**CHEM 527. Spectroscopic Identification of Organic Compounds - WR 3 Units****Term Typically Offered:** Fall Only**Prerequisite(s):** CHEM 342 and CHEM 344.**Fee:** An additional \$60.00 is charged for this course.**Description:** An introductory spectroscopy course designed to provide a realistic experience in organic structure determination using the principal methods of spectral characterization. Emphasis is placed on using mass spectrometry, ¹H and ¹³C nuclear magnetic resonance spectroscopy, and infrared spectroscopy to deduce the molecular structures of organic compounds.**Note:** Approved for the Arts and Sciences upper-level requirement in written communication (WR).For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CHEM 528. Contemporary Methods of Organic Synthesis and Analysis - CUE 2 Units**Term Typically Offered:** Spring Only**Prerequisite(s):** CHEM 342, CHEM 344, and (CHEM 425 or CHEM 527).**Fee:** An additional \$60.00 is charged for this course.**Description:** A discovery-based approach to the solution of problems encountered in organic chemical synthesis and analysis.**Note:** Credit may not be applied to an advanced degree in Chemistry.**Course Attribute(s):** CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CHEM 529. Contemporary Methods of Inorganic Synthesis and Analysis - WR 2 Units**Term Typically Offered:** Spring Only**Fee:** An additional \$60.00 is charged for this course.**Description:** Prerequisites or corequisites: CHEM 515. A discovery-based approach to the solution of problems encountered in inorganic chemical synthesis and analysis.**Note:** Credit may not be applied to an advanced degree in Chemistry.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CHEM 532. Chemistry Education for Secondary Teachers 4 Units**Prerequisite(s):** CHEM 342 In-depth examination of chemistry content for secondary teachers as aligned with national and state standards.**Description:** Inquiry-based laboratory and diverse assessment of core concepts will be developed.**Note:** Does not count toward a degree in Chemistry except by departmental permission.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CHEM 545. Biochemistry I 3 Units**Term Typically Offered:** Fall Only**Prerequisite(s):** CHEM 342.**Description:** Chemistry of amino acids, peptides, proteins, carbohydrates, nucleotides and nucleic acids; methods of analysis and laboratory synthesis; enzyme properties, kinetics, ligand binding.**Note:** Credit may not be earned in both CHEM 545 and CHEM 645, or in both CHEM 545 and CHEM 445.**Note:** Credit may not be applied toward an advanced degree in Chemistry.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CHEM 546. Biochemistry Laboratory 2 Units**Term Typically Offered:** Occasionally Offered**Prerequisite(s):** CHEM 445 or concurrent enrollment in CHEM 545.**Fee:** An additional \$60.00 is charged for this course.**Description:** Application of contemporary laboratory methods of biochemistry including uv/vis spectrophotometry, liquid chromatography centrifugation, gel electrophoresis, mass spectrometry, FTIR, and recombinant DNA techniques.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CHEM 547. Biochemistry II 3 Units**Term Typically Offered:** Occasionally Offered**Prerequisite(s):** CHEM 545.**Description:** Cellular metabolism of carbohydrates, lipids, amino acids and biomembrane phenomena; RNA, DNA, and protein synthesis.**Note:** Credit may not be earned in both CHEM 547 and CHEM 647, or in both CHEM 547 and CHEM 445.**Note:** Credit may not be applied to an advanced degree in chemistry.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CHEM 550. Group Theory and its Chemical Applications 3 Units**Term Typically Offered:** Occasionally Offered**Prerequisite(s):** CHEM 441 or CHEM 465 Elementary group theory; the use of group theory to treat symmetry; application to atomic structure, molecular structure, spectroscopy, and reaction mechanisms.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CHEM 555. Theory and Application of Computational Chemistry 3 Units**Prerequisite(s):** CHEM 441 or CHEM 465 or PHYS 300.**Description:** Theory and Application of Computational Chemistry will be a combined elective undergraduate and graduate level course. The purpose of the course is to provide students with the necessary knowledge such that they can examine chemical problems computationally and where required, use computational tools to benefit their own research. The course will emphasize practical applications of computers in chemistry, trends that define the appropriate methods for chemical studies, and elucidation of underlying theoretical methods. As the abstract nature of the field is frequently a learning barrier to many students, the course will incorporate a series of workshops to enable students to build their own computer programs and study chemical problems computationally.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CHEM 557. Bio-Organic Phenomena 3 Units**Term Typically Offered:** Spring Only**Prerequisite(s):** CHEM 342 (or equivalent).**Description:** Completion of CHEM 445, CHEM 545, or equivalent is strongly recommended. Special topics in the biological chemistry area: e.g., chemical carcinogenesis; diet and cancer, food chemistry and polypeptides; proteins; carbohydrates; enzymes; hormone chemistry.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- CHEM 591. Chemistry for Teachers I** 3 Units
Prerequisite(s): For graduate education majors; must have experience in teaching chemistry principles in elementary, middle, or secondary schools.
Description: Teaching pre-college chemistry with emphasis on curriculum content, laboratory procedures, and process skills.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 620. Optical Spectrochemical Methods of Analysis** 3 Units
Prerequisite(s): CHEM 527.
Description: Principles, instrumentation, and applications of atomic and molecular spectroscopic techniques used in the IR, VIS, and UV spectral regions.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 621. Electroanalytical Chemistry** 3 Units
Prerequisite(s): CHEM 527.
Description: Principles of modern voltammetric and potentiometric methods of chemical analysis including fundamental theory, instrumentation, and applications.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 622. Analytical Separations** 3 Units
Prerequisite(s): CHEM 527.
Description: Survey of major instrumental separation methods in chemistry and biochemistry with an emphasis on modern chromatographic techniques.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 625. Advanced Analytical Chemistry** 3 Units
Prerequisite(s): CHEM 527.
Description: A survey of theoretical and practical aspects of modern methods of analysis.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 626. Special Topics in Analytical Chemistry** 1-3 Units
Prerequisite(s): CHEM 528 and CHEM 529, or consent of instructor.
Description: Recent developments in selected areas of Analytical Chemistry.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 628. Special Topics in Synthesis and Analysis** 1 Unit
Prerequisite(s): Completion of, or coregistration in, CHEM 528, or consent of instructor.
Description: Current topics in high resolution NMR, mass spectrometry and organic synthesis.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 630. Advanced Topics in Chemical Analysis** 1 Unit
Prerequisite(s): Completion of, or co-registration in, CHEM 529, or consent of instructor.
Description: A discovery-based approach to the solution of advanced problems in chemical analysis with an emphasis on separations, electrochemistry and X-ray crystallography.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 632. Chemical Education** 3 Units
Prerequisite(s): BS, BA, or minor in Chemistry, or consent of instructor.
Description: In-depth examination of learning theories and chemistry content. Lesson plans, teaching philosophies, and research projects framed by learning theories will be developed.
Note: Does not count toward an advanced degree in Chemistry.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 645. Advanced Biochemistry I** 4 Units
Prerequisite(s): CHEM 342.
Description: Chemistry of amino acids, peptides, proteins, nucleotides and nucleic acids; methods of analysis and laboratory synthesis; enzyme properties, kinetics, ligand binding.
Note: Lectures concurrent with CHEM 545; one added lecture hour each week covers advanced topics.
Note: Credit may not be earned in both CHEM 545 and CHEM 645.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 647. Advanced Biochemistry II** 4 Units
Description: Cellular metabolism of carbohydrates, lipids, amino acids and nucleotides; biomembrane phenomena; RNA, DNA and protein synthesis. Lectures concurrent with CHEM 547; one added lecture hour each week covers advanced topics.
Note: Credit may not be earned in both CHEM 547 and CHEM 647.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 648. Systems Biochemistry: Principles and Practices** 3 Units
Prerequisite(s): CHEM 647, BIOC 645, or consent of instructor.
Description: Integration of global metabolic functions with protein and gene-level regulations. Analytical approaches to enable such integration.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 651. Independent Study** 1-3 Units
Description: Credit according to achievement; limited to 3 hours per semester
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 652. Independent Study** 1-3 Units
Description: Credit according to achievement; limited to 3 hours per semester
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- CHEM 653. Main Group Chemistry** 3 Units
Prerequisite(s): CHEM 515.
Description: Survey of the descriptive chemistry of the main group elements and topics of current interest in main group chemistry such as bonding theories, reaction mechanisms, electronic materials, and catalytic materials.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 654. Advanced Coordination Chemistry** 3 Units
Prerequisite(s): CHEM 515.
Description: Survey of structure, bonding, and reactivity of the transition metal complexes. Covers topics such as organometallic and bioinorganic chemistry, group theory, and magnetism.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 655. Special Topics in Inorganic Chemistry** 1-3 Units
Prerequisite(s): CHEM 515.
Description: Current problems in inorganic chemistry.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 656. Special Topics in Inorganic Chemistry** 1-3 Units
Prerequisite(s): CHEM 515.
Description: Current problems in inorganic chemistry.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 659. Materials Chemistry and Methods** 3 Units
Prerequisite(s): CHEM 515 or equivalent course in organic chemistry.
Description: Course content will include a range of characterization methods and properties of materials. The main properties of interest are structural properties, magnetism and charge transport. Basic principles as well as methods of investigation and characterization of these properties will be discussed.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 660. Advanced Physical Chemistry** 3 Units
Prerequisite(s): One year of physical chemistry, one semester of atomic and molecular physics.
Description: Introduction to quantum chemistry.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 661. Chemical Thermodynamics** 3 Units
Prerequisite(s): One year of physical chemistry.
Description: Advanced discussion of the principles of thermodynamics including an introduction to statistical thermodynamics; applications to chemical systems.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 665. Special Topics in Physical Chemistry** 1-3 Units
Description: An examination of one or more specified areas of Physical Chemistry. Topics vary; details announced each semester.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 666. Special Topics in Physical Chemistry** 1-3 Units
Description: An examination of one or more specified areas of Physical Chemistry. Topics vary; details announced each semester.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 667. Reaction Kinetics** 3 Units
Prerequisite(s): One year of physical chemistry.
Description: Theory of the rate of chemical reactions; methods of studying reaction rates; reaction energetics; reactions in solution; chain reactions and inference of mechanism from rate studies.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 668. Electrochemistry** 3 Units
Prerequisite(s): Consent of instructor.
Description: A thermodynamic and kinetic study of electrochemical phenomena, including electrical conductivity, electrophoresis, electrode potentials, and electrode processes.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 670. Chemistry of Heterocyclic Compounds and Alkaloids** 3 Units
Prerequisite(s): One year each of organic and physical chemistry.
Description: Structures, reactivities, activities, and synthesis of heterocyclic systems including natural products and their uses in medicine.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 671. Advanced Polymer Chemistry** 3 Units
Prerequisite(s): One year each of organic and physical chemistry.
Description: Polymer characterization, physical properties and structure. Conformational changes, elasticity, relaxation phenomena, size and chain distributions; application of microscopy, spectroscopy, magnetic resonance, and diffraction to polymers; liquid crystals.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 672. Quantum Chemistry** 3 Units
Prerequisite(s): CHEM 561 or CHEM 660.
Description: Principles of quantum theory with applications to chemistry; and advanced treatment of atomic and molecular structure including Slater-Condon methods for atoms and LCAO-MO-SCF methods for molecules; introduction to ab initio methods.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- CHEM 675. Special Topics in Organic Chemistry** 1-3 Units
Prerequisite(s): One year of organic chemistry.
Description: Current problems in organic chemistry; organometallic chemistry; free radical reactions; carbohydrates and nucleosides; peptides.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 677. Mechanisms and Theory in Organic Chemistry** 3 Units
Prerequisite(s): Two semesters of undergraduate organic chemistry.
Description: This course focuses on the mechanism and theory of classical and contemporary organic reactions, including acid and base catalysis, pericyclic reactions, metal-mediated reactions and radical and photochemical reactions.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 678. Advanced Organic Chemistry: General Survey** 3 Units
Prerequisite(s): One year each of organic and physical chemistry.
Description: First semester (CHEM 678): an introduction to advanced physical organic chemistry, linear free energy relationship, kinetics, isotope effects and spectroscopic techniques as used in the interpretation of reaction mechanisms. Second semester (CHEM 679): an introduction to advanced organic chemistry emphasizing reactions and synthesis, and including spectral applications.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 679. Advanced Organic Synthesis** 3 Units
Prerequisite(s): One year each of organic and physical chemistry.
Description: An introduction to advanced organic chemistry emphasizing modern synthesis reagents, reactions and their mechanisms.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 681. Modern Biochemistry I** 3 Units
Prerequisite(s): One year each of organic and physical chemistry or consent of instructor.
Description: Chemistry and physical properties of proteins, other biopolymers; enzymatic reaction mechanisms and kinetics; bioenergetics.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 682. Modern Biochemistry II** 3 Units
Prerequisite(s): CHEM 681 or consent of instructor.
Description: Carbohydrate, lipid, protein, and nucleic acid metabolism; endocrine control of metabolism and physiological activities.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 684. Biophysical Chemistry** 3 Units
Prerequisite(s): CHEM 462 (or equivalent) and CHEM 545/CHEM 645, or consent of instructor.
Description: Basis theory and practical applications of modern biophysical methods; spectroscopy, hydrodynamics, thermodynamics, kinetics, and computational methods applied to protein and nucleic acid systems.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 685. Special Topics in Biochemistry** 1-3 Units
Prerequisite(s): CHEM 547, or CHEM 647, or consent of instructor.
Description: Recent developments in selected areas of Biochemistry.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 687. Molecular Spectroscopy** 3 Units
Prerequisite(s): CHEM 561 or CHEM 660.
Description: Molecular structure and interactions as determined by spectroscopic investigation. Rotational, vibrational and electronic spectroscopy as determined by ultraviolet, visible, infrared, microwave and radio frequency methods. Fundamental theory and experimental methods.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 688. X-Ray Crystallography and Its Application to Molecular Structure** 3 Units
Prerequisite(s): CHEM 561 or CHEM 660.
Description: Crystal structure analysis. Topics include: symmetry, space groups, data collection, structure solution and refinement, structural analysis and presentation of scientific results.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 691. Research** 1-15 Units
Prerequisite(s): 30 semester hours of undergraduate chemistry.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 692. Research** 1-15 Units
Prerequisite(s): 30 semester hours of undergraduate chemistry.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CHEM 695. Seminar** 1-3 Units
Grading Basis: Pass/Fail
Description: Required of all graduate students during residency. Students present one literature and one research seminar by the end of the 3rd semester; participate/attend in department seminar.
Note: Maximum credit allowed is 3 semester hours.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Chinese (CHNS)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any

given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

CHNS 551. Special Topics

3 Units

Term Typically Offered: Occasionally Offered

Prerequisite(s): CHNS 456 (or equivalent), or permission of the instructor.

Description: The course aims at bridging the gap between students advanced skills of spoken Chinese and their understanding of the complexity of advanced written Chinese.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Civil and Environmental Engineering (CEE)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

CEE 503. Fundamentals of Engineering Exam Review

2 Units

Grading Basis: Pass/Fail

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): 4th-year standing.

Description: Review of topics covered on eight-hour NCEES Fundamentals of Engineering examination. Not to be counted towards meeting the requirements for a degree.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CEE 520. Design of Structural Systems

3 Units

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): CEE 421, CEE 422, and CEE 452.

Description: Introduction to the design of structural systems. Model building codes. Material, structural system and foundation system selection. Design of connections. Economic, detailing constructability and erection issues. Preparation of engineering drawings. Review of shop drawing.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CEE 522. Fundamentals of Prestressed Concrete

3 Units

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): CEE 322 and CEE 421.

Description: Introduction to pre-tensioned and post-tensioned prestressed concrete. Design of precast concrete slabs, buildings, and bridges in accordance with ACI specifications and the Prestressed Concrete Institute (PCI) recommended practices. Application of computer programs for member analysis and design.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CEE 523. Timber Design

3 Units

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): CEE 254 or consent of instructor.

Description: Concepts of Structural Timber design will be taught. The properties of wood materials will be reviewed and the procedures for the design of typical timber components will be presented. In addition to course assignments, and tests, required of all students, students taking this course for graduate credit will be required to complete a group design of a simple building.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CEE 524. Bridge Design

3 Units

Term Typically Offered: Summer Only

Description: This class offers detailed coverage of engineering basics for the design of short- and medium-span bridges.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CEE 530. Construction Materials

3 Units

Term Typically Offered: Spring Only

Prerequisite(s): CEE 254 and CEE 255.

Description: Properties of construction materials such as cement, concrete, asphalt, and structural elastomers. Design of Portland cement concrete and asphaltic concrete mixes.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CEE 532. Experimental Stress Analysis

3 Units

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): CEE 530.

Description: Fundamentals of experimental stress analysis, brittle coating, photoelastic coating, and electrical strain gage techniques, strain measurements under static and dynamic loading.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

<p>CEE 540. Construction Management 3 Units Term Typically Offered: Fall Only Description: This course discusses construction management including estimating, bidding, time/cost management, provisions, surety bonds, ownership, and project scheduling. Other topics, such as temporary erosion control and plan & print reading will also be covered. Note: This section is restricted to students with a major in the department.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>CEE 562. Geometric Design of Highways 3 Units Term Typically Offered: Occasionally Offered Prerequisite(s): CEE 460. Description: The concepts of geometric design for rural and urban highways, utilizing proprietary design software are introduced and applied. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>CEE 541. Construction Equipment and Practice 3 Units Term Typically Offered: Spring Only Description: This course will provide an overview of construction planning and practices rather than construction management. The emphasis will be on the Construction Depth content of Civil Engineering. The topics covered in the course will be guided by the anticipated content of fundamental construction engineering practice and will follow the various chapters of the required textbook. Note: This section is restricted to students with a major in the department.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>CEE 563. GPS Theory and Application 3 Units Term Typically Offered: Fall, Spring, Summer Prerequisite(s): CEE 460. Description: This course is designed to give the student an overview of the use of Global Positioning Systems in surveying and engineering applications. Elements of coordinate systems, map projections, GPS principles of operation, mapping, boundary, and construction surveys will be covered. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>CEE 552. Earth Pressures and Retaining Structures 3 Units Term Typically Offered: Fall, Spring, Summer Prerequisite(s): CEE 450. Description: Earth pressure calculation: theory and practice. Design techniques for retaining walls, reinforced earth and soil nailing. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>CEE 565. GIS Applications to Transportation 3 Units Term Typically Offered: Fall, Spring, Summer Prerequisite(s): CEE 460. Description: Introduces an overview and application of current methods of implementing GIS solutions to highway data analysis and planning studies. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>CEE 553. Advanced Foundation Design 3 Units Description: This course covers site investigation and subsurface exploration with the purpose of foundation design. Then, the course covers the analysis and design of single piles and group piles considering pile capacity and pile head displacement. At the end, the course covers pile driving analysis to test the integrity of the concrete. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>CEE 570. Applied Hydraulics 3 Units Term Typically Offered: Fall, Spring, Summer Prerequisite(s): CEE 572. Description: Application of basic principles of hydraulic engineering to analysis of flow in floodways, through bridge openings, culverts, and spillways. Analysis of stable channel design is also considered. Commonly used computer programs are utilized to design structures in floodways. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>CEE 560. Traffic Engineering 3 Units Term Typically Offered: Fall, Spring, Summer Prerequisite(s): CEE 460. Description: Examines characteristics of the vehicle, the driver, and the traffic stream. Highway and intersection capacity, theory of traffic flow, parking, traffic safety. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>CEE 571. Applied Hydrology 3 Units Term Typically Offered: Fall, Spring, Summer Prerequisite(s): CEE 470. Description: Introduction to hydrologic systems; modeling runoff from watersheds using lumped and distributed methods; stormwater management and design; hydrologic and hydraulic routing including kinematic wave routing; computer rainfall-runoff simulation models. A hydrologic design project will be assigned to all students; special assignments dealing with hydrologic processes will be assigned to MS degree students. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>

- CEE 572. Open Channel Hydraulics** **3 Units**
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): CEE 370.
Description: Application of basic principles of hydraulics to open channel flow. Theory and analysis of critical, uniform and gradually varied flow and computer analysis. Select topics in rapidly varied and unsteady flow. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CEE 573. Groundwater Hydrology** **3 Units**
Term Typically Offered: Occasionally Offered
Prerequisite(s): CEE 450 and CEE 470.
Description: Fundamental concepts of fluid flow and soil properties; theory of groundwater movement; mechanics of well flow; groundwater contaminant transport. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CEE 590. Current Topics in Civil Engineering** **1-4 Units**
Term Typically Offered: Occasionally Offered
Prerequisite(s): Consent of instructor.
Description: An examination of one or more topics in Civil Engineering. Details announced each semester. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CEE 604. Interaction of Soils and Structures** **3 Units**
Prerequisite(s): CEE 421, CEE 422, and CEE 452.
Description: Response of foundation materials to applied static and dynamic loads. Foundation design procedures based upon consideration of soil-structure interaction. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CEE 620. Advanced Mechanics of Solids** **3 Units**
Prerequisite(s): By permission of Department Chair.
Description: Analysis of stress and strain. Topics include theories of failure, unsymmetric bending, curved beams, shear center, torsion, beams on elastic foundations, beams with combined axial and lateral loads, thick-wall cylinders, rotating disc, introduction to elastic stability.
Note: This class is for CEE students; students from other departments will need to get permission from CEE department chair. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CEE 621. Finite Element Analysis for Structural Engineers** **3 Units**
Description: Introduction to the finite element method (FEM) and its application to structural engineering. Topics include displacement and variational base one-, two-, and three-dimensional element formulation, introductory elasticity, isoparametric elements, interpolation methods, numeric integration, geometric and material nonlinearity. Emphasis on FEM program development. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CEE 623. Advanced Structural Engineering** **3 Units**
Description: Design of earthquake resistant steel, concrete, and masonry structures. Introduction to time history, modal analysis and pushover analysis. Model code seismic design provisions. Ductility concepts. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CEE 625. Structural Dynamics** **3 Units**
Prerequisite(s): CEE 322.
Description: Dynamic analysis of structural systems including dynamic response by modal superposition, step integration, response spectrum frequency analysis. Computer applications. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CEE 626. Masonry Design** **3 Units**
Prerequisite(s): CEE 421.
Description: Concepts of masonry design will be taught. The properties of masonry materials will be reviewed and the procedures for the design of typical masonry components will be presented. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CEE 627. Non-Destructive Testing** **3 Units**
Prerequisite(s): Graduate/Professional standing.
Description: Introduce different non-destructive testing methods for quality evaluation of concrete. Penetration resistance methods, resonant frequency methods, ultra-sonic pulse velocity, maturity technique will be covered. Ground penetrating radar. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CEE 650. Measurement of Soil Properties** **3 Units**
Prerequisite(s): CEE 450.
Description: Laboratory testing of soil mechanical properties; index testing; testing for permeability, compressibility, and shear strength. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CEE 652. Advanced Earth Pressure and Retaining Structures** **3 Units**
Description: Soil pressure-structure movement interactions. Design of anchored bulkheads. Retained excavation analysis. Design of cellular cofferdams. Introduction to culverts/tunnels. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CEE 653. Design of Earth Structures** **3 Units**
Prerequisite(s): CEE 450.
Description: Seepage and internal erosion. Stability analyses. Failure mechanisms in natural slopes. Design of earth dams. Embankment construction, control and instrumentation. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

<p>CEE 654. Rock Mechanics 3 Units Prerequisite(s): CEE 450. Description: Physical properties of intact rock; mechanical properties of rock masses, emphasis on practical applications. Rock blasting. Tunneling. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>CEE 665. Pavement Design 3 Units Prerequisite(s): CEE 450 and CEE 460. Description: Design of flexible and rigid pavements, base courses, and subgrades. Effects of loading on pavement life. Investigation of pavement distress and rehabilitation. Introduction to pavement management systems. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>CEE 656. Geotechnical Earthquake Engineering 3 Units Description: This course is an introduction to the problems that engineers face in earthquake prone regions. It is an "interdisciplinary" course in the sense that it covers topics from geology, geophysics, structural and geotechnical engineering, and probability. Emphasis in the course is given to two main issues: (1) assessment of design motion at a site, and (2) evaluation of the effects of this motion on geotechnical/structural systems. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>CEE 670. Advanced Hydraulics 3 Units Prerequisite(s): CEE 370. Description: Dimensional analysis; integral form of the equations of motion; shear stress distribution; turbulence and boundary layer theory; concepts in particle drag and settling. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>CEE 660. Transportation Planning and Urban Development 3 Units Prerequisite(s): CEE 460. Description: Focuses on the principles of transportation planning in the urban environment, including land use planning, with emphasis on the orderly development of the transportation system. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>CEE 671. Stochastic Processes in Hydrology 3 Units Description: Basic concepts and classification of stochastic processes with emphasis on hydrologic systems; analysis of hydrologic time series; models for stationary hydrologic stochastic processes. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>CEE 661. Environmental Analysis of Transportation Systems 3 Units Description: An examination of the various impacts that transportation systems and projects may have on the natural and human environment. A detailed review and application of transportation noise analysis. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>CEE 672. Statistical Methods in Water Resources 3 Units Prerequisite(s): IE 360. Description: Applications of advanced concepts of probability and statistics in hydrology and water resources including frequency analysis and regionalization; parameter estimation; analysis of variance and multiple regression techniques. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>CEE 662. Airport Planning & Design 3 Units Prerequisite(s): CEE 460. Description: The principles of location, planning, design, and evaluation of airports are examined from the engineering perspective. In addition, laws and regulations concerning airports and the aviation system are thoroughly studied. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>CEE 673. Advanced Hydrology 3 Units Prerequisite(s): CEE 470 and IE 360. Description: Advanced concepts for studying hydrologic processes; theory of linear hydrologic systems; conceptual models for modeling watershed rainfall-runoff response including geomorphological approaches. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>CEE 663. Advanced Traffic Operations 3 Units Term Typically Offered: Spring Only Description: This course has an emphasis on capacity analysis and using computer techniques to solve traffic problems. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>CEE 674. Water Resources Systems 3 Units Description: Application of systems analysis techniques in the planning and design of water resources projects; mathematical optimization; simulation and risk-based decision-making. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>CEE 664. Fundamentals of Intelligent Transportation Systems 3 Units Description: Examines the elements of traffic flow theory, incident/emergency management, dynamic route guidance, in-vehicle systems, and traffic signal systems. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>CEE 675. Surface Water Quality Modeling 3 Units Prerequisite(s): Consent of instructor. Description: Modeling, design and control of water quality in river, lake, and estuary systems; dissolved oxygen and toxic substance models; and lake eutrophication. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>

CEE 676. Sediment Transport and River Mechanics 3 Units**Prerequisite(s):** CEE 370.**Description:** Sediment transport theory; overland erosion; alluvial streams; analysis, prediction, and control of river characteristics; local scour at river structures.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**CEE 677. Groundwater Modeling** 3 Units**Description:** Mathematical and numerical modeling of groundwater and pollution transport.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**CEE 680. Civil Engineering Capstone Design** 3 Units**Prerequisite(s):** Restricted to CEE Master of Engineering students (SP).**Description:** A capstone Civil & Environmental Engineering course to include elements of geotechnical, structural, transportation, and water resources engineering in a comprehensive design project.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**CEE 681. Green Engineering & Sustainable Design** 3 Units**Description:** Understand the origins and applicability of sustainable design and green engineering. Ultimately, be able to apply fundamental engineering concepts to these practices.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**CEE 690. Master of Science Thesis in Civil Engineering** 1-6 Units**Description:** Experimental and/or theoretical research to be presented in thesis for degree requirement.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**CEE 693. Independent Study in Civil Engineering** 1-6 Units**Description:** Independent study in a selected subject area with approval and supervision by a faculty member.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**CEE 694. Special Topics in Civil Engineering** 1-6 Units**Description:** An examination of one or more specified areas of Civil Engineering. Topics vary; details announced each semester.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**CEE 697. Master of Engineering Thesis in Civil Engineering** 1-6 Units**Prerequisite(s):** Graduate/professional school standing.**Description:** A candidate for the Master of Engineering degree, specializing in the field of civil engineering, is required to perform a study, design, or investigation under the direction of a faculty member. A written thesis is required to be presented and defended orally and submitted to the faculty for approval.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**CEE 698. Civil Engineering PhD Seminar** 3 Units**Grading Basis:** Pass/Fail**Prerequisite(s):** Permission of the chair.**Description:** Current literature in the field of civil engineering; extensive student presentations on research projects with interaction and feedback from students and faculty; guest speakers.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**CEE 699. Civil Engineering PhD Research** 1-18 Units**Prerequisite(s):** Permission of dissertation director.**Description:** Original research activity in an appropriate civil engineering discipline, under the direction of a Civil Engineering graduate faculty member.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Commercial Law (CLAW)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

CLAW 600. Legal Aspects of Business 3 Units**Description:** Public policy toward business as expressed in the law.

Government regulation of securities, trade, employment, environment, and organization: a broad review.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CLAW 610. Commercial Law for Professional Accountants 3 Units
Prerequisite(s): Admittance to the Master of Science in Accountancy and Analytics program.

Description: Covers the legal environment of the professional accountant, including business organizations, government regulations and legal liability.

Note: Cross-listed with MAC 610.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CLAW 680. Special Topics in Business and Law 3 Units

Description: A focused study of selected issues in the regulation of business. Content varies at the discretion of the instructor.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Communication (COMM)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

COMM 505. Perspectives on Religion and Media - CUE, WR 3 Units
Prerequisite(s): COMM 305 and 90 credit hours completed.

Description: Study of the history and meaning of mediated religious communication, focusing on journalism and strategic communication.

Note: Approval for the Arts & Sciences upper-level requirement in written communication (WR).

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

COMM 506. Ethical Problems in Communication - CUE, WR 3 Units
Prerequisite(s): COMM 305 and 90 credit hours completed.

Description: Examines the moral and ethical problems posed by communication practices. Topics include case studies in interpersonal communication, journalism, public relations, and advertising.

Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

COMM 510. Special Topics in Communication Studies 1-3 Units

Term Typically Offered: Occasionally Offered

Prerequisite(s): Faculty consent.

Description: Advanced study in specific areas of Communication Studies.

Note: May be repeated under different subtitles.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

COMM 520. Computer-Mediated Communication - WR 3 Units

Term Typically Offered: Occasionally Offered

Description: Conceptual analysis and practical use of computer networks with an emphasis on the social and cultural dimensions of this type of human communication.

Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

COMM 530. Science Communication 3 Units

Description: The course examines the conceptual foundations and practices of science communication. It examines the institutional and intellectual contexts of science communication as well as the scientific constraints on science communication.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

COMM 538. Intimate Communication - WR 3 Units

Term Typically Offered: Fall, Spring

Prerequisite(s): COMM 201 or consent from instructor.

Description: Explores communication issues in intimate personal relationships.

Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

<p>COMM 540. Public Communication Campaigns 3 Units Term Typically Offered: Occasionally Offered Description: Drawing upon emerging new theories and empirical studies on influencing audiences, this course examines mediated public communication campaigns. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>COMM 603. Communication Pedagogy 3 Units Description: An introduction to teaching college-level in Communication. Applies various theories of communication to nature of interactions between students and teachers. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>COMM 555. Persuasive Movements 3 Units Description: Seminar focuses upon the role of persuasion and rhetoric in the formation and lifespan of social movements. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>COMM 605. Communication Theory & Practice 3 Units Prerequisite(s): Graduate standing. Description: Seminar studies theories and empirical research in persuasion, social interaction, and group decision-making and offers applied problems that require public presentations by seminar participants. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>COMM 565. Special Topics in Communication Service Learning - CUE 3 Units Prerequisite(s): Faculty consent. Description: Study of communication concepts and theories that will be applied in service learning field work. Note: May be repeated up to six hours under different subtitles. Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>COMM 610. Problems of Public Discourse 3 Units Prerequisite(s): Consent of instructor. Description: Surveys the chief theories and disputes about public discourse, public knowledge, and decision-making. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>COMM 580. Interpersonal Communication 3 Units Description: Study of communication in everyday life, including casual conversation and interaction among acquaintances. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>COMM 616. Qualitative Communication Research 3 Units Prerequisite(s): Graduate standing. Description: Instruction in the practical issues and conceptual debates in qualitative research in the field of communication. Methods includes interviewing, participant observation, unobstructive observation, historical/archival methods, narrative and ethnography. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>COMM 590. Health Communication 3 Units Prerequisite(s): Consent of instructor. Description: Studies the nature, function, and importance of communication in the delivery of health care, and/or medical knowledge. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>COMM 617. Quantitative Methods in Communication 3 Units Prerequisite(s): Graduate standing. Description: Instruction in procedures used to systematically and mathematically measure difference between groups and relationships between variables among various communication populations. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>COMM 600. Practicum 1-3 Units Prerequisite(s): Consent of instructor. Description: Practical work in speech. Note: Pass/Fail grading. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>COMM 620. Organizational Communication 3 Units Prerequisite(s): Consent of instructor. Description: Theoretical and applied studies of communication within organizations and between organizations and their publics. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>COMM 601. Professional Seminar in Communication 1 Unit Grading Basis: Pass/Fail Prerequisite(s): Graduate standing. Description: Overview of the communication discipline and introduction to the academic study of communication. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>COMM 625. Personality and Communication 3 Units Prerequisite(s): Graduate standing. Description: Exploration of individual differences in communication processes, such as argumentativeness, shyness, persuasiveness, and leadership. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>

<p>COMM 630. Communication and Multiculturalism 3 Units Prerequisite(s): Consent of instructor. Description: Explores the influence of race, nationality, and/or gender on the communication practices of individuals and their institutions. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>COMM 654. Public Relations and Crisis Management 3 Units Description: Examines problems of planning and implementing public relations strategies for crisis management. The organizations studied include corporations, agencies, educational and government institutions, and non-profits. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>COMM 640. Communication in Social Service 3 Units Prerequisite(s): Consent of instructor. Description: Studies public communication campaigns, e.g., health information and policy campaigns. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>COMM 660. Selected Topics in Mass Media 3 Units Prerequisite(s): Graduate standing. Description: Examination of topics specific to the study of mass media not covered in other courses. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>COMM 650. Corporate Communication 3 Units Prerequisite(s): Graduate standing. Description: Study of the nature, strengths, and weaknesses of empirical research in organizational communication and application of these findings to analysis, diagnosis, and remedy or communication problems in specific organizations. Focus is primarily on case studies and in-community "practicum" consulting project. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>COMM 670. Directed Readings in Communication 3 Units Description: Faculty supervised readings on special topics in communication theory, research and practice. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>COMM 651. Conflict Management 3 Units Description: Uses role playing and case studies in community organizations to assist students in developing the skills needed for managing conflict. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>COMM 675. Risk Communication 3 Units Prerequisite(s): Graduate standing. Description: Examines the study of risk communication across various contexts (e.g., health, environmental). Focuses on the role of messages in shaping risk perception, evaluation, and behavior. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>COMM 652. Health Communication: Theory and Practice 3 Units Term Typically Offered: Fall Only Description: This course uses health communication theories and methods to design and evaluate health communication materials that capitalize on opportunities afforded by the current context. Students will learn the concepts of effective public health communication across multiple media and levels of the social ecology, considering a variety of audiences, and achieving multiple purposes. Students will also learn to critically analyze examples of communication and develop culturally responsive communication material oriented towards public health interventions. The course will emphasize the development of delivering health information in a meaningful, actionable, and accessible manner. Note: Cross-listed with PHPB 612.</p>	<p>COMM 690. Special Topics 3 Units Description: Examination of topics not covered in regularly-scheduled courses. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>COMM 698. Thesis 1-6 Units Prerequisite(s): Graduate standing. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>COMM 653. Integrated Marketing Communication Campaigns 3 Units Description: Study of integrated advertising, public relations, and sales promotions. Course culminates with students preparing integrated marketing plans for local clients. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>COMM 698. Thesis 1-6 Units Prerequisite(s): Graduate standing. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>

Communicative Disorders (CMDs)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific

fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

CMDS 563. Clinical Phonetics **3 Units**

Term Typically Offered: Spring Only

Prerequisite(s): Must be at least a Junior or Senior undergraduate student to register.

Description: The International Phonetic Alphabet and other symbol systems are utilized in transcription of speech sounds. A description of speech sounds in terms of acoustics and physiologic dimensions. Special emphasis on speech disorders and dialects.

Note: Cross-listed with CMDS 463.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CMDS 564. Normal Speech and Language Development **4 Units**

Term Typically Offered: Fall Only

Description: Reviews normal development of language and speech across the lifespan including syntax, semantics, morphology, pragmatics, and phonology. An overview of dialectical, cultural, and bilingual aspects are discussed as well as basic language sampling and analysis procedures.

Note: Cross-listed with CMDS 464.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CMDS 570. Clinical Observation in Speech Pathology and Audiology **1 Unit**

Grading Basis: Pass/Fail

Prerequisite(s): Restricted to graduate students only.

Description: Observations in speech pathology and audiology. Additional observations may be assigned to introduce students to the variety of practicum opportunities available in the program.

Note: Cross-listed with CMDS 470.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CMDS 571. Functional Neuroanatomy **3 Units**

Term Typically Offered: Fall Only

Description: An overview of general neuroanatomy and neuroanatomical principles applied to communication and communicative disorders including hearing, speech, language, cognition, swallowing, and emotion.

Note: Cross-listed with CMDS 471.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CMDS 572. Anatomy and Physiology for Communication Sciences **4 Units**

Prerequisite(s): Restricted to graduate students only.

Fee: An additional \$50.00 is charged for this course.

Description: Structure and function of speech, auditory/vestibular mechanisms. Includes neuroanatomy and neurophysiology of communication. Emphasis on clinical applications. Dissection of human cadaver material.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CMDS 574. Multicultural Issues in Communicative Disorders **3 Units**

Term Typically Offered: Fall Only

Description: An overview of the research arena as applied to communication disorders. Techniques and applications of literature review, research design, statistical methods, and effective writing will be covered.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CMDS 600. Research Methods in Speech-Language Pathology **2 Units**

Description: This course will introduce speech-language pathology graduate students to the various aspects of research including: where to find journal articles, how to read journal articles, basic statistical approaches, and research design. The course will include guest speakers from clinical and basic sciences and expose students to the plethora of research careers.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CMDS 602. Speech Sound Disorders **3 Units**

Prerequisite(s): CMDS 563.

Description: This course covers the study of vowel and consonant characteristics; sequence of development of phonology and articulation; and procedures for diagnosing and treating phonological and articulation disorders.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CMDS 606. CMDS Independent Study **1-5 Units**

Prerequisite(s): Permission of instructor.

Description: Individualized course with topics to be determined by the instructor. May be repeated.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CMDS 611. Practicum in Speech Pathology **1-5 Units**

Prerequisite(s): CMDS 563.

Corequisite(s): CMDS 564.

Description: Diagnostic and therapeutic contact with individuals who exhibit communication disorders. Practicum obligations include treatment planning, report writing and patient/parent counseling. Advanced students will be assigned to outside practicum sites with the consent of the instructor.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CMDS 612. Early Childhood Language Assessment & Intervention 3 Units**Prerequisite(s):** CMDS 564.**Description:** This course covers early childhood language assessment and intervention - including phonology - for infants, toddlers and preschool-aged children. Emphasis is placed on typical development as well as disordered populations.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**CMDS 618. Counseling and Interviewing 3 Units****Description:** An online course that reviews the speech-language pathologists' roles and responsibilities related to the techniques associated with counseling patients and their families. The course will review contemporary theories of counseling and will provide strategies for interviewing and reporting results.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**CMDS 620. Motor Speech Disorders 3 Units****Corequisite(s):** CMDS 572.**Description:** Motor speech disorders are speech disorders resulting from neurological damage that affects the motor control of speech muscles or motor programming/planning of speech movements. The most common motor speech disorders are dysarthria and acquired apraxia of speech. This course will cover diagnosis and treatment.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**CMDS 630. Aural Rehabilitation for the Speech-Language Pathologist 3 Units****Term Typically Offered:** Spring Only**Prerequisite(s):** AUDI 605 and CMDS 572.**Description:** This course provides an overview of the various hearing impaired habilitative/rehabilitative programs/techniques for pediatric through geriatric populations. Topics may include: speech/language development for children with impaired hearing; physiology and psychosocial impact of hearing loss in older adulthood; cochlear implants; educational management for children with impaired hearing; an overview of hearing aids; and assistive listening devices.**Note:** Cross-listed with CMDS 430.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**CMDS 652. School-Age Language Assessment and Intervention 3 Units****Prerequisite(s):** CMDS 564.**Description:** This course covers school-age language assessment and intervention - including phonology - for school-age children and adolescents. Emphasis is placed on typical development as well as disordered populations and emphasizes phonological and pragmatic aspects of language along with semantics, morphology and syntax.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**CMDS 658. Interprofessional Education and Practice 1 Unit****Term Typically Offered:** Fall Only**Description:** Reviews the speech-language pathologist' roles/responsibilities when collaborating with other professionals in medical and/or educational settings. The course emphasizes learning about, from, and with other professionals in order to deliver the highest quality of care across settings.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**CMDS 663. Voice Disorders 3 Units****Prerequisite(s):** CMDS 572.**Description:** Study of abnormalities of voice production including dysphonia, psychogenic disturbance, and resonance imbalance. Incorporates laboratory demonstrations and exercises to develop skills using the following technologies: video stroboscopy, videofluoroscopy for VPI, manometry, the Visi-pitch, etc.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**CMDS 665. Fluency Disorders 3 Units****Description:** Examines fluency disorders of children and adults. Reviews the literature on etiology and theories of dysfluency. Assessment procedures and therapeutic management are discussed. Includes a review of current technological applications.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**CMDS 667. Aphasia 3 Units****Prerequisite(s):** CMDS 620.**Description:** Historical review of the neurological basis of language processing. Emphasis on the speech and language disorders, diagnosis and remediation of patients experiencing right and left cerebral vascular accidents.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**CMDS 668. Professional Issues in Audiology and Speech Pathology 3 Units****Description:** Survey of social, political, business and professional issues in health care delivery related to communicative disorders. Other topics include: curriculum vitae preparation, professional interviews, professional liabilities, contracts, and funding sources, quality assurance mechanism, etc. Pass-fail grading only.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**CMDS 669. Cognitive-Communication Disorders 3 Units****Prerequisite(s):** CMDS 620 and CMDS 572.**Description:** This course focuses on the cognitive-communication disorders that may result from dementia, neurological disorders, metabolic and drug-induced delirium and traumatic brain injury.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CMDS 690. Dysphagia **3 Units**
Prerequisite(s): CMDS 572.
Description: Evaluation and treatment of pediatric and adult patients with swallowing disorders. Specific emphasis on bedside dysphagia evaluations, modified barium swallow procedures, FEES, assistive devices, treatment techniques, and diet modifications.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CMDS 691. Advanced Dysphagia **2 Units**
Term Typically Offered: Fall Only
Prerequisite(s): CMDS 690.
Description: CMDS 691 is an elective course that investigates complex clinical issues in dysphagia assessment and management; includes discussion regarding end-of-life care and ethical situations.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CMDS 694. Pediatric Feeding and Swallowing **3 Units**
Prerequisite(s): CMDS 690.
Description: This course will focus on pediatric feeding and swallowing disorders from a whole body perspective. The course will cover typical feeding development, characteristics and ramifications of atypical feeding development, underlying diagnoses that may contribute to feeding problems, assessment, and treatment techniques from infancy through adolescence.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CMDS 696. Augmentative/ Alternative Communication **3 Units**
Prerequisite(s): CMDS 652.
Description: Provides exposure to the area of augmentative/alternative communication (AAC). Topics include functional dimensions of AAC systems; symbol systems; transmission techniques; and intervention strategies.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CMDS 699. Research Project **1-3 Units**
Description: This course is the equivalent of a master's level thesis. The student will complete a research project that is suitable for future publication. The project is composed of developing a research question, completing a thorough review of the literature, developing the methodology to implement and conduct research, analyzing the data, and formulating conclusions, and need for future research. The completed project will be submitted to an appropriate journal for publication.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Computer Information Systems (CIS)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that

they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

CIS 500. Computer Concepts for Managers **1.5 Units**
Grading Basis: Pass/Fail

Prerequisite(s): ISDP 154 and ISDP 155; CIS 300.
Description: Fundamentals of application based software including spreadsheet, data manipulation and reporting, presentation graphics, and public network access.
Note: Pass/fail grading.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CIS 610. eBusiness Models **3 Units**
Prerequisite(s): MBA 668.

Description: Discussion of business concepts and strategic opportunities surrounding the emergence of eBusiness. Understanding how the Internet impacts existing business models and how these models are adapted for the digital economy.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CIS 615. Internet Systems and Tools for eBusiness **3 Units**
Prerequisite(s): CIS 610 (or concurrently); CIS 675 or MBA 668.

Description: Discussion and use of Internet technologies and tools. Typical products (e.g., B2B and CRM) are evaluated to determine how they may be used to align with eBusiness strategic goals.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CIS 620. eBusiness Practicum **3 Units**
Prerequisite(s): CIS 610, CIS 615, CIS 675 or MBA 668.

Description: Application of digital economy concepts and Internet technologies to an eBusiness problem. Project teams will create an eBusiness model, develop system requirements, and implement web prototypes of the proposed solution.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CIS 655. Computer Ethics and Social Issues **3 Units**

Description: In-depth examination of the ethical and social aspects of computing. Topics include responsibilities for computer professionals, organizational and work transformation, privacy, social interaction in electronic forums, policy and other current issues. Case studies, in-class discussion, and position papers will be used extensively.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CIS 680. Special Topics in CIS 1-6 Units

Description: An advanced study of one or more selected topics on issues related to the study of Computer Information Systems.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CIS 698. Research Seminar in CIS 1-6 Units

Prerequisite(s): Permission of departmental chair.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Computer Science and Engineering (CSE)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

CSE 503. Survey of Computer Science and Engineering 3 Units

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): CSE 130.

Description: Introduction to foundations of computer science and engineering for non-majors. Emphasis on C++ programming language, data structures and algorithms, and operating systems fundamentals. This course cannot be used to meet degree requirements for any CSE/CS degree.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CSE 504. Automata Theory 3 Units

Term Typically Offered: Fall, Spring

Prerequisite(s): CSE 310.

Description: Finite state machines and their application to engineering problems including modeling the behavior of discrete systems. Topics include theory of computing, formal language theory, and applications of cellular automata. Engineering models of digital computer hardware are covered and related to software design.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CSE 506. Modeling and Analysis of Engineering Systems 3 Units

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): ENGR 330.

Description: Representation of engineering systems, Fourier analysis, z-transforms, frequency response, state-space analysis, stability, an introduction to the basic theory of filter design, and demonstrated concepts to CAS.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CSE 510. Computer Design 3 Units

Term Typically Offered: Fall, Spring

Prerequisite(s): ECE 210.

Corequisite(s): ECE 511.

Description: Review of logic design and elementary computer organization. Design of the central processing unit, memory, control, and input-output portions of a computer. The VHDL hardware design language will be used.

Note: Cross-listed with ECE 510.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CSE 516. Fundamentals of Computer Communications and Networks 3 Units

Term Typically Offered: Fall, Spring

Prerequisite(s): ECE 360 or IE 360, and CSE 412.

Description: Data communications: The exchange of data between devices is covered. The key aspects of transmission interfacing, link control, and multiplexing are examined. Data communication networking: Examines the internal mechanisms by which communication networks provide a data transfer service for attached devices.

Note: Cross-listed with ECE 518.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CSE 522. Performance Evaluation of Computer Systems 3 Units

Term Typically Offered: Fall Only

Prerequisite(s): IE 360 and CSE 420.

Description: A study of approaches to the evaluation of computer systems. Measurement techniques and evaluation techniques are treated in detail with attention to existing commercial hardware and software monitors and simulators.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CSE 525. Microcomputer Design 4 Units

Term Typically Offered: Fall, Spring

Prerequisite(s): ECE 412 or CSE 412 or consent of instructor.

Description: Design and construction of microcomputers with microprocessors and digital integrated circuits. Breadboarding, hardware design, and software design are emphasized. The class is separated into groups, and each group designs, breadboards, and tests a complete microcomputer system, including interfaces to peripheral devices.

Note: Cross-listed with ECE 516.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- CSE 528. Game Design and Programming** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): CSE 302.
Description: This course will provide an overview of Multimedia and Game programming, and teach basic computer game design techniques using state-of-the-art game engines.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 530. Design of Compilers** 3 Units
Term Typically Offered: Summer Only
Prerequisite(s): CSE 420.
Description: Engineering descriptions of algorithmic language. Study of syntax, semantics, ambiguities, procedures, replication, iterations, and recursion in the language. Engineering design of a compiler.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 532. Python and Data Analytics** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): (CSE 120 or CSE 130) and Junior standing or higher.
Description: Python is an interpreted, high-level programming language useful for rapid application development. It supports many modules and packages suitable for tasks ranging from scientific research to business software development. In recent years Python has become a fundamental tool for numerical and data analysis, as well as machine learning. This course has a dual focus of providing users with advanced Python programming skills, as well as experience processing and analyzing data with Python and its libraries. It addresses a variety of topics in a Python programming context, including file management, working with data structures, algorithms and program development, object-oriented programs, and practical problem solutions and applications.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 535. Database Systems** 3 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): CSE 302 or equivalent.
Description: Course covers basics of database design, SQL, query processing, and optimization, transactions. The emphasis will be placed on Engineering design and implementation of relational systems. A written project is required.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 536. Data Management and Analysis** 3 Units
Term Typically Offered: Fall Only
Description: The goal of the course is to teach, to the students who are not Computer Science majors, the basic skills needed to organize, assess and analyze data sets. The course discusses a variety of tools (file systems, database systems, and the R environment) as well as a series of basic tasks, from generating metadata to basic filtering, organizing and enrichment of data sets. This course contributes to develop analysis, modeling and problem-solving skills.
Note: This course is intended for non-CSE majors.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 538. Graph Database and Graph Analytics** 3 Units
Term Typically Offered: Summer Only
Prerequisite(s): CSE 302.
Description: Our world is connected. Data representing real-world problems for analysis, however, usually are discrete and do not explicitly include connected information (relationship or link) in their data models. Graph analytics is the study and analysis of data that can be transformed into a graph representation consisting of nodes (to represent real-world entities) and edges (to represent relationships between entities). Graph analytics is built on the mathematics of graph theory, with augmentation of properties attached to nodes and edges. And graph database systems will be used to build a repository of connected graph data and query the data with a non-procedural graph query language, or an API based on a procedural programming language.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 539. Advanced industrial Software for Home Appliances (part A1)** 4.5 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): The student must be participating in the GE Appliance Edison program or employees at GE Appliances enrolled in the CSE program.
Description: This course provides graduate students working in the major home appliance industry with an advanced understanding of industrial software engineering and their application to technologies associated with the design, development, and production of major household appliances such as refrigerators, washers, dryers, cooking products and dishwashers. This course serves as one of the curricular elements for the GE Appliance Edison students and is limited to students participating in this program or employees at GE Appliances enrolled in the CSE program.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 540. Object Oriented Information Technology** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Graduate standing.
Description: Survey of design and development of object oriented software. Software architectures, development environments, graphical user interfaces, and networks of distributed objects. Software design project required.
Note: CSE students cannot receive credit for CSE 440 and 540.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 542. Computer Control and Real Time Programming** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): ECE 412 or CSE 412.
Description: Programmable Logic Controllers, Human Machine interfaces, SCADA, state machines, sensors, and actuators. Study of industrial algorithms, open/closed loop real-time control, and schematics.
Note: Previously cross-listed with ECE 517.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- CSE 545. Artificial Intelligence** 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): CSE 302 and CSE 310.
Description: This course introduces the use of predicate calculus logic, heuristic search, and knowledge representations for solving engineering and computer science problems. The course includes coverage of rule-based expert systems, intelligent agents, and machine learning. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 546. Introduction to Machine Learning** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): CSE 532, or IE 360 or equivalent This course provides a broad introduction to machine learning.
Description: This course will cover topics in data pre-processing, regression, classification, clustering, neural networks, ensemble methods, and deep learning. We will learn the fundamental concepts behind several machine learning algorithms without going deeply into the mathematics. We will focus on gaining practical experience applying machine learning to a range of real-world problems. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 547. Deep Learning Algorithms and Methods** 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): CSE 532, or IE 360 or equivalent Deep Learning is an area of Artificial Intelligence and Machine Learning techniques.
Description: Its ability to represent objects without the need of extensive feature engineering or pre-defining rules makes it one of the most powerful and flexible frameworks to learn from data. This course covers basic concepts and applications of Deep Learning Techniques. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 550. Software Engineering** 3 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): CSE 420.
Description: Engineering methods applied to the life-cycle issues in the team-oriented development of large software systems including issues of software processes, metrics, testing and quality. Documentation of the project and an oral presentation are required. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 551. Data Visualization for Data Science** 3 Units
Term Typically Offered: Spring Even Years
Prerequisite(s): CSE 302, CSE 532 This course is all about data visualization, the art and science of turning data into readable graphics.
Description: The course aims to introduce key design principles and techniques for interactively visualizing data. The major goals of this course are to understand how visual representations can help in the analysis and understanding of complex data, how to design effective visualizations, and how to create your own interactive visualizations with modern analytics languages. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 563. Experimental Design in Engineering** 3 Units
Term Typically Offered: Spring, Summer
Prerequisite(s): IE 360 OR IE 560.
Description: Design of engineering experiments and projects using theory of least squares, analysis of variance, randomized blocks, factorial experiments, nested designs, split plot designs and logistic regression techniques. Covers a combination of analysis by hand and using Minitab statistical software. Students may not obtain credit for both IE 563 and ME 611; or for IE 563 and EM 661.
Note: Cross-listed with IE 563.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 564. Introduction to Cryptography** 3 Units
Term Typically Offered: Summer Only
Prerequisite(s): CSE 310 and IE 360.
Description: This course gives a historical introduction to cryptography and the science of secret codes. The first part covers substitution ciphers, transposition codes, Vigenere cipher and more complex polyalphabetic substitutions including those created by rotor machines. The second part describes bit block cipher schemes such as Data Encryption Standard (DES). Public key encryption is the subject of the final part including RSA, Knapsack codes, and Diffie-Hellman key exchange. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 565. Software Security** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): CSE 220, CSE 564.
Description: This class offers a comprehensive view into software security practices. Students will learn how to develop software with security in mind, learn how to perform static code analysis, fuzz testing, and vulnerability assessments. It will analyze concepts of malware including viruses, adware, rootkits, and others. Students will gain a deep understanding of how software architectures and platforms as a whole must be developed to enhance security in design and development. The relationships to other aspects of cybersecurity in the software development lifecycle will be analyzed. Students will need a basic understanding of cryptography as well as some assembly and high-level (C, Java, Python) language proficiency. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 566. Information Security** 3 Units
Term Typically Offered: Summer Only
Prerequisite(s): CSE 420.
Description: Technical, legal and policy issues associated with information security. Authentication, trusted computer systems, information encryption, biometrics, computer forensics, and privacy issues. Written and verbal reports are required. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- CSE 568. Computer Forensics** 3 Units
Term Typically Offered: Summer Only
Prerequisite(s): CSE 311, CSE 420, and CSE 566, or consent of instructor.
Description: Course examines legal, legal, administrative, technical and scientific issues in computer forensics, network forensics, information security and trusted systems. Course requires class participation, lab work, team projects, writing and oral presentations.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 590. Special Topics in Computer Science and Engineering** 1-6 Units
Term Typically Offered: Spring Only
Description: Devoted to topics which usually are not treated in detail in the general courses.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 593. Independent Study in Computer Science and Engineering** 1-6 Units
Term Typically Offered: Fall, Spring, Summer
Description: Opportunity for the student, under the supervision of a sponsoring faculty member, to pursue individualized study related to research or practice that is not included in regular courses in the curriculum.
Note: Chair Approval is required.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 596. CSE Capstone Design - CUE** 3 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): Senior Standing, CSE 350, CSE 525 (or concurrently).
Description: This course requires solving a real-world design problem in computer science and engineering. It uses hardware and software design methods and tools learned in previous coursework emphasizing teamwork, written and oral communication.
Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status., CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 602. Graduate Internship in Computer Science and Engineering** 2 Units
Grading Basis: Pass/Fail
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Admission to Graduate Study, Permission of Department Chair, and Permission of Director of Career Services.
Description: Supervised professional experience in industry at the graduate level. This course provides the structure and focus for the graduate intern field assignment to ensure that the assignment is appropriate and consistent with the intern's graduate course of study and professional development. Not to be counted towards meeting the requirements for a degree. May be repeated for credit.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 608. Advanced Design of Operating Systems** 3 Units
Prerequisite(s): CSE 420.
Description: Formal study of algorithms arising in the engineering design of operating systems. Models will be designed and analyzed as to performance measures and optimality. Topics include management protection, security, concurrency, and resource allocation.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 609. Multimedia Processing** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): CSE 302 or consent of instructor.
Description: This course aims to provide a broad introduction of Multimedia representation, encoding/compression, storage, and communication. It covers multimedia standards such as JPEG, H.261, and MPEG. It also aims to provide an experience with the use, integration, and content-based indexing and retrieval of audio, image, video, and textual sources for some multimedia applications and services.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 611. Computer Architecture** 3 Units
Prerequisite(s): CSE 510, CSE 525, ECE 510, ECE 516 or equivalent.
Description: This course will provide in-depth exposure to advanced topics in computer architecture. The emphasis on studying and analyzing fundamental issues in computer architecture design and their impact on performance. Course topics include performance measurements; ISA; memory hierarchy design and cache memory; advanced pipelining; and advanced computer structures for instruction-level parallelism, instruction scheduling, data-level parallelism, and thread-level parallelism.
Note: Cross-listed with ECE 611.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- CSE 613. Network Security** 3 Units
Prerequisite(s): CSE 516.
Description: This course provides basic knowledge and understanding of network security and vulnerability. The course also examines the internal mechanisms of various attacks and possible protection. Class participation, lab work, team projects, writing, and oral presentations will be integral components of the course.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 617. Mobile Computing** 3 Units
Prerequisite(s): CSE 516.
Description: Mobile communication and computing concepts, and related software development. Internal mechanisms by which mobile communication networks provide data transfer service for attached devices. Architecture of ad hoc networks and related protocols.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 619. Design and Analysis of Computer Algorithms** 3 Units
Prerequisite(s): CSE 310 and IE 360.
Description: This course covers the interrelationship between algorithmic statements, data structures, and computational complexity of computer programs. Algorithms are presented for a number of computer science and engineering applications including graph problems, string matching, dynamic programming, transitive closure, and convolution. The properties of NP-complete problems are introduced.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 620. Combinatorial Optimization and Modern Heuristics** 3 Units
Prerequisite(s): CSE 419 or equivalent.
Description: Combinatorial Optimization and Modern Heuristics presents classical and modern search and optimization concepts, methods, and applications.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 621. Web Mining for E-Commerce and Information Retrieval** 3 Units
Prerequisite(s): CSE 419 or equivalent.
Description: Fundamentals of knowledge discovery in semi-structured/unstructured data with emphasis on the World Wide Web: Web usage, content, and structure mining, applications to personalization, e-commerce, information retrieval, text mining.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 622. Simulation and Modeling of Discrete Systems** 3 Units
Prerequisite(s): IE 360.
Description: Engineering design of simulation languages and simulators, discrete stochastic systems, issues in large scale simulation studies and engineering evaluation methods.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 625. Parallel Programming** 3 Units
Prerequisite(s): CSE 419 or equivalent.
Description: This course will provide an overview of parallel computation and algorithms, and teach basic parallel programming techniques.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 627. Digital Image Processing** 3 Units
Prerequisite(s): CSE 506, or ECE 420, or faculty consent.
Description: A course that surveys basic concepts in image processing and pattern recognition. Topics included are: contrast and edge enhancement, histogram modification, image segmentation, feature extraction, statistical classifiers. Design problems involving computer implementation of algorithms are used extensively.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 628. Computer Graphics** 3 Units
Prerequisite(s): CSE 302.
Description: This course presents an introduction to computer graphics hardware and interactive engineering computer graphics techniques. Topics include engineering computer-aided design, graphics hardware (display processors and displays, hardcopy output devices, input devices), graphics standards and graphical kernel system, graphic object representation and transformation, interaction techniques, and three-dimensional graphics. Hardware graphics options are discussed and used.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 629. Distributed System Design** 3 Units
Prerequisite(s): CSE 420.
Description: This course covers general concepts in the design and implementation of distributed systems, visiting topics in cluster computing, supercomputing, grid computing, and cloud computing. The course is composed of two building blocks: 1) distributing computing models including MPI and MapReduce programming, and 2) distributed storage techniques including networked, parallel, and distributed file systems. Our readings and discussions of research papers will help us understand general approaches to design, implement, and evaluate real distributed systems as well as identify open research problems.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 630. Advanced Databases** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): CSE 535 or consent of instructor.
Description: Object-relational databases; handling of complex types, XML and text in relational databases. NoSQL databases: data models and query languages. Data warehousing: design and implementation, query processing and optimization. Big Data: cluster computing, MapReduce and extensions, advanced analytical databases, distributed query processing.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- CSE 631. Database Security** 3 Units
Prerequisite(s): CSE 535 or consent of instructor.
Description: This course covers basic issues in the field Security for database systems. Topics include Security Architecture, Administration of Users and Password Policies, Database Application Security Models, Virtual Private Databases and Label Based Access Control, Database Auditing Models, and Application Data Auditing. The course contributes to the following ABET goals: written communication, and contains heavy coverage of the following ABET goals: Knowledge of contemporary issues in the field of computer engineering and computer science. The understanding of professional and ethical responsibility in the field of computer engineering and computer science.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 632. Data Mining** 3 Units
Prerequisite(s): IE 360 and CSE 535.
Description: Data mining concepts, methodologies, and techniques, including statistical and fuzzy inference, cluster analysis, artificial neural networks, and genetic algorithms, rule association and decision trees, N-dimensional visualization, Web and text mining, and advanced topics.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 633. Computer Vision** 3 Units
Prerequisite(s): CSE 627 or ECE 618 or consent of instructor.
Description: Review of elementary pattern recognition and image processing; extension to advanced topics in computer vision, such as three-dimensional vision and perception, syntactic pattern recognition, motion, texture, and color vision applications.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 635. Data Mining with Linear Models** 3 Units
Description: This course covers the theory and practice of linear models and mixed models as applied to different types of data.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 639. Advanced Industrial Software for Home Appliances (part A2)** 4.5 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): The student must be participating in the GE Appliance Edison program or employees at GE Appliances enrolled in the CSE program.
Description: This course provides graduate students working in the major home appliance industry with an advanced understanding of industrial software engineering and their application to technologies associated with the design, development, and production of major household appliances such as refrigerators, washers, dryers, cooking products and dishwashers. This course serves as one of the curricular elements for the GE Appliance Edison students and is limited to students participating in this program or employees at GE Appliances enrolled in the CSE program.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 640. Internet Application Design and Development** 3 Units
Prerequisite(s): CSE 220.
Description: This course covers software design and development issues encountered in designing internet applications. Topics are HTML5 and CSS, HTTP and Servlet, JDBC, JSP Programming, Custom Tags and Java Bean, Connection Pooling, Web Application Architecture and Design, The Presentation Tier, The Business Logic Tier, The Persistence Tier, and Web Services.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 641. Medical Imaging Systems** 3 Units
Prerequisite(s): ECE 555 or ECE 618.
Description: Focuses on the foundations of modern medical imaging. Topics include: X-ray generation and X-ray/tissue interactions, projection X-ray imaging, image reconstruction from projections, X-ray CT, MRI, nuclear medicine, SPECT, PET and Ultrasound.
Note: Cross-listed with ECE 641.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 645. Advanced Artificial Intelligence** 3 Units
Prerequisite(s): CSE 545.
Description: Advanced topics in artificial intelligence from current research publications. Oriented toward second year graduate students. Major project required.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 646. Intelligent Systems** 3 Units
Prerequisite(s): CSE 545.
Description: Advanced topics in artificial intelligence and intelligent systems, including machine learning, nontraditional logics, connectionist and evolutionary computing, autonomous robots, and intelligent monitoring and diagnosis of complex systems. A major project is required.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 660. Introduction to Bioinformatics** 3 Units
Prerequisite(s): CSE 302 or CSE 503.
Description: Covers the current state of the art programs designed for sequence alignment, database searching, RNA structure prediction, microarray, sequence analysis, gene prediction, repeat detection, and protein folding prediction. A detailed analysis of the algorithms behind each of these will be explored. The algorithmic techniques discussed will include dynamic programming, hidden Markov models, finite state automata, grammars, Karlin-Altschul statistics and Bayesian statistics.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CSE 690. Master of Science Thesis in Computer Science** 1-6 Units
Description: Experimental and/or theoretical research to be presented in thesis.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CSE 693. Independent Study in Computer Engineering and Computer Science 1-6 Units

Description: Guided study of one or more CSE topics of interest.

Note: Chair Approval is required.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CSE 694. Special Topics in Computer Science and Engineering 1-6 Units

Description: Devoted to topics which usually are not treated in detail in the general course.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CSE 695. Computer Engineering and Computer Science Seminar 1 Unit

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CSE 696. CSE Project 3 Units

Prerequisite(s): Graduate standing in CSE.

Description: Independent design or experimental project in Computer Science and Engineering. Written and verbal reports required. Reports must include literature, speech, experimental methodology, design details, implementation details, test results, conclusions, and references. Verbal reports will be presented at a specified date each semester.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CSE 697. Master of Engineering Thesis in Computer Engineering and Computer Science 1-8 Units

Prerequisite(s): Graduate/Professional standing.

Description: A candidate for the Master of Engineering degree, specializing in the field of Computer Engineering and Computer Science, is required to perform a study, design, or investigation under the direction of a faculty member. A written dissertation is required to be presented and defended orally and submitted to the faculty for approval.

Note: This course may be repeated for a maximum total of eight semester hours.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CSE 790. Special Topics in Computer Science & Engineering 1-6 Units

Description: Devoted to advanced topics that are not treated in the general courses. Topics will be announced in the Schedule of Courses.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CSE 795. CSE Seminar 1-4 Units

Grading Basis: Pass/Fail

Description: Seminar in Computer Science & Engineering

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CSE 796. Independent Study in Computer Science & Engineering 1-6 Units

Prerequisite(s): Consent of advisor.

Description: Opportunity for the student, under the supervision of a sponsoring faculty member, to pursue individualized study related to research or practice that is not included in regular courses in the curriculum.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CSE 799. Dissertation Research 1-24 Units

Prerequisite(s): Consent of advisor.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Criminal Justice (CJ)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

CJ 500. Crime and Criminal Justice in the Cinema 3 Units

Prerequisite(s): Senior standing.

Description: This course examines media representations of the criminal justice system in historical context and with global perspective to show the congruence and disparities between popular film and reality.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CJ 505. International Terrorism 3 Units

Term Typically Offered: Occasionally Offered

Description: Investigation of international terrorism and terrorist organizations, focusing on causes, operations, organization, funding, threats and futures. Biological, chemical, nuclear and cyberspace terrorism are explored. Features of the impact of the media on terrorism, counter-terrorism, use of technology and prevention.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- CJ 507. Crime Prevention Through Environmental Design** 3 Units
Description: Introduction to the concept of Crime Prevention Through Environmental Design (CPTED). Emphasis will be placed on opportunity theories of crime and their application as well as means through which crime can be prevented using the built environment to reduced crime opportunity.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 509. Crime Analysis** 3 Units
Description: Crime analysis is a fairly new topic in criminal justice education. This course provides students with an opportunity to apply theory to crime data while learning introductory techniques of crime analysis and mapping.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 510. Managing Conflict, Change and Justice** 3 Units
Term Typically Offered: Occasionally Offered
Description: Students will be introduced to the interpersonal and social nature of conflict and the practices and skills associated with conflict resolution. By analyzing the human nature and dynamics of both interpersonal and social conflicts, students will develop an awareness of the integral role the conflict management process plays in nurturing the attributes (is relationship building, equity, fairness & peace) of conflict resolution.
Note: Cross-listed with SCHG 510.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 516. Juvenile Justice Issues** 3 Units
Description: An interdisciplinary seminar. Focuses on issues pertinent to the criminal justice system that reflect conflicting perspectives. This course covers the juvenile justice system and related juvenile issues. Topics include an overview of the juvenile justice system, treatment and prevention programs, special areas and laws unique to juveniles, and other related topics.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 517. Gangs in America** 3 Units
Description: One of the main purposes of this course is to examine one of the most polarizing, difficult to research topics in Criminal Justice: Gangs. By exploring these dynamics and connections, the course will address the history, research, legislation, and policy implications related to Gangs, and the criminal justice system's response to Gangs. This course is divided into four points: 1) Defining Gangs and the Historical Perspective of Gangs, 2) Theoretical Basis of Gangs and Gang Involvement, 3) Current Gang Trends, and 4) Gang Prevention/ Intervention.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 519. Domestic and Family Violence** 3 Units
Description: A course addressing issues relating to family violence, includes examination of partner abuse, child abuse, and elder abuse throughout the life-course.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 520. Capital Punishment - WR** 3 Units
Term Typically Offered: Occasionally Offered
Prerequisite(s): Senior standing or consent of instructor.
Description: Seminar of issues related to the death penalty, including: constitutional questions, the effect of death row incarceration, and public attitudes toward the death penalty. Research on Kentucky will be featured.
Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 521. White Collar Crime - WR** 3 Units
Term Typically Offered: Occasionally Offered
Prerequisite(s): CJ 200 and CJ 305, or consent of instructor.
Description: A study of white collar and occupational crime. Course will focus on the concept, theoretical explanations, the extent and nature of various types of white collar and occupational crime in both public and private sectors.
Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 522. Serial & Mass Murder** 3 Units
Term Typically Offered: Occasionally Offered
Prerequisite(s): Senior standing or consent of instructor.
Description: Examination of serial murder and mass murder in the United States. Topics include serial murder and its relation to race and gender; the media and serial murder; and profiling. Mass murders, in which victims are killed within a few moments or hours, will also be examined. Topics include mass murder's impact on communities; political and religious ideologies; specific institutions victimized by mass murder; and political, community, and law enforcement responses.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 523. Race and Gender Issues in Criminal Justice - WR** 3 Units
Term Typically Offered: Occasionally Offered
Prerequisite(s): Junior standing or consent of faculty.
Description: This course will study the dynamics of racial discrimination and racial disparity in the U.S. and how it affects the criminal justice system.
Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- CJ 530. Intro to Homeland Security** 3 Units
Term Typically Offered: Occasionally Offered
Description: This course outlines the philosophy, purpose, and rationale for a separate governmental agency whose primary mission is focusing on domestic security. This course will also examine issues related to international and domestic terrorism and their effect(s) on trends in homeland security.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 531. Covert Operations in Policing** 3 Units
Description: This course is an introduction to intelligence in policing and law enforcement with an emphasis on three key topics: 1) developing awareness and understanding of human intelligence (HUMINT) as a primary means of collecting information required to develop intelligence for solving, predicting, and hindering crime & criminal behavior; 2) developing skills in selecting and using analytical tools used by law enforcement intelligence and crime analysts: association and activities matrices, link analysis diagrams, social network analysis, pattern wheel analysis, mind mapping, concept map, and others; and 3) understanding the critical role of planning in law enforcement and the relationship between planning, operations and intelligence.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 576. Managing Organizational Performance** 3 Units
Prerequisite(s): Consent of department chair.
Description: Examination of factors affecting the management of organizational performance. Designed to help participants develop conceptual diagnostic and problem solving skills required of strategic managers in contemporary law enforcement organizations.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 577. Trauma Informed Policing** 3 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): Restricted to students enrolled in the Southern Police Institute's Administrative Officers Course.
Description: Trauma informed policing focuses on how law enforcement can improve police community interactions, service to the public, and internal operations through adopting a trauma informed approach. This course will discuss evidence-based methods to recognize, understand, and appropriately respond to trauma experienced by victims, offenders, and police officers.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 578. Criminal Justice Leadership - WR** 3 Units
Description: Through the use of lectures and case studies (films), participants will be provided with a cognitive understanding of leadership that emphasizes the study of leadership models and theories. Study and evaluation of various leadership styles and processes.
Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 580. International Service Learning: Criminal Justice Seminar** 3 Units
Prerequisite(s): Approval of program director.
Description: Study of criminology and criminal justice with a cross cultural perspective. Comparative criminal justice research regarding particular problems and issues in the host country will be conducted and examined.
Note: Travel outside the United States is required.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 596. Seminar in Criminal Justice** 3 Units
Term Typically Offered: Fall, Spring, Summer
Description: An interdisciplinary seminar. Focuses on issues pertinent to the criminal justice system that reflect conflicting perspectives.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 597. Ethics in Criminal Justice - WR** 3 Units
Term Typically Offered: Occasionally Offered
Prerequisite(s): Senior standing or consent of instructor.
Description: A study of the need for ethics in criminal justice. The aims of ethics, ethical theories, ethical issues related to law making, law breaking and law enforcement.
Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 602. Criminal Justice History** 3 Units
Description: A study of the historical development of criminal justice agencies in the United States. The origin and influence of various European concepts of criminal justice and how they relate to past and present ideas in the United States.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 605. Police and Society** 3 Units
Description: An examination of the police function as a component of the political system in the United States. The manner in which police give substance to the political system and are formed by it in turn. The interaction of the police with other governmental institutions in the political system.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 606. Personnel Management in the Criminal Justice System** 3 Units
Description: Focus is on contemporary personnel management problems confronting agencies in the criminal justice system. Both the historical and the theoretical developments of personnel management are analyzed. Alternatives to current management procedures and systems are presented.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- CJ 607. Seminar in Law and Justice** 3 Units
Description: Study of the premises, theories and research in the study of the relationship between law, society and justice. Emphasis is on the classics as well as selected modern and contemporary research. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 609. Economic Analysis of Crime** 3 Units
Description: A study of the economic scope of crime. The role of illegal gambling, loan sharking, labor racketeering, and legitimate business infiltration. The cost of crimes against property. The economic characteristic of high crime jurisdictions. Preventive programs and their costs. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 610. Theoretical Foundation of Corrections** 3 Units
Description: A study of the psychological, sociological, political, and economic factors which contributed to the concept of corrections. The evolution of correctional thought and its role in contemporary and future reforms. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 611. Critical Issues in Corrections** 3 Units
Description: In-depth examination of contemporary issues in sentencing and corrections in our society. Particular emphasis will be given to best practices: recent policies and programs that have been developed to enhance the effectiveness and efficiency of sentencing and corrections within our society. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 612. Criminal Justice Administration: Police** 3 Units
Description: An examination of the functions of police in society; principles of law enforcement organizations, administration, policy formulation, and management of personnel; statutory limitations on authority and jurisdiction. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 613. Advanced Comparative Criminal Justice** 3 Units
Description: In-depth examination of international legal systems and their related criminal justice systems including analysis of patterns of international crime and global criminal justice issues. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 614. Seminar in Policing** 3 Units
Description: In-depth examination of contemporary issues facing police in our society. Particular emphasis will be given to police innovation: recent policies and programs that have been developed to enhance the police function of crime prevention (societal protection) and community relations (service). For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 621. The Criminal Justice System** 3 Units
Description: A study of the criminal justice system in the United States. A systems approach to the study of criminal justice and the interrelationships of the various components of the system. Social and political issues related to the criminal justice system are examined in depth. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 625. Legal Aspects of Criminal Justice Management** 3 Units
Description: Examination of the legal issues within criminal justice management, the effects of constitutional provisions, statutes, ordinances, and judicial decisions on justice administration. A discussion of the legal aspects of selection, promotion, assignment, and termination of justice employees. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 626. Emergency Management** 3 Units
Description: This course is an overview of emergency management in the United States and will focus on the four phases of the emergency management process: mitigation, preparedness, response and recovery. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 627. Computer and Cyber Crime** 3 Units
Description: This course examines advanced legal, policy and technical issues of computer, digital and electronic crime, including issues with digital & computational forensics, information security and privacy. Class participation, writing and oral presentations will be integral components of the course. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 630. Critical Infrastructure Protection and Resilience** 3 Units
Description: This course will address U.S. key infrastructures and assets, potential threats to these, their major vulnerabilities, methods used to assess these vulnerabilities and current U.S. policy pertaining to infrastructure and asset protection. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 643. Theories of Crime and Delinquency** 3 Units
Description: A study of the psychological and sociological factors involved in criminal and delinquent behavior. The relationship of theory to the prevention and control of crime, treatment of offenders and administration of respective criminal justice agencies. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 644. Seminar in Juvenile Justice** 3 Units
Description: Theoretical and empirical study of the etiology, distribution and extent of delinquency; problems involved in measuring delinquency; role of the police, courts and legal statutes; critical examination of treatment and prevention programs. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- CJ 649. Applied Statistics in Criminal Justice** 3 Units
Description: Focuses on the use of statistical techniques in criminal justice. Emphasis on the application and interpretation of the statistics. Utilization of statistical application computer systems.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 650. Research Methods** 3 Units
Description: The application of quantitative and qualitative analyses in criminal justice research. The concepts of validity, hypothesis, reliability, measurement, sampling, quasi-experimental construction, errors in reasoning, and statistics and approaches to the problems of the conduct of stringent and useful research.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 652. Constitutional Issues in Criminal Justice** 3 Units
Prerequisite(s): CJ 625 or instructor consent.
Description: An in depth study of the US Constitution and US Supreme Court including history, structure and application of Constitutional rights and privileges.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 653. Communities and Crime** 3 Units
Description: This course explores community-level theory and research within criminology. We will trace the development of community-level criminological theory and research from the work of Shaw and McKay to the work of contemporary scholars. Our tracing of this development will involve exploration of theoretical and methodological issues such as: the conceptualization and measurement of social disorganization, structural versus cultural effects in community models, social versus physical environmental effects, the role of community disorder in community crime models, the role of fear in community crime models, macro-level interactions within community-level models of crime, and use of theoretical integration and multi-level models in community crime research.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 655. International Perspectives on Violence** 3 Units
Description: The course will discuss violence as a global phenomenon and will attempt to determine what is universal and what varies when cross-cultural comparisons of violent criminal behavior are made. In addition, the course will focus on the effects of globalization on the criminal justice field and will discuss important issues related to international crime, international law, and international law enforcement.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 656. Crime Mapping** 3 Units
Description: This course will investigate theories, concepts, principles, and tools involved in better understanding crime incidents and crime patterns. Included will be weekly lab work following step-by-step tutorials that will provide students with a working knowledge of mapping software. Analyzing and interpreting a high-frequency Louisville crime problem and identifying police-based crime prevention techniques from the literature will be the subject of a final research project.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 665. Special Topics in Justice and Criminology** 3 Units
Description: Study of contemporary issues concerning the philosophy, management, and operations of criminal justice agencies.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 670. Directed Studies/Readings** 3 Units
Prerequisite(s): Consent of chair and instructor.
Description: Independent study or research project under the direction of a member of the faculty.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 690. Practicum** 1-6 Units
Prerequisite(s): Consent of chair.
Description: To practice and to conduct research in a criminal justice or supporting agency under both professional and academic supervisors.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 698. Professional Paper - WR** 3 Units
Prerequisite(s): Consent of chair.
Description: The professional paper should reflect substantial research (of secondary sources) that analyzes a policy or problem in the criminal justice system. The paper must review existing literature (journal articles and reports) and demonstrate a thorough subject analysis. The paper will be reviewed by the assigned faculty member, revised by the student, and reflect graduate-level analysis.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 699. Thesis** 1-6 Units
Prerequisite(s): Consent of chair.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- CJ 703. Criminal Justice System Planning** 3 Units
Description: Overview of planning theory, techniques and strategies within the criminal justice system.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CJ 740. Seminar in Crime Prevention and Social Control 3 Units**Prerequisite(s):** Consent of instructor.**Description:** Study of the history, theory and practice of crime prevention and social control.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**CJ 745. Advanced Criminal Behavior 3 Units****Description:** Advanced study of various theoretical perspectives in the study of crime, criminal behavior and criminal justice.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**CJ 748. Seminar in Criminal Justice Program Planning & Evaluation 3 Units****Prerequisite(s):** Restricted to doctoral students.**Description:** This course features: an introduction to the theory and practice of criminal justice planning, their strengths and weaknesses, the application of social scientific research methods to determine the effectiveness of criminal justice programs, analysis of reports of evaluative research and the preparation and analysis of evaluation research reports.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**CJ 749. Advanced Statistical Analysis in Criminal Justice 3 Units****Description:** In-depth analysis of logic and uses of advanced research methods. Emphasis will be given to the use of quantitative research techniques, fundamentals, and perspectives of modern statistical techniques used in criminal justice research.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**CJ 750. Field Research in Criminal Justice 3 Units****Description:** Development of expertise in understanding, planning, conducting and evaluating qualitative research methodologies. Special attention will be given to applying data collection and analysis techniques to social science investigations of crime and criminal justice processes.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**CJ 751. Advanced Statistical Computer Applications for Criminal Justice 3 Units****Description:** The study of advanced statistical computer applications for research within criminal justice.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**CJ 752. Advanced Research Methods in Criminal Justice 3 Units****Description:** Research methods used in the analysis of criminal justice research. Quantitative and qualitative techniques, experimental and quasi-experimental design, data sources in the public sector, the use of data bases in the development and implementation of criminal justice evaluation.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**CJ 795. Criminal Justice Qualifying Project 3-6 Units****Prerequisite(s):** Completion of CJ PhD core curriculum; doctoral students only.**Description:** Analysis of qualitative or quantitative data set and production of a manuscript suitable for publication.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**CJ 798. Mentored Research in Criminal Justice 1-3 Units****Description:** Independent research project conducted under the guidance of and in collaboration with a member of the Justice Administration research faculty.**Note:** May be repeated for a maximum of six hours.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**CJ 799. Dissertation Research in Criminal Justice 1-12 Units****Description:** Dissertation research project under the direction of faculty committee.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Critical and Curatorial Studies (CCS)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

CCS 547. Introduction to Critical and Curatorial Studies I 3 Units**Prerequisite(s):** Consent of instructor.**Description:** An introduction to curatorial practice of the last 30 years. Focusing on the curator's increasingly prominent role in the reception and synthesis of contemporary art, the course explores developments in exhibition design in terms of art production, international exchange, globalization, and critical theory.**Note:** Cross-listed with ARTH 547.**Note:** A student may receive credit for only one of the courses: ARTH 547, CCS 547, ARTH 647, CCS 647.**Note:** Formerly Museum Methods I.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CCS 548. Critical and Curatorial Studies II **3 Units**

Prerequisite(s): ARTH 547, or CCS 547, or ARTH 647, or CCS 647, or consent of instructor.

Description: This seminar is structured as a curatorial practicum. Students work with the professor to develop and produce an exhibition from the university's print collection. Throughout the semester, weekly readings and presentations focus on contemporary exhibition practice as well as on the theoretical and critical concerns undergirding the student's developing exhibition.

Note: Cross-listed with ARTH 548.

Note: A student may receive credit for only one of the following courses: ARTH 548, ARTH 648, CCS 548 and CCS 648.

Note: Formerly taught as Museum Methods II.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CCS 600. Graduate Seminar **1 Unit**

Grading Basis: Pass/Fail

Prerequisite(s): Graduate standing.

Fee: An additional \$75.00 is charged for this course.

Description: Reports, critiques, presentations and discussions on personal research and current topics in visual arts.

Note: Cross-listed with ART 600 and ARTH 600.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CCS 643. Independent Study **1-3 Units**

Prerequisite(s): Consent of instructor.

Description: Opportunity for the student, under the supervision of a sponsoring faculty member, to pursue individualized study related to research or practice that is not included in regular courses in the curriculum. Credit according to achievement.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CCS 645. Thesis Guidance **3 Units**

Description: Thesis research/preparation under guidance of a faculty member.

Note: Can be repeated up to two times for a total of six credits for students enrolled in the dual MPA-MA Art & Art History Critical and Curatorial Studies program.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CCS 646. Topics in Curatorial Studies **1-3 Units**

Prerequisite(s): Consent of instructor.

Description: Advanced study on selected topics in Critical and Curatorial Studies.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CCS 647. Introduction to Critical and Curatorial Studies I **3 Units**

Prerequisite(s): Consent of instructor.

Description: An introduction to curatorial practice of the last 30 years. Focusing on the curator's increasingly prominent role in the reception and synthesis of contemporary art, the course explores developments in exhibition design in terms of art production, international exchange, globalization, and critical theory.

Note: A student may only receive credit for only one of the courses: ARTH 547, CCS 547, ARTH 647, CCS 647.

Note: Cross-listed with ARTH 647.

Note: Formerly Topics in Curatorial Studies.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CCS 648. Critical and Curatorial Studies II **3 Units**

Prerequisite(s): ARTH 547, or CCS 547, or ARTH 647, or CCS 647, or consent of instructor.

Description: This seminar is structured as a curatorial practicum. Students work with the professor to develop and produce an exhibition from the university's print collection. Throughout the semester, weekly readings and presentations focus on contemporary exhibition practice as well as on the theoretical and critical concerns undergirding the student's developing exhibition.

Note: Cross-listed with ARTH 648.

Note: A student may receive credit for only one of the following courses: ARTH 548, ARTH 648, CCS 548, and CCS 648.

Note: Formerly taught as Museum Methods II.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

CCS 649. Curatorial Internship **1-3 Units**

Prerequisite(s): Consent of instructor and appropriate institution partner.

Description: Development and application of advanced curatorial knowledge, skills, and practices through mentored practical application in a museum work environment. (Institutions such as: Speed Art Museum, University Art Collection and Galleries, or other local, regional, or national institutions.)

Note: May be repeated up to 9 hours toward MA degree.

Note: Formerly ARTH 649.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Distilled Spirits Business (SPIR)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

SPIR 610. Distilled Spirits Industry Overview & Regulatory Issues**1.5 Units****Term Typically Offered:** Fall, Spring

Description: Students will be introduced to an overview of the distilled spirits industry, covering industry outlook, economic impact, and key historical development. Students also will learn about key regulatory agencies and the regulations governing the industry, including spirits formulary, permits, labeling, advertising, and trademark.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SPIR 620. Distilled Spirits Finance Fundamentals**1.5 Units****Term Typically Offered:** Fall, Spring

Description: Students will be exposed to the finance fundamentals of the distilled spirits industry. They will learn how to project sales (including volume and pricing, distributor incentives, and marketing and promotion budgets). The course will also cover competitor price analysis, working capital, cost of production, and simple tax calculations.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SPIR 630. Distilled Spirits Operations & Supply Chain**1.5 Units****Term Typically Offered:** Fall, Spring

Description: Students will get an overview of the operations functions of the distilled spirits industry. They will be exposed to and apply critical elements of planning, sourcing, producing, and distributing spirits

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SPIR 640. Sustainability in the Distilled Spirits Industry**1.5 Units****Term Typically Offered:** Fall, Spring

Description: Students will learn about the broad array of sustainability issues in the distilled spirits industry and how they are essential to corporate social responsibility initiatives. Key topics include water, grain sources, barrel use (including forestry), energy, spent grains, and emissions.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SPIR 650. Spirit Brand Marketing**1.5 Units****Term Typically Offered:** Fall, Spring

Description: Students will be introduced to and apply marketing principles driving the creation of a brand. Special attention will be paid to product differentiation, on-premise and off-premise markets, and responsible marketing.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SPIR 660. Three-Tier System of Alcohol Distribution**1.5 Units****Term Typically Offered:** Fall, Spring

Description: Students will get a broad overview of how the three-tier system operates as the route to market. Special attention will be focused on the distributor, which is the critical link between suppliers and consumer.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Doctoral Candidacy (DOCT)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

DOCT 600. Doctoral Candidacy**0 Units****Grading Basis:** Pass/Fail**Description:** Doctoral Candidacy (full-time status).

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Economics (ECON)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

ECON 500. Foundations of Economics **3 Units**
Prerequisite(s): Consent of instructor.
Description: Survey of supply and demand analysis, cost and production, and price determination in different market organizations. Analysis of GDP, unemployment, inflation, and economic growth.
Note: Cross-listed with PLAN 500.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECON 605. Urban Economics **3 Units**
Prerequisite(s): PLAN 500 and ECON 500, or consent of instructor.
Description: Application of economic theory to urban policy issues including metropolitan development and job creation, poverty, crime, transportation, environment, spatial structure, and other issues.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECON 620. Economic Conditions and Forecasting **3 Units**
Prerequisite(s): ECON 600 or ECON 605.
Description: Develops quantitative tools for the analysis and forecasting of economic phenomena. Both structural & time models are presented. Basic Econometric methods are used to fit models and evaluate their forecasting properties.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECON 640. Public Finance **3 Units**
Prerequisite(s): ECON 500.
Description: The theories and principles of taxation, the economic impact of different taxes, the public debt, and fiscal policy are discussed. Taxation of the business firm is also discussed.
Note: Cross-listed with UPA 646.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECON 644. Health Economics **3 Units**
Description: Examines health care issues by applying microeconomic theory. Particular emphasis on health insurance, managed care, health care production, and physician services.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECON 650. Macroeconomic Theory **3 Units**
Prerequisite(s): ECON 500 and elementary calculus.
Description: Aggregate income and employment theory. Classical and Keynesian models; monetary and fiscal policy; the theory of growth and cycles.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECON 660. Microeconomic Theory **3 Units**
Prerequisite(s): ECON 500.
Description: A thorough examination of the theory of household and firm. Determination of price under different market structures.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECON 680. Special Topics in Economics **1-6 Units**
Description: An advanced study of one or more selected topics or issues related to the study of Economics.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECON 698. Research Seminar in Economics **1-3 Units**
Prerequisite(s): One 600-level economics course and permission of the departmental chair.
Description: Topics vary by semester.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Education: Advanced Practitioner (EDAP)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

EDAP 510. Special Topics in Instruction **3 Units**
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDAP 511. Reading and Writing in Content Areas **3 Units**
Prerequisite(s): 12 hours in education or psychology, or consent of instructor.
Description: A comparison of the developmental and remedial reader at the middle and secondary levels, with emphasis on developing instructional strategies, materials, and programs in middle and secondary content areas.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- EDAP 518. Survey of Linguistics for Educators** 3 Units
Term Typically Offered: Occasionally Offered
Description: This course is a survey of both the theoretical and applied aspects of Linguistics. This is not an in-depth exploration of single-topic in the field of Linguistics but rather, a course designed to introduce students to the discipline of linguistics, especially those who are classroom educators. This course serves to introduce students to aspects of theoretical linguistics (phonology, morphology, syntax, semantics, and pragmatics, L1 & L2 acquisition) and explore various aspects of applied linguistics (Sociolinguistics, Linguistic Anthropology, English Language Learners). This course will encourage students to think critically about language and its use and apply the theoretical aspects of linguistics in a way that informs best practices.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 521. Teaching English Learners in the Classroom** 3 Units
Description: A focus on strategies for working effectively with English learners and their families by teachers in P-12 classrooms.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 525. World Englishes** 3 Units
Prerequisite(s): EDAP 518 (or concurrently).
Description: Exploring the historical, social, and political contexts of the discipline of World Englishes. Topics such as language standardization, the internationalization of English, and challenges of teaching and testing of English as an international language will be discussed.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 530. Language, Society & Power** 3 Units
Prerequisite(s): EDAP 518 (or concurrently).
Description: Exploring the intersection of language and culture by challenging students to think critically about language and culture and the impact of both across ages, genders, social classes, ethnicities, and personal identities.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 535. Teaching English as an International Language** 3 Units
Term Typically Offered: Occasionally Offered
Prerequisite(s): EDAP 518 (or concurrently) or permission of the ESL program coordinator.
Description: This course will introduce students to the theoretical construct and practical consideration of teaching English overseas. It necessarily assumes English language teaching is an activity infused with social and political implications. By providing a theoretical construct as the course platform, the course will explore the roles of teachers and learners, the context of curricula, and the choice of methodology to reflect the cultural values of teaching English in an international setting.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 536. Theories of Play** 3 Units
Prerequisite(s): Graduate status.
Description: This course offers knowledge about how play contributes to young children's development and learning.
Note: Cross-listed with EDSP 436.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 540. Teaching Adolescent Readers** 3 Units
Description: Examines active reading processes, instructional strategies, and appropriate adolescent literature for teaching both the developmental and the remedial reader in secondary language arts.
Note: Cross-listed with EDTP 540.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 541. Middle-Level Learner** 3 Units
Description: The course is designed for practicing teachers in middle school or preparing to teach in middle school. The course is an in-depth study of the philosophical approach to educating young adolescent learners. The course will focus on the developmental issues and curricular concepts related to teaching at the middle-level.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 546. Mathematical Reasoning in K-12** 3 Units
Term Typically Offered: Spring Only
Description: This course examines mathematical processes and practices that define mathematical proficiency and explores instructional practices to ensure students develop mathematical competence and confidence.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 582. Teaching Gifted Students in the Regular Classroom** 3 Units
Description: Introduction to the nature and needs of gifted, talented, and creative children in K-12 classrooms, ways to meet these needs, and ways to increase gifted behaviors in a greater number of children than those already identified.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 585. Introduction to Educational Technology: Integrating Technology into Instruction** 3 Units
Term Typically Offered: Occasionally Offered
Description: Develop a skill base in using and critically evaluating the usefulness, validity, and viability of instructional technologies appropriate for use in the P-12 classroom.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- EDAP 587. Teaching and Learning Online** 3 Units
Description: This course is designed to help students actively explore multiple and varied ways to use online tools and resources to support learning in P-12 and higher education contexts.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 590. Teacher Institute on African-American Issues** 3 Units
Description: An introduction to Pan-African Studies focusing on multicultural educational strategies for public school educators.
Note: Cross-listed with PAS 529.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 591. Survey of African History and Culture for Teachers** 3 Units
Description: An intensive survey of the history and culture of Africa (to 1600) for teachers.
Note: Cross-listed with PAS 530.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 592. Survey of African-American History and Culture for Teachers** 3 Units
Description: An intensive survey of the history and culture of African Americans for teachers.
Note: Cross-listed with PAS 531.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 596. Seminar in Elementary Education** 1-4 Units
Description: The investigation of special problems in education.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 597. Seminar in Elementary Education** 1-4 Units
Description: The investigation of special problems in education.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 601. Teaching with Emerging Technologies** 3 Units
Description: Design, explore and research the usefulness, validity, and viability of emerging technologies affecting student achievement in the P-12 classroom.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 603. The Foxfire Approach to Teaching** 3 Units
Description: Provides a thorough working knowledge of philosophy and pedagogy found in the Foxfire approach, a learner-centered approach to classrooms. Prepares teachers at all levels to articulate, accept as valuable, and begin to develop the skills necessary to implement the eleven core practices of the Foxfire approach. Designed for teachers of children grades K-12.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 604. Special Problems or Field Experience in Curriculum Development** 3 Units
Description: Intensive study in a current problem in an area of curriculum development or curriculum construction.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 605. Action Research for Classroom Teachers** 3 Units
Grading Basis: Pass/Fail
Description: Involves teachers in identifying questions about their own teaching and classroom situations, developing research methods appropriate for addressing those questions, and conducting a classroom-based study. Pass/Fail only.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 606. Orientation and Readings** 3 Units
Prerequisite(s): Admission to the MEd Program.
Description: Read, discuss and write about current literature related to the key Program Concepts within discipline specific fields as well as across content areas, and develop a well-designed research study. Goals and themes of the program will be studied. Students will investigate the literature base supporting the overarching concept of the program: Teaching for Knowledge, Leadership and Change: Enabling Success for All Learners.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 608. Integrated Thematic Units** 3 Units
Description: Enables participants to design units integrating several disciplines around an appropriate theme in ways that are appropriate for a diverse group of students.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 610. Literacy Research & Theory** 3 Units
Prerequisite(s): 12 hours in education, to include one introductory course in the teaching of reading.
Description: An advanced course in reading instruction providing an intensive analysis of current research in the theories and strategies of teaching in the elementary, middle or secondary level.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 611. Innovation and Leadership in Teaching** 3 Units
Description: A study of methods of integrating mathematics, writing, and technology. Participants will work with children in a camp-like setting.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- EDAP 612. Louisville Writing Project** 1-6 Units
Term Typically Offered: Fall, Spring, Summer
Description: LWP is a year-long program aimed at improvement of writing instruction at all levels. It focuses on teacher as writer, as inquirer, and as instructional leader. LWP involves an intensive multi-week workshop as well as follow-up leadership and action research activities during the academic year.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 614. Supporting Struggling Readers and Writers K-12** 3 Units
Prerequisite(s): One basic course on the teaching of reading and writing.
Description: Addresses the needs of teachers who work with students who have not learned to be fluent, eager and effective readers and writers. Focuses development of literacy concepts that define, support, keep flexible literacy skills.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 615. Measurement and Diagnosis of Literacy** 3 Units
Prerequisite(s): EDAP 610.
Description: An introduction to diagnostic concepts in reading, with an emphasis on screening instruments, materials, and tutoring procedures.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 618. Capstone Practicum in Literacy: Reading Specialist** 3 Units
Prerequisite(s): EDAP 639, EDAP 610, and EDAP 614.
Description: Supervised internship providing for analysis and refinement of assessment and instruction practices in reading. Settings determined with pupil consultation.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 619. Environmental Education Institute: The Study of Rural and Urban Watersheds** 3 Units
Description: Using a watershed as the focus, this course will examine the impact people have on the environment. Through field trips, community speakers, individual and group research, the students will document the aesthetic, cultural and ecological aspects of a watershed. Participants in the course will be able to use the approach modeled in the course with their students on any watershed.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 620. Introduction to Teaching Elementary Mathematics Education** 3 Units
Description: An investigation of trends, learning theories, instructional activities, and manipulative materials applicable to mathematics education in the elementary school.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 621. Advanced Methods for Teaching Elementary Mathematics** 3 Units
Prerequisite(s): A course in teaching elementary mathematics.
Description: An advanced course investigating trends, learning theories, instructional activities, and manipulative materials applicable to mathematics education in the elementary school.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 622. Assessment and Instruction in Mathematics Education** 3 Units
Prerequisite(s): EDAP 620 or EDAP 621 or consent of instructor.
Description: A study of methods for assessing students' knowledge and ability in mathematics, and of instructional strategies for increasing students' knowledge and ability in mathematics.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 623. Integrating Mathematics with Other Content Areas** 3 Units
Description: An investigation of theories, methods, and materials for integrating mathematics with other content areas. Content areas may vary.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 624. Curriculum Theory** 3 Units
Prerequisite(s): Admission to the MEd program.
Description: Study of significant curriculum theories as they relate to American schooling historically and today. While primarily an opportunity for exploring theory and philosophy of curriculum, students will be encouraged to link theory to practice.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 625. Social and Ethical Development in Teaching** 3 Units
Description: Study of theoretical and practical constructs that foster caring and integration of children's and adolescents' intellectual, ethical, and social development in the classrooms.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 626. Critical Diversity Readings in Education** 3 Units
Term Typically Offered: Occasionally Offered
Description: Extends the principles of diversity, equity, and advocacy. Builds upon the historical, sociological, and philosophical foundations of multicultural education using critical theories to explore texts and further discussions of diversity.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 628. Kentucky Institute for Arts in Education** 3 Units
Grading Basis: Pass/Fail
Description: Kentucky Institute for Arts in Education is a two week course designed to provide participants with hands-on experience in dance/movement, drama, music, visual art and creative writing.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- EDAP 629. Teaching Mathematics with Technology** 3 Units
Description: Focuses on using technology as a tool in the teaching of mathematics in elementary and middle school.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 630. Theories of Child Development** 3 Units
Description: Analysis and comparison of psychoanalytic, cognitive behavioral perspectives of child development. Traces growth and development of children 0-12 years as the foundation for curriculum development.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 633. Advanced Curriculum and Methods in Early Childhood Special Education** 3 Units
Prerequisite(s): Admission to Teacher Education.
Description: Explores early childhood models, strategies, and materials appropriate for use with children with special needs.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 635. Administration and Consultations: Day Care and Early Childhood Education** 3 Units
Prerequisite(s): Admission to Teacher Education.
Description: Explores the responsibilities of the day care or early childhood director and the early childhood consultant.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 636. Advanced Reading Methods P-12** 3 Units
Description: This course addresses knowledge and implementation of research-based reading methods appropriate for preschool through secondary students, with an emphasis on developing skillful and strategic lifelong readers. Concepts from the course will be applied in P-12 through required field experience.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 637. Using Assessment to Improve Student Achievement** 3 Units
Description: Addresses knowledge and implementation of assessment concepts, methods of analyzing various types of student achievement data, and planning and implementation of appropriate instruction and interventions for diverse learners.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 638. Instructional Strategies for Diverse Learners** 3 Units
Description: Investigation of differentiated, culturally relevant instructional strategies and materials to improve and manage instruction while integrating technology-enhanced practices to meet the needs of diverse learners in the 21st century.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 639. Education Research in P-12 Setting** 3 Units
Description: Analysis of research in education relative to methodology and current research efforts in the field. Consideration given to understanding research design and the reading of research studies.
Note: Cross-listed with EDSP 639.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 640. Cognitive Coaching** 3 Units
Description: Addresses the advanced knowledge, skills, and dispositions needed for teachers involved in coaching and/or mentoring relationships. The focus will be on using Cognitive Coaching to support reflective, self-directed teachers.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 641. Literacy Leadership and School-Wide Planning** 3 Units
Prerequisite(s): EDAP 610, EDAP 639, EDAP 614, and EDAP 615.
Description: Addresses teacher literacy leadership, including the role of the reading specialist/literacy coach, professional development techniques, using data for school literacy improvement, and developing school community and family literacy partnerships.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 642. Literacy Learning and Cultural Differences** 3 Units
Description: Explores the current knowledge base and theoretical frameworks used to explain differential achievement rates between students of diverse cultural, ethnic, and linguistic backgrounds.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 644. Reading/Writing Workshop: Using Children's Literature to Empower Readers and Writers K-12** 3 Units
Prerequisite(s): Preservice course in literacy or consent of instructor.
Description: Students experience the workshop approach to teach writing and create passion for literacy, learning about writers' sketch notebooks, using writings of exceptional authors, creating community that fosters risk-taking and critical thinking, and integrating the arts.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 645. Advanced Studies of Children's Literature** 3 Units
Prerequisite(s): Previous undergraduate language arts/literature course or permission of instructor.
Description: Explores literature available for preschool through 8th grade; studies the role of literature in child development and curriculum; identifies trends and issues; and develops evaluative criteria.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDAP 646. Teaching Number and Algebraic Thinking in Elementary School 3 Units

Description: This course explores teaching and learning mathematics concepts and procedures throughout elementary school, such as subitizing, decomposing, basic fact fluency, place value, operations with multi-digit whole numbers, and algebraic thinking. Content reflects state and national standards.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDAP 647. Teaching Data, Geometry and Measurement in Elementary School 3 Units

Prerequisite(s): Successful completion of Elementary Mathematics Methods course.

Description: This course explores effective teaching and learning of data, geometry and measurement concepts reflected in state and national standards. Emphasis is on a developmentally-appropriate, culturally-responsive approach to mathematics learning, teaching, and assessment. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDAP 648. Teaching Fractions in K-8 3 Units
Term Typically Offered: Fall Only

Description: This course enhances both mathematical understanding and teaching practices as they relate to fractions, decimals, and percent's. In addition to a strong focus on conceptual understanding and procedural fluency, the course focuses on developing positive mathematical identities.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDAP 649. Using Literacies and Tools to Learn: Inquiry in the Classroom 3 Units

Description: Examines the theoretical underpinnings and practical implementation of inquiry-based learning by creating an intensive inquiry experience/curriculum for students. By "living" the curriculum, students will come to understand how inquiry experiences are initiated and maintained, how to merge them with curriculum "have to's," and how to integrate real world resources in meaningful ways for learners.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDAP 651. Expanding Classroom Walls: Forests, Parks, and Backyards 3 Units

Description: Provides information and experience needed to effectively teach the life and earth science concepts and strategies found in a forest or park setting to classroom learning.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDAP 652. Workshop in Science Education 1-6 Units

Description: A workshop dealing with materials and techniques in teaching science; includes development and evaluation of innovative and practical service projects using teaching strategies.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDAP 653. Instructional Procedures in Science: Zoos 3 Units

Description: Provides background information and experience needed to effectively teach animal adaptation, animal endangerment, diversity of lifestyle and the application of these learnings to classroom instruction. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDAP 657. Exploring Environmental Education in the Context of an Informal Learning Setting: Zoo 3 Units

Description: In this course, we will explore the application of the basic content of life sciences topics such as taxonomy, animal behavior (adaptations), biodiversity and conservation issues to the K-12 classroom. Students will explore real life applications to life sciences that apply to environmental education with the aim to inspire conservation action.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDAP 659. Teaching History with Museums 3 Units
Term Typically Offered: Summer Only

Prerequisite(s): Admission to the Teacher Education Program.

Description: This course is for advanced education students and those in the public history program; it explores the educational role of history museums and implications for both teachers and museum educators.

Note: Cross-listed with EDTP 459.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDAP 660. Social Studies in the Elementary School 3 Units

Prerequisite(s): EDTP 322 or EDTP 606 or consent of instructor.

Description: An advanced course in teaching social studies; appraisal of materials and newly developed social studies program use of effective teaching techniques; analysis of relevant research studies.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDAP 661. Special Topics in Assessment 3 Units

Description: Examines alternative approaches to assessing instruction and learning in science classrooms.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDAP 662. Workshop in Social Studies Education 3 Units

Description: Experience with content, techniques, and materials for teaching social studies in elementary and secondary schools. Offered each summer.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDAP 663. Research in Life Sciences: Ethology for Middle Grades 3 Units

Description: Provides an introduction to observational methods of studying animal behavior and the scientific methods.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- EDAP 664. Environmental Education in Schools** 3 Units
Description: Provides background information and experience needed to teach environmental education concepts on school grounds in K-12 schools.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 665. Biomes and Habitats** 3 Units
Description: This class will support teachers in meaningful learning of science content by exploring environmental issues in specific biomes and habitats. There will be an emphasis on developing scientific dialogues concerning these issues using research and dialectical or analytical argumentation, as well as self-and peer-evaluation of the dialogues.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 666. Consumer Economics in the Classroom** 3 Units
Description: Includes consumer topics, behavior and problems. Teaching strategies and materials appropriate for teaching consumer education will be emphasized.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 667. The Media and Consumer Education** 3 Units
Description: Examines mass media with special attention to marketing and advertising principles and practices. Directly applies these principles and practices to the elementary and secondary curriculum.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 668. Workshop in Economic Education** 3 Units
Description: Basic economic content, techniques and materials for integrating economics into elementary and secondary subjects.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 669. Economic Education Curriculum and Teaching** 3 Units
Description: Examines economic content, materials and strategies. Economic education teaching units are developed, taught and evaluated.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 672. Special Topics in Curriculum** 1-6 Units
Description: Intensive study of a current problem in an area of curriculum development or curriculum construction.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 673. Introduction to Environmental Education** 3 Units
Description: Examines philosophical, historical, curricular and instructional issues pertaining to the environment and the concept of sustainable development and relates these to outcome-based education.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 674. Math for Girls and Problem Solvers** 3 Units
Description: Examines issues related to gender and mathematics. Emphasis on strategies that benefit all students.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 676. Technology Applications for Mathematics and Science Teachers** 3 Units
Prerequisite(s): Admission to 8-12 MEd or MAT program or consent of instructor.
Description: Methods, techniques, and materials of instruction for meaningful and appropriate use of technology for the teaching of mathematics and science in the middle and high school. Equipment and computer software used in the course as well as student projects required will vary according to advances in the available technology and the interest of prospective students.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 677. Developing Collaborative Groups: Facilitating, Coaching and Mentoring** 3 Units
Description: This course a) addresses the knowledge, skills, and dispositions needed for teachers to enhance effective practice with peers in schools and b) develops evidence-based strategies to support reflective, self-directed teachers who positively impact student achievement.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 678. Language Knowledge and Acquisition** 3 Units
Description: Addresses teacher mastery of structure of the English language and alphabetic writing system, and knowledge of language acquisition to help diverse learners learn to read and write.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 679. Capstone Practicum in Literacy: Literacy Coach** 3 Units
Prerequisite(s): EDAP 641.
Description: This course is a supervised practicum providing for analysis and refinement of the literacy coach role in the public school.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 680. Capstone Course** 3 Units
Prerequisite(s): Completion of 70 percent of MEd courses.
Description: An advanced course synthesizing student study in content areas along with social justice/equity, leadership, and research.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- EDAP 681. Teacher Leadership in Practice** 3 Units
Term Typically Offered: Fall, Spring
Description: This course focuses on teacher knowledge, skills, and dispositions needed for teachers to be leaders in their content field and within their classrooms and schools. Course includes development of teacher leadership skills, as well as implementing action research in one's content area to positively impact student learning opportunities. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 682. Mathematics Coaching and Professional Learning, K-12** 3 Units
Term Typically Offered: Summer Only
Description: This course focuses on knowledge and skills to being an effective mathematics coach, supporting high quality mathematics teaching and learning in K-12 settings. Additionally, this course explores research-based, effective forms of teacher professional learning related to teaching mathematics. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 685. Special Topics in Gifted Education** 3 Units
Description: Current topics in the education of the gifted. Course topics will vary as needed. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 686. Learning Styles: Curriculum and Instruction** 3 Units
Description: An examination of learning style theory and its personal and professional implications for K-12 school personnel, especially curricular and instructional applications. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 687. Literacy, Teaching and Technology** 3 Units
Description: Engages students in critical reading, thinking, writing and discussion about central issues and theoretical perspectives in research on literacy and technology, especially the new literacies of emergent technologies. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 688. Designing a Technology Integrated Curriculum** 3 Units
Description: Designed to provide experiences in technology integrated curriculum design to support meaningful and engaging learning experiences for all students. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 689. Using the Internet in P-12 Teaching** 3 Units
Description: Develop knowledge and skills in using and creating online content for classroom instructional use. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 690. Teaching with Multimedia Tools** 3 Units
Description: Develop knowledge and skills using and authoring multimedia for classroom instructional use. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 691. Teachers as Writers: Writing for Professional Publication** 3 Units
Description: Workshop approach to developing articles for publication in educational journals, newsletters, and websites. Participants will analyze potential markets and submit final drafts for publication. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 692. Teachers as Writers: Writing for Children** 3 Units
Description: Workshop approach to developing manuscripts in a variety of genres for young readers through adolescents. Participants will analyze potential markets and submit final drafts for publication, as well as develop teaching applications for strategies experienced during the course. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 693. Teaching Writing, P-12** 3 Units
Description: Introductory course. Strategy lessons on personal, literacy, transactive (informational and persuasive), and reflective writing; writing to learn; writing to demonstrate learning (open response, and on demand writing). For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 694. Special Topics in Literacy** 3 Units
Prerequisite(s): Consent of instructor.
Description: Current topics in reading education. Course topics will vary as needed. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 695. African-American English in Society and Schools** 3 Units
Term Typically Offered: Fall Odd Years
Description: This course deals with the distinctive varieties of English used by and among African Americans and their parallels elsewhere in African and the New World. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 696. Independent Study** 1-3 Units
Description: Opportunity for the student, under the supervision of a sponsoring faculty member, to pursue individualized study related to research or practice that is not included in regular courses in the curriculum. By arrangement with dean and advisor. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 698. Supervised Readings** 1-2 Units
Description: By arrangement with dean and advisor. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- EDAP 699. Thesis or Professional Paper** 2-5 Units
Prerequisite(s): ELFH 600 or consent of faculty advisor.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 710. Advanced Literacy Research and Theory** 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): Consent of instructor.
Description: An advanced course in literacy, providing an intense analysis of current research and theories in the strategies of teaching literacy at the elementary, middle and high school levels. Doctoral students should register for this section.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 711. Doctoral Professional Seminar: First Year** 3 Units
Prerequisite(s): Must be first-year PhD student in Curriculum & Instruction Program.
Description: An orientation to doctoral work in Curriculum & Instruction organized into 3 strands: professional strategies for success, skills critical to successful doctoral work, and cognitive orientations.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 720. Implications of Research in Mathematics Education** 3 Units
Prerequisite(s): Consent of instructor.
Description: A survey of mathematics research regarding its implications for mathematics education and its implementations in educational systems.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 725. Learning Theory and Research in STEM Education** 3 Units
Term Typically Offered: Spring Even Years
Description: This course will examine relevant learning theories/theorists (classical and contemporary) that have shaped the field of STEM Education, with a particular focus on mathematics and science education. Additionally, the course will survey multiple theoretical perspectives on teaching and learning, including the following: cognitive, constructivist, sociocultural, social cognitive, and situative perspectives. Students in the course will gain an understanding of these theoretical perspectives as they pertain to instructional models. They will also investigate applications of specified theoretical perspectives to address research inquiries. Throughout the course students will discover similarities and distinctions among questions posed and research designs into best practices with respect to improving teaching and learning among the STEM disciplines.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 730. Research in Infancy and Early Childhood** 3 Units
Prerequisite(s): ELFH 600 and EDAP 696.
Description: Development of research design in infant and early childhood education. Methods and techniques in the study of children. Each student designs and completes a research problem.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 731. STEM Curriculum: Theory and Research** 3 Units
Term Typically Offered: Fall Odd Years
Description: This course is designed for students to develop understandings of school mathematics and science curriculum and the driving forces behind curriculum, with a particular emphasis on the U. S. and grades K-12. Students will examine many key issues faced by diverse stakeholders concerned with the school mathematics and science curriculum. To provide useful contrasts and to deepen understandings of contemporary mathematics and science curriculum issues, the course incorporates historical and international perspectives on school mathematics and science curriculum. Students will become acquainted with issues of the intended curriculum (e.g., the nature of curriculum guidelines or textbooks) as well as the enacted curriculum (e.g., teachers' enactments of curricular goals).
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 735. Preparing Future Faculty in Languages, Literacies, Cultures, and Communities** 3 Units
Term Typically Offered: Spring Odd Years
Description: Required of every doctoral student in the L2C2 strand of the Curriculum and Instruction Doctoral program. A teaching and learning apprenticeship in higher education.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 740. Seminar in Curriculum Theory and Design** 3 Units
Prerequisite(s): EDAP 750.
Description: An advanced study of theories of curriculum structure and content; recent research and implications for curriculum design.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 745. STEM Teaching & Teacher Education** 3 Units
Term Typically Offered: Spring Odd Years
Description: This course is designed to give you an opportunity to read and analyze research in mathematics and science teaching, prospective teacher education, and professional development. We will examine ways of studying these topics and analyze what has been learned from their study. The overarching goal of the course is for you to become knowledgeable about the theoretical and empirical research literature on mathematics and science teaching and teacher education. This course is also designed to help you develop practices important for scholarly work including critical analysis and writing.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 750. Advanced Readings in Languages, Literacies, Cultures, and Communities** 3 Units
Term Typically Offered: Summer Odd Years
Description: A readings seminar about literacy education with an emphasis on theory, philosophy, history, trends and issues that impact research, policy and practice related to language, literacy and culture.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- EDAP 755. Culture and Power in STEM Education** 3 Units
Term Typically Offered: Fall Even Years
Description: Designed for Ph.D. and advanced Master's students in education, social and behavioral sciences, and the humanities to explore issues of culture and power in science, technology, engineering, and mathematics (STEM) with implications for education and society, in general. Also intended for traditional STEM graduate students, especially when graduate students in science and engineering fields seek nontraditional and interdisciplinary perspectives on education and research in their respective fields, as well as when they are preparing to teach STEM disciplines at the college level.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 764. Structural Equation Modeling** 3 Units
Description: This course focuses on basic concepts, applications, and interpretation of structural equation models. Students should have a thorough understanding of multiple regression analysis. Exposure to EFA and ANOVA is recommended.
Note: Cross-listed with ECPY 764 and ELFH 764.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 765. Hierarchical Linear Modeling** 3 Units
Description: This course focuses on the analysis and interpretation of organizational and longitudinal data using hierarchical linear modeling. Students taking this course should have a strong background in multiple regression.
Note: Cross-listed with ECPY 765 and ELFH 765.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 780. Seminar in Teaching and Learning** 3 Units
Prerequisite(s): Near the end of the doctoral program and by permission of instructor (for students in supervision subspecialty).
Description: Provides an information base in the field of interest, opportunities to explore recent innovations in Supervision, and practice in evaluating selected supervision strategies.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 785. Research Perspectives in STEM Education** 3 Units
Term Typically Offered: Summer Only
Description: Core aspects of analyzing and designing high-quality STEM education research will be explored and operationalized. Course topics will include a full spectrum of research perspectives and paradigms. Students will generate and present a research proposal as a foundational part of this course.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 789. Advanced Research Design** 3 Units
Term Typically Offered: Summer Only
Prerequisite(s): ELFH 701, and either ELFH 600 or EDAP 639, or permission of instructor.
Description: Discussion of quantitative research methods and their application to the design of a study. Emphasis on designs for causal inferences about the effects of an intervention on outcomes variables, especially quasi-experimental designs.
Note: Cross-listed with ECPY 789, ELFH 789, HSS 789.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 790. Doctoral Dissertation Seminar** 3 Units
Prerequisite(s): Basic knowledge, understanding, and skill competency in research design, methodology, and analysis and most doctoral coursework completed.
Description: Doctoral students will be provided an opportunity to critique and report on research from various fields, conceptualize and formulate ideas and topics, and develop a formal presentation and defense of a research proposal.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 795. Doctoral Research** 1-15 Units
Prerequisite(s): Completion of coursework for PhD program or successful completion of comprehensive examinations.
Description: Dissertation research.
Note: Cross-listed with LEAD 795, ECPY 795, and EDSP 795.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 796. Contemporary Issues in Literacy Research** 3 Units
Term Typically Offered: Occasionally Offered
Description: A review of current research regarding children's and adolescents' language and literacy development with a focus on how teachers' knowledge about contemporary research issues can positively affect literacy instruction.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 798. Research Apprenticeship in Languages, Literacies, Cultures, and Communities** 3 Units
Term Typically Offered: Spring Even Years
Description: A course that supports beginning researchers in languages, literacies, communities, and cultures to develop and deepen skills in qualitative research methods, including data collection, data analysis, and presentation of findings.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDAP 799. Professional Paper** 1-5 Units
Description: For EdS candidates only.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Education: Educational Leadership, Evaluation, and Organizational Development (LEAD/ELFH)

Note: LEAD courses were offered under the ELFH subject code through spring 2020.

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

LEAD 501. Independent Study: Training or Technical Education 1-3 Units Term Typically Offered: Occasionally Offered

Description: Provides Training and Development students with course credit for special investigation into areas not currently subsumed in existing courses.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 510. Teaching Career and Technical Education 3 Units

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): Admission to the College of Education and Human Development.

Description: A study of teaching practices as they apply to beginning teachers. Emphasis on practical procedures needed to succeed in teaching.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 511. Ethical Theories and Ethical Problem-Solving 1 Unit

Description: Students will study and apply ethical perspectives at the individual level in healthcare workplaces.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 512. Individual Ethics in the Organization 1 Unit

Description: Study and application of ethical perspectives at individual, group, and organizational levels, as they apply to leadership in healthcare workplaces.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 513. Building Ethical Organizations 1 Unit

Description: Study and application of ethical perspectives at individual, group, organizational, and societal levels, as they apply to leadership in healthcare workplaces. Includes examination of social responsibility.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 515. Supervised Staff-Industry Exchange 1-3 Units

Prerequisite(s): Career & Technical Education Teacher Certification.

Description: Provides essential improvement experience for the occupational education teacher through placement in occupationally oriented job situations which are evaluated to assist the teacher in implementing new skills and updating techniques in the classroom.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 522. Promoting Workplace Health, Safety, and Security 3 Units Term Typically Offered: Fall, Spring, Summer

Description: This course addresses knowledge, skills, and dispositions for workforce leaders to promote healthy and safe workplaces. Both physical and psychological health, safety, and security concepts are explored, from compliance and workplace climate and leadership perspectives. Special emphasis is placed on emerging issues and the development of skills to promote workplace health, safety, and security.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 540. Program Exit Experience - CUE 3 Units

Term Typically Offered: Occasionally Offered

Prerequisite(s): Admitted to College of Education and Human Development.

Description: Capstone experience, includes supervised professional work experience related to student's program and professional goals, and a program exit portfolio with program reflection paper.

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- LEAD 574. Using Productivity Tools** **3 Units**
Description: Overview of applications of microcomputers and electronic media systems for instruction and management. Emphasis is placed upon use of general purpose integrated computer software. Current issues involving technology use for training/instruction and work/classroom/school management will be the focus for the course.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 575. Instructional Technology** **3 Units**
Term Typically Offered: Occasionally Offered
Prerequisite(s): LEAD 311.
Description: This course provides knowledge and hands-on experience of current and emerging workforce instructional technologies. Students will learn theory and various technology-enhanced learning solutions.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 577. Knowledge Management and Information Systems** **3 Units**
Term Typically Offered: Occasionally Offered
Prerequisite(s): Admission to the College of Education and Human Development.
Description: Overview of knowledge management strategies and applications. Examinations of tools and technologies used in organizations to support knowledge management and transfer.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 578. Workplace and Information Ethics** **3 Units**
Term Typically Offered: Occasionally Offered
Description: Study and application of ethical perspectives at individual group, organizational, and societal levels, as they apply to leadership in workplaces and management of organizational information. Includes examination of social responsibility.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 581. Culminating Experience on Personal Growth** **1 Unit**
Description: Student analyzes changes in competency-related learning from pre-to-post-program.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 582. Program Exit Experience** **1 Unit**
Description: Student completes a Program Exit Portfolio, which provides the student the opportunity for reflection on accumulated content and experiences.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 583. Capstone Project** **1 Unit**
Description: Student completes a capstone project that is the culmination of the student internship experiences, program portfolio, and reflection paper.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 596. Seminar** **1-9 Units**
Term Typically Offered: Occasionally Offered
Description: The investigation of special problems in training and development.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 600. Introduction to Research Methods and Statistics** **3 Units**
Description: Critical examination of research in education. Emphasis given to historical, empirical, and experimental methods of research; to techniques of research design and statistical analysis; and to skills in writing reviews and critiques of research literature.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 601. Applied Statistics** **3 Units**
Prerequisite(s): LEAD 600 or equivalent with faculty advisor's approval.
Description: Examination of statistical methods, including sampling, estimation, testing of hypotheses, correlation and regression analysis. Some attention paid to non-parametric tests.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 602. Survey Research and Attitude Measurement** **3 Units**
Prerequisite(s): ELFH 601.
Description: Techniques for construction of evaluation instruments. Special attention given to surveys and questionnaires, sampling and scaling of attitudes and opinions.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 603. Administrative Leadership in a Reform Environment** **3 Units**
Description: In this reform environment leaders will learn about leading schools within an integrated policy and governance framework from the federal, state, and district perspectives. Particular attention will be paid to the Kentucky Education Reform Act of 1990.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 604. Instructional Leadership and Supervision 3 Units

Description: Examines concept of school culture, supervision skills and approaches, observation instruments, and action models for instructional supervision. This course takes a proactive, school success approach to school administration.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 605. Leadership in HROD 3 Units

Description: Study of the modern theories of leadership, management, and leadership development. Applied overview of the key concepts and principles of leadership and leadership development.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 606. Program Evaluation 3 Units

Description: Examines the theories, techniques, methods, and program evaluation models currently used in assessing the effectiveness of learning programs and products in educational and other organizational settings.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 607. Principles of Educational Leadership 3 Units

Description: Examines concepts, analytical tools, case material, and organizational theories from the public, business, and educational administration sectors.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 608. K-12 Leadership 3 Units

Description: Examination of critical responsibilities of K-12 educational leaders, including building and system administrators and supervisors, through guided observations outside of class (30% of course time) and through in-class activities (70% of course time). Emphases on processes and skills required in the context of reform in Kentucky and in the nation.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 609. Internship in Educational Leadership 3 Units

Term Typically Offered: Summer Only

Description: Students work with mentor principal for a period spanning year end, summer preparation time, and school starting to gain valuable operational and instructional knowledge and skills.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 610. Collaboration and Communication for Effective Leadership 3 Units

Description: A lecture-laboratory course to build student awareness and skills for effective collaborative leadership, communication, decision-making, community relations, and group management.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 611. Strategic Human Resources 3 Units

Description: Examination of key concepts and principles of strategic human resource management, with special emphasis on the role of HR within the organization. Essential foundational knowledge and skills essential for HR professionals and managers.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 612. Talent Acquisition and Management 3 Units

Description: Theories and techniques of key human resource management functions of HR planning and selection. A systems approach is used to explore HR planning as the managing of supply and demand for labor internal and external to the organization. Multiple strategies are examined for measuring predicted job performance to effectively plan, recruit, and select employees.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 613. Administration and Supervision in Special Education 3 Units

Description: The development, coordination, administration, and supervision of special services for exceptional children.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 614. Program and Organization Evaluation 3 Units

Description: Examines program and organization evaluation with emphasis on principles of planning, information systems, evaluation, and decision making.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 615. Human Resource Development Internship 2-8 Units

Description: Supervised professional work experience in activities related to the student's program objectives. Designed to provide experience not possible in the classroom setting.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 616. HROD Integrative Capstone 3 Units

Description: Culminating experience that requires integration of research, theory, and practice of human resources and organization development through a fieldwork experience, program portfolio/systematic reflection on past work, and integrative content seminar.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 617. Evidence Based Research in HROD 3 Units

Description: Use and application of evidence-based research in Human Resources and Organizational Development. Emphasis on applying research to organizational decision-making. Includes accessing, interpreting, critiquing, and synthesizing research.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 620. Education Law and Policy Review in P-12 Education 3 Units
Term Typically Offered: Fall Only

Description: Examination of constitutional, statutory, regulatory and policy provisions, and court decisions affecting P-12 educational leadership.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 622. Fiscal and Human Resources in P-12 Education 3 Units
Term Typically Offered: Fall Only

Description: Study of laws, practices, and procedures related to utilizing human and financial resources to equitably improve student achievement at the school level.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 623. Special Problems in Leading Instructional Improvements 1-6 Units

Prerequisite(s): Consent of instructor.

Description: Provides skills for persons engaged in instructional leadership who desire to investigate and/or develop specific functional programs for the purpose of improving instruction.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 624. Global Human Resources Development 3 Units
Term Typically Offered: Summer Only

Prerequisite(s): Application to the CEHD International Learning Program.

Description: Leadership and human resources development processes at the individual, group, organizational, and global levels are examined from a cross-cultural perspective. Emphasis is placed on the assessment, challenge, and support activities conducive to developing global leadership skills and awareness in a variety of organizational and cultural contexts.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 625. History of American Education 3 Units

Description: Examination of the function of educational processes in the context of American political, economic, and social history.

Note: Previously cross-listed with HIST 625.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 629. Youth and Adults with Special Needs in Career and Technical Education 3 Units

Description: Emphasis on integrating instructional and/or management activities to assist disadvantaged and handicapped persons enrolled in occupational education programs.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 630. The School in the American Social Order 3 Units

Description: Examination of the school as a social institution, with emphasis on the interrelationship of the school with other social, political, and economic organizations.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 631. Performance Management and Rewards 3 Units

Description: Theories and techniques of the key human resource functions of performance management, benefits, and compensation. Focus on using performance management and total rewards to achieve individual and organizational performance.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 632. Ethics and Social Responsibility in the Workplace and Education 3 Units

Description: To identify moral and ethical issues in the workplace and education by applying critical thinking and analysis processes to ethical dilemmas.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 633. Systems and Structures for School Improvement 3 Units
Term Typically Offered: Fall Only

Description: Candidates learn the functions of operational vision and mission, school improvement tools and processes, procedures and structures. Attention is given to the accreditation tools in use in Kentucky as well as the tools for state required diagnostic reviews for underperforming schools.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 634. FUNDAMENTALS OF SCHOOL LEADERSHIP 3 Units**Term Typically Offered:** Fall Only**Description:** In this course for certification as a school leader, candidates examine the education leaders' responsibility for planning, implementing, monitoring, and evaluating assessment, curriculum, and instruction through an examination of their personal leadership skills and dispositions and planning for personal growth in their leadership ability across the duration of the degree program.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**LEAD 635. Building and Sustaining Professional Learning Communities 3 Units****Term Typically Offered:** Spring Only**Description:** Analysis, research, and planning to gain the ability to transform a school into a Professional Learning Community where teachers and staff develop systems of instruction, intervention, and extension to meet the learning needs of all students.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**LEAD 636. Creating Equitable & Reliable Learning Environments 3 Units****Term Typically Offered:** Spring Only**Description:** Candidates develop collaborative leadership skills and knowledge about school culture, learning communities supporting teachers and students, and professional ethics.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**LEAD 637. Ensuring High Performance School and Community Engagement 3 Units****Term Typically Offered:** Summer Only**Description:** Candidates learn the functions for identifying, engaging, and deploying school and community resources in the service of supporting student learning outcomes.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**LEAD 639. District Management: Creating Sustainable Systems 3 Units****Term Typically Offered:** Fall Only**Prerequisite(s):** LEAD 649.**Description:** This course focuses on the responsibilities of the school district superintendent with an emphasis on managerial leadership, including strategic planning, district budget, human resources management, facilities, communication, policy management, and legal issues. Students must be admitted to the Superintendent Certification Program prior to enrollment.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**LEAD 640. Developing a Philosophy of Education 3 Units****Description:** Study of philosophic assumptions and principles governing the American school and the application of these assumptions and principles to practical problems of learning, teaching, and administration.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**LEAD 641. Graduate Seminar: Leadership, Foundations and Human Resource Education 1-4 Units****Description:** Detailed discussion of new and emerging themes in Leadership, Foundations and Human Resource Education.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**LEAD 649. District Leadership: The Contemporary Superintendent 3 Units****Term Typically Offered:** Spring Only**Prerequisite(s):** Applied to the superintendent certification program.**Description:** This course focuses on the responsibilities of the school district superintendent, with an emphasis on the development and growth of the superintendency student in the area of leadership as it relates to continuous district improvement. Students must have applied to the Superintendent Certification Program prior to enrollment.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**LEAD 650. Evaluation & Assessment in Health Professions Education 3 Units****Term Typically Offered:** Fall, Summer**Prerequisite(s):** Enrollment limited to students in a Health Professions Education graduate program (academic plan codes HRODMS HPE, HLTHCHP, HPEDMS, HPEDMS O, HLTHCGRO).**Description:** Through a clinical model for the health professions, this course covers student assessment methods and measurements, feedback in the clinical learning environment, competency-based assessment, the use of simulated patients to assess clinical skills, and the evaluation of clinical teaching effectiveness. Coursework will be tailored to the interests and current role of the learner and will culminate in a scholarly project where learners demonstrate competence in assessment and evaluation for Health Professions Education.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**LEAD 659. Planning 3 Units****Description:** Focuses on the development of planning, implementation, and leadership skills needed to direct strategic decision-making.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 660. Diversity and Inclusion 3 Units

Term Typically Offered: Fall, Spring

Description: Focuses on concepts of diversity and inclusion in organizations, and the changing demographics of our society, especially related to race and culture, gender, age, disability, sexual orientation and socio economic status. This course emphasizes the implications of these factors for effective management in human resources and organizations in general.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 661. Adult & Organizational Learning 3 Units

Description: Psychology applied to adult learning and organizational settings. Examines learning from both individual/team and organizational levels. Utilization of theories to increase individual and organizational performance through sustained and effective learning.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 662. Organizational Analysis 3 Units

Description: Examination of the process and techniques used to conduct an organizational analysis in order to identify societal, organizational, departmental and individual performance needs.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 663. Methods of Facilitation 3 Units

Description: Development of the presentation skills needed to conduct training programs in non-school settings. Focus placed upon the difference between teaching and facilitation of adult learning.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 664. Organizational Change and Consulting 3 Units

Description: Study of the organization as a system, how organizations change, and the role of the internal or external consultant in facilitating change.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 665. Foundations of Health Professions Education 3 Units

Prerequisite(s): Enrollment limited to students in a Health Professions Education graduate program (academic plan codes HRODMS HPE, HLTHCHP, HPEDMS, HPEDMS O, HLTHCGRO).

Description: This course provides a solid foundation to the profession of health education through a focus on professional roles and responsibilities, ethics and cultural competence, leadership and collaboration, and the adult learner. Additionally, as an introduction to the profession, this course includes an overview of teaching and learning in health professions education, instructional strategies, assessment, evidence-based practice and research.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 666. Program Development & Assessment in Higher Education 3 Units

Description: Analysis and application of organizational/situational analysis and needs, and organizational responses through program design, development, implementation, student assessment measurements, and evaluation.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 667. Instructional Planning for Student Learning and Achievement 3 Units

Term Typically Offered: Fall, Summer

Prerequisite(s): LEAD 649 and LEAD 639.

Description: Focuses on the responsibilities of the school district superintendent as they relate to improving student achievement through instructional leadership including Board policy, Professional Learning Communities, academic and emotional support systems, monitoring systems of instruction, professional development, personalized learning, engagement with parents and community, and a focus on equity.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 668. Academic Advising 3 Units

Description: Focuses on the history, foundation, and professional practices of academic advising as an essential component of student persistence and success at postsecondary institutions.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 670. Instructional Strategies 3 Units

Description: In this course, we will focus on what scholarly research can tell us about why we set up learning experiences the way that we do, as well as how we can apply these research findings in the contexts and situations where you are interacting with students. We will also examine the roadblocks that arise in implementing research-based plans and practices, and practice problem-solving to work around these roadblocks. We will also explore ways to critique and evaluate instructional plans and interactions, as well as ways of using these critiques and evaluations to improve instructional design, teaching, and learning.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 671. Performance Improvement 3 Units

Description: Provides knowledge and skills to move from analysis of performance problems to identifying, selecting, and developing interventions that improve performance of individuals, groups, and organizations to achieve organizational goals.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 672. Instructional Design and Development 3 Units

Description: Emphasizes systematic processes for the design and development of instruction with application to education and training. Current theory and research on instructional design and development, in accordance with principles of teaching and learning.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- LEAD 673. e-Learning Design and Development** 3 Units
Prerequisite(s): LEAD 672 or equivalent instructional design skills.
Description: Techniques and tools for designing, developing and delivering e-Learning.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 674. Advanced Leadership Theory** 3 Units
Description: Participants will explore and develop an understanding of both classical and contemporary leadership theory. Theory and research will be integrated as a means to better understand the emergence of leadership, its practice as an art, and its application in contemporary practice within organizational settings. Critical perspectives on the topic will be discussed and reflected upon. Deep understanding of theory to practice will be covered.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 675. Teaching and Learning in Health Professions Education** 3 Units
Prerequisite(s): Enrollment limited to students in a Health Professions Education graduate program (academic plan codes HRODMS HPE, HLTHCHP, HPEDMS, HPEDMS O, HLTHCGRO).
Description: This course introduces the principles and theories of teaching and learning within health professions education. Within a health context, this course will cover planning and preparing to teach, student motivation and engagement, and assessing the teaching-learning environment.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 676. Instructional Strategies in Health Professions Education** 3 Units
Prerequisite(s): Enrollment limited to students in a Health Professions Education graduate program (academic plan codes HRODMS HPE, HLTHCHP, HPEDMS, HPEDMS O, HLTHCGRO).
Description: This course is designed to facilitate understanding of instructional strategies and their effective application in the classroom and clinical settings. Through a hands-on approach to learning, participants will learn to apply effective strategies that stimulate critical thinking and creativity, and promote cooperative learning. Teaching methods to be covered include presentation and facilitation skills, teaching at the bedside, appropriate use of instructional technology, and assessment of teaching effectiveness.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 677. Technical Support Skills** 3 Units
Prerequisite(s): Ability to use word processor software and e-mail.
Description: Overview of the evaluation, purchase, installation and ongoing management and maintenance of computer systems and related software for instruction and staff productivity.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 678. American College and University** 3 Units
Description: Examination of historical development of the American college, community college, and university, including major ideas and concepts underlying these developments and major problems affecting present institutions of higher learning.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 679. Systems for Change: Continuous School Improvement-A Clinical Practicum** 3 Units
Grading Basis: Pass/Fail
Term Typically Offered: Fall, Summer
Prerequisite(s): LEAD 639, LEAD 649, and LEAD 667.
Description: This course requires the students to further explore the multiple dimensions of the superintendency, including responsibilities related to culturally responsive leadership, external development leadership, and micropolitical leadership. This is the final course in the four-course sequence leading to certification as superintendent. This course is designed as a clinical practicum with the majority of time spent working in a school district with the mentoring superintendent on the culminating capstone experience.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 680. Legal Issues in Postsecondary Education** 3 Units
Description: Examination of constitutional and statutory provisions and court decisions affecting educational leadership in post secondary education.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 681. The Philosophy of Higher Education** 3 Units
Description: This course focuses on analyzing competing philosophies of higher education, with the purpose of helping students construct consistent sets of beliefs about values in higher education as a guide to administrative and academic decisions. The study of higher education requires philosophical context, which will help you understand other course work as well as your daily practice, work, and life. The central purpose of this course is to provide a philosophical grounding, which will help you comprehend higher education today. Philosophy does not have discrete answers and issues are continuously debated ; however, it is possible to truly appreciate and understand your other coursework. Being aware of the philosophies undergirding higher education decisions and policies makes an individual able to critique, analyze, and understand these decisions better.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 682. The Organization and Administration of Higher Educational Institutions** 3 Units
Description: Exploration of organizational and administrative theory as related to colleges and universities and assessment of the roles of major administrative units of the institution. Purpose is to aid students seeking to become college or university administrators or faculty members.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- LEAD 683. College Teaching** **3 Units**
Description: This course introduces common theories of teaching and learning as students analyze elements of effective teaching; explore concepts such as critical thinking and metacognition; and consider learning assessment. Students receive support for (re)turning to the classroom as learners and develop a personal teaching philosophy. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 684. Educational Resource Management in Postsecondary Education** **3 Units**
Description: Study of resources, practices and procedures of finance and economics as related to post-secondary education. Provides investigation of specific and current educational finance issues affecting educational institutions. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 685. Evidence-based Practice in HPE** **3 Units**
Prerequisite(s): Enrollment limited to students in a Health Professions Education graduate program (academic plan codes HRODMS HPE, HLTHCHP, HPEDMS, HPEDMS O, HLTHCGRO).
Description: Through a clinical model, this course covers evidence-based decision-making as it applies to assessment of teaching effectiveness, action research, scholarly research, and program evaluation. Coursework will be tailored to the interests and current role of the learner and culminate in a scholarly project where learners will demonstrate competence in evidence-based decision-making and Health Professions Education competencies. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 686. The Two-Year College** **3 Units**
Description: Analysis of the groups which mold and shape the two-year college as an institution; consideration of the three major adaptive responses of the college as an organization, administration, curriculum and instruction, and student personnel services; and analysis of fundamental issues facing the two-year college as it seeks to adapt to the social, educational, and economic needs of society. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 687. Education Policy & Equity** **3 Units**
Description: This course explores the policy making process, stages of implementation, and analysis of education policies. Federal and state-based policies across the P-20 education spectrum will be covered. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 688. Supervised Experience in Higher Education** **3 Units**
Description: This graduate-level course is designed to provide a guided, hands-on practical application and demonstration of professional knowledge and competencies in postsecondary administration. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 689. Special Problems in Educational Leadership** **1-6 Units**
Description: Provides skills for persons engaged in educational leadership who desire to explore specific functional techniques for the purpose of improving administration and management. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 690. Professional Project in Higher Education** **1-6 Units**
Grading Basis: Pass/Fail
Description: The internship in higher education is designed to provide you with the opportunity to integrate cognitive learning (coursework from the higher education program) with relevant practical experiences in an area of postsecondary administration.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 691. Graduate Independent Study** **1-3 Units**
Description: By arrangement with dean and advisor. Independent study in a selected subject area with approval and supervision by a faculty member. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 692. Independent Study in Leadership** **1-3 Units**
Description: By arrangement with advisor and consent of dean. Independent study in a selected subject area with approval and supervision by a faculty member. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 693. College Students in the United States** **3 Units**
Description: An introduction to the nature and characteristics of college students in the United States, educational outcomes and effects of the undergraduate experience, and factors that promote and inhibit college student success. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 694. Diversity in Higher Education** **3 Units**
Description: The purpose of this course is to explore the relationships among major forms of diversity (e.g., religion, class, race, ethnicity, gender, ability, age, sexual orientation, nationality, nativism) and higher education. Specifically, students will consider how diversity has shaped and continues to impact various higher education domains (e.g., history, students, faculty, organization and governance, policy) and how leaders within higher education institutions can be positive change agents regarding the diversity agenda. We will consider how diversity has shaped higher education institutions as well as how individuals and groups have influenced higher education institutions. Particular attention will be paid to issues of power, oppression, (dis-)privilege, equity, and educational attainment. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

<p>LEAD 695. Globalization & Higher Education 3 Units Description: The purpose of this course is to introduce students to definitions of globalization and related concepts, such as internationalization, internationalism, and transnationalism. Moreover, this course will help students educate themselves about the impacts of globalization on higher education, particularly the practice of higher education administration in the United States. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>LEAD 703. Multivariate Educational Statistics 3 Units Prerequisite(s): ELFH 601, ELFH 701 and ELFH 702. Description: Examines multivariate statistical methods used by educational researchers, including multiple regression, multivariate analysis of variance, and factor analysis. Computer software packages are extensively used. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>LEAD 696. Independent Study: HRE or IT 1-3 Units Description: By arrangement with dean and advisor. Independent study in a selected subject area with approval and supervision by a faculty member. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>LEAD 704. Qualitative Field Research Methods 3 Units Description: Provides opportunities to design and critique field studies in educational and social settings and to practice techniques used to collect and analyze qualitative. Additional time required outside class for observations and interviews. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>LEAD 697. Organizational Improvement in Higher Education 3 Units Description: This graduate-level course explores the processes of organizational improvement in higher education, the actors who contribute to such improvements, and the challenges to improvement. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>LEAD 705. Qualitative Data Analysis and Representation 3 Units Prerequisite(s): ELFH 704 or permission of instructor. Description: Study of techniques for qualitative data analysis, including computer assisted data analysis, and text and non-text representation of knowledge. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>LEAD 698. Supervised Readings 1-3 Units Description: By arrangement with advisor and consent of dean. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>LEAD 710. Doctoral Seminar in Educational Leadership 3 Units Grading Basis: Pass/Fail Description: Study of meaning and requirements of doctoral study. Discussion of current literature. Pass/Fail. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>LEAD 699. Thesis or Professional Paper 1-6 Units Description: Culminating paper for masters degree (as per program plan), by arrangement with advisor. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>LEAD 711. UofL / WKU Cooperative Program 1-15 Units For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>LEAD 700. Research Concepts and Design 3 Units Prerequisite(s): ELFH 601 or consent of instructor. Description: Explores the logic of inquiry and examines and critiques a wide variety of research approaches. Students develop at least two approaches to researching a specific topic. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>LEAD 715. Advanced Organizational Theory 3 Units Description: Focus is on integrating the various theories of organizations and management into an overarching general systems theory. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>LEAD 701. Intermediate Applied Statistics 3 Units Prerequisite(s): LEAD 601. Description: Covers two intermediate statistics, analysis of variance and multiple regression as general data analytic techniques in applied research. Includes some programming and data processing. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>LEAD 720. Social and Emotional Development in a Diverse Environment 3 Units Term Typically Offered: Summer Only Description: An examination of the societal factors contributing poor school climate and school responses to these factors to create a caring and inclusive school culture for all students regardless of culture or background experience. Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>LEAD 702. Applied Multiple Regression 3 Units Prerequisite(s): LEAD 701. Description: Applications of multiple regression as a general data analysis technique in educational and behavioral sciences. SPSS for Windows is used extensively. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	

- LEAD 723. Seminar in Legal Issues** 3 Units
Prerequisite(s): ELFH 620 or ELFH 680.
Description: Provides research skills for intensive investigation of specific, current legal issues affecting the operation of educational institutions.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 730. Foundations of Urban Educational Policy** 3 Units
Prerequisite(s): Admission to doctoral program or consent of instructor.
Description: An examination of urban educational policy from philosophical, social, historical, psychological, and legal points of view.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 735. Doctoral Seminar in HRE and IT** 1-3 Units
Prerequisite(s): Admission to doctoral program or consent of the instructor, and consent of the student's advisor.
Description: It is designed to expose students to the work of other doctoral students, faculty members, and other research professionals in human resource development.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 740. Advanced Internship in HRE and IT** 2-6 Units
Prerequisite(s): Doctoral student with an emphasis in human resource development and consent of advisor.
Description: Provides PhD and EdD students with advanced on-the-job experiences in the field of human resource development.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 750. Doctoral Seminar in Educational Evaluation** 3 Units
Prerequisite(s): ELFH 606; PhD or EdD students or by consent of instructor.
Description: Covers advanced topics in educational evaluation. Discussion of policy issues and quantitative and qualitative methods.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 760. Doctoral Internship in Educational Evaluation** 3-6 Units
Prerequisite(s): PhD or EdD students in the evaluation specialty area, and consent of instructor required.
Description: Provides on-the-job learning experiences for future educational evaluators.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 763. Factor Analytic Procedures** 3 Units
Term Typically Offered: Spring, Summer Even Years
Prerequisite(s): LEAD 602; LEAD 702; LEAD 703; ECPY 740.
Description: Course addresses the use of factor analytic procedures to examine the psychometric properties of instruments used in the social and behavioral sciences. Specific focus is the use of factor analysis throughout all phases of scale development and validation, which includes examining an instrument's internal structure and testing its measurement invariance across groups. Its use within multilevel modeling is also considered. Factor analytic procedures covered include exploratory and confirmatory factor analysis, including emerging advancements within latent variable modeling, Data analysis examples will be based on social science applications and practical implementation of methods using available statistical software.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 764. Structural Equation Modeling** 3 Units
Description: This course focuses on basic concepts, applications, and interpretations of structural equation models. Students should have a thorough understanding of multiple regression analysis. Exposure to EFA and ANOVA is recommended.
Note: Cross-listed with EDAP 764 and ECPY 764 .
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 765. Hierarchical Linear Modeling** 3 Units
Description: This course focuses on the analysis and interpretation of organizational and longitudinal data using hierarchical linear modeling. Students taking this course should have a strong background in multiple regression.
Note: Cross-listed with EDAP 765 and ECPY 765.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 777. Capstone for Doctor of Education Degree in Educational Leadership and Organizational Development** 1-15 Units
Prerequisite(s): Passing EdD comprehensive examinations.
Description: Provides a culminating assignment for Doctor of Education students. Consists of a group project designed to integrate theories and tools learned throughout the program
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- LEAD 780. Problem Analysis in Educational Leadership I** 3 Units
Prerequisite(s): ELFH 601, ELFH 700, and Research/Statistics Course.
Description: Doctoral level study of approaches to analyzing and solving contemporary problems encountered by educational administrators and leaders in such administrative areas as: personnel recruitment and selection, law, budgeting and finance, staff development, operational and strategic planning, policy formulation, diversity and multiculturalism, instructional leadership, and acquisition and use of technology for administrative purposes.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 781. Problem Analysis in Educational Leadership II 3 Units
Prerequisite(s): ELFH 780.

Description: Doctoral level study and application of approaches for investigating research-based and practice-based problems in educational administration and leadership. Extends expertise through analysis and application of problem solving and analytical approaches to administrative problem areas selected by the student. The problem areas addressed may include but are not limited to: budgeting and finance, staff development, operational and strategic planning, law, educational policies, policy formulation, diversity and multiculturalism, instructional leadership, and acquisition and use of technology for administrative purposes.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 782. Reflective Practice for School Leaders 3 Units
Term Typically Offered: Spring Only

Description: Examines the complex realities of practicing school administration in public, dependent and parochial schools by integrating action research projects with principal candidates with personal practical theories of administering schools.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 789. Advanced Research Design 3 Units
Term Typically Offered: Summer Only

Prerequisite(s): LEAD 701; LEAD 600 or EDAP 639, or permission of instructor.

Description: Discussion of quantitative research methods and their application to the design of a study. Emphasis on designs for causal inferences about the effects of an intervention on outcomes variables, especially quasi-experimental designs.

Note: Cross-listed with ECPY 789, EDAP 789, HSS 789.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 790. Problems in Urban Education and Society 3 Units

Prerequisite(s): Twelve hours in Urban Studies component of doctoral program including ELFH 730; restricted to doctoral students or consent of instructor.

Description: Culminating course in Urban Studies component of EdD; with guidance from the instructor, students select and explore a problem that enables them to apply their course of study to some aspect of the urban environment.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 795. Doctoral Research 1-15 Units
Prerequisite(s): Passing doctoral comprehensive exams.

Description: Examination and admission to candidacy for the doctoral degree.

Note: Cross-listed with ECPY 795, EDSP 795, EDAP 795.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 796. Research Literature 1-6 Units
Prerequisite(s): Consent of instructor.

Description: For post-master's students/candidates only. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 798. Billing course EdD Practitioner 0 Units

Description: Billing course EdD Practitioner. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LEAD 799. Professional Paper 1-5 Units

Description: For EdS candidates only. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Education: Special Education (EDSP)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

EDSP 510. Legal Issues in Special Education 3 Units

Term Typically Offered: Occasionally Offered

Description: Prepares special education teachers to fully understand and implement both the spirit and the letter of federal and state laws, regulations, and procedures related to students with disabilities.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 512. Methods for Students with Learning and Behavior Disorders 3 Units

Term Typically Offered: Occasionally Offered

Prerequisite(s): Admission to Teacher Education.

Description: Provides an overview of instructional methodology used to teach students with Learning and Behavior Disorders.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 515. Communication and Socialization in Early Childhood 3 Units
Term Typically Offered: Fall Only**Prerequisite(s):** Admission to professional program.**Description:** Research-based approaches to supporting the communication and social skills of young children, including those with disabilities or delays.**Note:** Six hours of field experience are required for this course.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**EDSP 516. Assessment Procedures for Students with Learning & Behavior Disorders 3 Units****Term Typically Offered:** Occasionally Offered**Prerequisite(s):** Admission to Teacher Education.**Description:** Analyzes and evaluates the assessment procedures for children with learning disabilities in academic and social settings.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**EDSP 518. Structured Literacy for Diverse Learners 3 Units****Term Typically Offered:** Spring Only**Description:** This course addresses evidence-based methods and strategies used to teach literacy skills to diverse learners. Prepares candidates to teach the five components of reading through explicit systematic and sequential instruction.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**EDSP 520. Assessment of Students with Moderate/Severe Disabilities 3 Units****Term Typically Offered:** Occasionally Offered**Description:** Addresses knowledge and skills needed to conduct assessment procedures, interpret data and use assessment data in educational decision-making for students with moderate/severe disabilities in a legal and ethical manner.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**EDSP 527. Inquiry into Early Childhood Education and Child Development 3 Units****Term Typically Offered:** Fall, Spring**Prerequisite(s):** Graduate Status.**Description:** Examination of physical, cognitive, language, affective and social development of typically and atypically developing children from conception to age five, with implications for early childhood education.**Note:** Cross-listed with EDSP 427.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**EDSP 532. Interdisciplinary Early Childhood Education Curriculum 3 Units**
Term Typically Offered: Fall Only**Prerequisite(s):** Admission to the professional program; concurrent enrollment in EDSP 542.**Description:** Research-based approaches to planning and implementing developmentally appropriate standards-based classroom activities, lessons, and materials that develop literacy, mathematics, science, and social studies learning in young children birth through age five. Also includes examination of contemporary early childhood curricula and approaches appropriate for children from diverse cultural backgrounds. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**EDSP 533. Inclusive Early Childhood Curriculum 3 Units****Term Typically Offered:** Summer Even Years**Prerequisite(s):** Concurrent enrollment in EDSP 534.**Description:** Exploration of curricular approaches and teaching strategies appropriate for inclusive early childhood classroom. Includes research-based approaches on blended practices for planning and implementing developmentally appropriate standards-based classroom activities, lessons, and materials that develop cross-curricular content learning in young children birth through age five.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**EDSP 534. Inclusive Early Childhood Curriculum Field Experience 1 Unit**
Grading Basis: Pass/Fail**Term Typically Offered:** Spring Only**Prerequisite(s):** Admission to the professional program; concurrent enrollment in EDSP 533.**Description:** Field experience observing and working in early childhood and inclusive classroom settings.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**EDSP 536. Theories of Play 3 Units****Term Typically Offered:** Fall, Spring**Prerequisite(s):** Graduate status.**Description:** This course offers knowledge about how play contributes to young children's development and learning.**Note:** Cross-listed with EDSP 436.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 537. Infant/Toddler Instruction and Care 3 Units

Term Typically Offered: Fall, Spring

Description: This course examines the development and educational needs of children from birth to age three.

Note: Cross-listed with EDSP 437.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 540. Introduction to Exceptional Children 3 Units

Description: A survey course designed to acquaint students with all types of exceptional children - physically and mentally handicapped, socially and emotionally disturbed, and the gifted; methods of adapting education to meet the needs of these children.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 541. Introduction to Learning and Behavior Disorders 3 Units

Description: An integration of theoretical, conceptual, and applied educational systems for children with learning and behavior disorders.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 542. Guidance For Young Children Field Experience 1 Unit

Grading Basis: Pass/Fail

Term Typically Offered: Fall Only

Prerequisite(s): Admission to the professional program.

Corequisite(s): Taken concurrently with EDSP 439.

Description: Field experience in public and private preschool classrooms. To be taken in conjunction with EDSP 439.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 545. Exceptional Children in the Regular Classroom 3 Units

Term Typically Offered: Occasionally Offered

Description: Educational programming for exceptional children in regular classrooms; curricular approaches in mainstreaming.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 546. Behavior Analytic Approach to Communication 3 Units

Term Typically Offered: Occasionally Offered

Prerequisite(s): EDSP 260 for undergrads or EDSP 644 for graduates.

Description: This course prepares practitioners to use principles of ABA to assess and teach communication skills to individuals with disabilities and develop knowledge of current AAC technology and assessment procedures.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 570. Autism: Introduction and Understanding 3 Units

Description: Increase understanding of individuals with Autism/Pervasive Developmental Disorder (PDD) across the life-span. Characteristics of this population, namely communication, social and behavioral attributes will be examined as they are manifested across all ages in the context of the family and community. Historical, diagnostic, and identification issues will be addressed.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 581. Introduction to Gifted Education 3 Units

Description: Classroom- and school-level approaches to identifying, nurturing, and further developing a variety of talents in all children, including but not limited to the areas of intellectual, academic, creative, visual/performing arts, and leadership talent.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 583. Early Childhood Special Education Assessment 3 Units

Term Typically Offered: Fall Only

Prerequisite(s): Admission to professional program.

Description: Identification and assessment of children 0-5 with special needs, as well as theory and practice of educational decision-making based on assessment data.

Note: Six hours of field experience are required for this course.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 584. Families and Collaboration in Interdisciplinary Early Childhood Education 3 Units

Term Typically Offered: Spring Only

Prerequisite(s): Admission to professional program Research based approaches to supporting families in providing interventions to infants and toddlers, working with families of preschoolers, and collaborating with other professionals and paraprofessionals.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 585. Families and Collaboration in IECE: Field Experience 1 Unit**Grading Basis:** Pass/Fail**Term Typically Offered:** Spring Only**Prerequisite(s):** Admission to the professional program.**Corequisite(s):** EDSP 584.**Description:** Field experience in home, agency or school settings where the student will observe, assist, assess, and instruct infants and toddlers with identified special needs.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**EDSP 594. Foundational Concepts in Intellectual and Physical Disability 3 Units****Term Typically Offered:** Occasionally Offered**Description:** This course provides an overview of characteristics associated with intellectual and physical disabilities. Students will learn to establish support systems for addressing the educational and health needs of these learners.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**EDSP 596. Seminar in Special Education 1-4 Units****Description:** The investigation of special problems in education.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**EDSP 597. Seminar in Special Education 1-4 Units****Description:** The investigation of special problems in education.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**EDSP 600. Creativity and the Young Child 3 Units****Term Typically Offered:** Spring Only**Description:** Theories of creativity development and research-based approaches to teaching creativity in young children across content areas.**Note:** Cross-listed with EDSP 300.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**EDSP 606. Student Teaching: Interdisciplinary Early Childhood Education 3 Units****Term Typically Offered:** Fall, Spring**Prerequisite(s):** Passing mid-program assessment of MAT IECE teacher certification program.**Description:** Supervised observation, participation, and teaching full-time in a pre-school setting for a minimum of seven weeks.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**EDSP 607. Student Teaching; Learning and Behavior Disorders 3 Units****Grading Basis:** Pass/Fail**Prerequisite(s):** Undertaken after all program requirements have been met.**Description:** Provides supervised teaching experience with students demonstrating learning and behavior disorders.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**EDSP 608. Student Teaching: Moderate and Severe Disabilities 3 Units****Prerequisite(s):** Undertaken after all program requirements have been met.**Description:** Provides supervised teaching experience with students demonstrating moderate, severe, or multiple disabilities as well as other health impairments.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**EDSP 609. Moderate/Severe Disabilities Curriculum and Methods I 3 Units****Prerequisite(s):** EDSP 644.**Description:** Design and implementation of curriculum for students with moderate/severe disabilities through individual and group instructional plans using a variety of systematic instruction procedures to teach discrete and chained tasks/behaviors.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**EDSP 611. Moderate/Severe Disabilities Curriculum and Methods II 3 Units****Prerequisite(s):** EDSP 609.**Description:** Design and implementation of instruction based on alternate achievement of grade level academic standards that meet the needs of students with moderate/severe disabilities within special education and collaborative classroom settings.**Note:** Cross-listed with EDSP 440.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 612. Learning and Behavior Disorders Curriculum, Methods, and Assessment I 3 Units

Description: Introduces basic concepts in special education assessment; provides an overview of instructional methodology used in teaching students with disabilities.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 613. Curriculum Methods and Assessment: Field Component I 3 Units

Description: A variety of standardized and criterion referenced tests will be examined. Their role in assessing intellectual ability, academic performance, social, and emotional skills will be presented. Functional assessment will also be explored. In addition, curriculum and teaching strategies for students with learning and behavior disorders will be addressed.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 614. Transition Programs and Services for Children and Youth with Disabilities 3 Units

Description: Addresses the needs of personnel working with secondary special education students making the transition from school to adulthood. Provides information on the basic adult needs of persons with developmental disabilities, an interdisciplinary service model to meet those needs, and systematic planning and coordination of services that are required for persons with disabilities to achieve maximum quality of life.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 615. The Normalization Principle in Human Service Systems 3 Units

Description: Analyzes normalization principle in relation to education and other human service systems. Emphasizes evaluation of educational, residential, and community services for mentally retarded and other exceptional individuals.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 616. Learning and Behavior Disorders Curriculum, Methods, and Assessment II 3 Units

Prerequisite(s): EDSP 612.

Description: Focuses on instructional methods, materials, and assessment in the areas of literacy, math, social skills, and content areas for students with learning and behavior disorders.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 617. Practicum in Learning and Behavior Disorders 3 Units

Description: Instructional methods, techniques, and materials will be examined. Students work directly with children and adolescents with learning and behavior disorders in order to gain an understanding of these youngsters, and evaluate their own qualifications for working with them.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 618. Instructional Technology for Students with Special Needs 3 Units

Description: Designed to provide information about the use of instructional technology for students with learning disabilities. Lectures, video presentations, and required readings will be combined to provide a basic foundation of skills.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 627. Applications of Assistive Technology 3 Units

Description: Designed to provide professionals information about the latest advances in assistive technology for students with learning, visual, hearing and multiple disabilities. Provided on the web. CyberLessons are provided as well as CD supplemental materials, demonstrations, and required readings will be combined to provide a basic foundation of skills.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 632. Universal Design for Learning Using Technology 3 Units

Description: Explores methods and organizational approaches for employing assistive and educational technology in general education curriculum. Study of educational, practices, Universal Design for Learning principles and inclusion alternatives.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 635. Moderate and Severe Disabilities Practicum 3 Units

Grading Basis: Pass/Fail

Prerequisite(s): EDSP 609 and EDSP 611.

Description: A field-based developing-teacher experience that provides active classroom involvement with students diagnosed with moderate, severe, or multiple disabilities while under the supervision of trained educators and University faculty.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 637. Transdisciplinary Collaboration for Inclusion 3 Units

Description: Designed for teaching children with disabilities in the inclusive general education classroom. The course provides strategies for curriculum development, instructional modifications and student accommodations focusing on teachers working as members of a team within the framework of general curricula and classrooms. This is a distance education course.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 638. Educational Management of Health, Physical and Multiple Disabilities 3 Units

Prerequisite(s): EDSP 540 and EDSP 634.

Description: Addresses a broad range of issues of importance to the health and physical problems of students with multiple disabilities.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 639. Education Research in P-12 Setting 3 Units

Description: Analysis of research in special education relative to methodology and current research efforts in the field. Consideration given to understanding research design and the reading of research studies.

Note: Cross-listed with EDAP 639.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 641. Curriculum Methods in Special Education 3 Units

Description: Analyzes the subject areas, approaches, techniques, materials, and learning principles used in teaching children in special education.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 642. Assessment Procedures for Learning and Behavior Disorders 3 Units

Prerequisite(s): EDSP 540 or survey course in special education.

Description: Analyzes and evaluates the assessment procedures for children with learning disorders in the academic and social behavior areas.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 643. Instructional Procedures for Learning and Behavior Disorders 3 Units

Prerequisite(s): EDSP 540 or survey course in special education.

Description: Applies assessment, planning, instructional, and evaluation techniques to cases of specific learning disorders.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 644. Applied Behavior Analysis 3 Units

Description: Students explore the principles and procedures in the field of applied behavior analysis. Observational methods, single subject designs, and behavior promotion, reduction, and generalization strategies are reviewed in relation to the needs of students with disabilities.

Participants are required to develop individual project proposals that demonstrate their ability to design, implement, and evaluate behavioral programs in an effective and ethically responsive manner.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 645. Learning and Behavior Disorders Practicum 3 Units

Prerequisite(s): EDSP 512 and EDSP 516.

Description: Field experience in school settings where the student will observe, assist, assess, and instruct students with learning and behavioral disorders.

Note: Taken within the last 9 hours of coursework.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 647. Teaching Mathematics to Students with Disabilities 3 Units

Prerequisite(s): Admission to a Special Education Teacher Certification program.

Description: Students will investigate trends, learning theories, instructional activities, and manipulative materials applicable to mathematics education with a focus on ways to improve teaching of mathematics for students with disabilities.

Note: Cross-listed with EDSP 447.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 650. Advanced Applied Behavior Analysis 3 Units

Prerequisite(s): EDSP 644 and EDSP 671.

Description: The content in this course addresses advanced principles of applied behavior analysis and their application within various applied contexts. Students will conduct behavior change projects and analyze their effectiveness.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 651. Professional and Ethical Practice of Applied Behavior Analysis 3 Units

Prerequisite(s): EDSP 650 and EDSP 671.

Description: This course is designed to address behavioral consultation across settings. Particular emphasis will be placed on professional ethics as well as the skills necessary for successful consultation.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 652. Academic and Behavior Response to Intervention 3 Units

Description: This course will teach students to design, work within, and evaluate academic and behavior systems across the entire school to prevent student failures in both the academic and behavior realms.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDSP 653. Practicum in Autism and Applied Behavior Analysis 3 Units

Prerequisite(s): EDSP 644; EDSP 646 or EDSP 546; EDSP 671; EDSP 650; and EDSP 651.

Description: This course is designed to guide students in the application of behavior analysis with students on the autism spectrum. Students will identify learning needs, develop instructional objectives, select and use behavioral measures, collect and analyze data, implement behavior change methods, design behavioral instructional plans, apply reinforcement-based change procedures and adhere to established ethical standards.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- EDSP 654. Radical Behaviorism** **3 Units**
Description: This course will address the philosophical assumptions and theories that inform the science of behavior, specifically as they relate to the writings of B.F. Skinner.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDSP 656. Guidance for Young Children Field Experience** **1 Unit**
Term Typically Offered: Fall Only
Corequisite(s): Concurrent enrollment with EDSP 657.
Description: Focuses on the research-based knowledge and skills related to child growth and development that contribute to young children developing positive pro-social relationships and that assist early childhood professionals in understanding positive guidance principles and safe practices in addressing young children's challenging behaviors.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDSP 657. Guidance for Young Children** **3 Units**
Term Typically Offered: Fall, Spring
Corequisite(s): If enrolled in EDSP 439, concurrent enrollment in EDSP 656.
Description: Addresses the research-based knowledge and skills related to child growth and development that assist young children to develop positive pro-social relationships and for early childhood professionals to understand positive guidance principles and practice for young children's challenging behaviors.
Note: Cross-listed with EDSP 439.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDSP 660. Assistive Technology: Introduction and Software Applications for Young Children** **3 Units**
Description: Provide educators with the awareness of the range of available Assistive Technology (AT) options and knowledge of software to enhance learning experiences for students with disabilities. Participants will investigate the use of Assistive Technology as it relates to life skills such as communication, mobility, education, recreation, vocation, independence, and therapy/rehabilitation.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDSP 661. Assistive Technology: Assessment Data Collection and Decision-Making** **3 Units**
Description: Participants in this course gain an understanding of the importance of the assessment process in determining appropriate assistive technology solutions. Legal issues associated with assessment, theories that drive data gathering, data gathering instruments and procedures, administrative responsibilities, team assessments, and caregiver involvement are a few of the topics addressed.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDSP 662. Assistive Technology: Funding and Family Involvement** **3 Units**
Description: This course emphasizes the need for family participation in the selection, acquisition and implementation of assistive technology. The variety of funding sources and other related alternatives available to assist consumers in purchasing assistive technology services, software, and devices are also explored.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDSP 663. Low Tech Assistive Technologies** **3 Units**
Description: This course will familiarize participants with a wide variety of assistive technology options that are both simple to use and inexpensive in relation to a broad range of potential applications.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDSP 664. Assistive Technology: Computer Access and Switches and Toys** **3 Units**
Description: This course addresses a variety of computer access methods including speech synthesis, touchscreens, expanded keyboards and other interface alternatives as well as the construction and repair of switches, toys and other such devices that play important roles in the daily lives of individuals with disabilities.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDSP 665. Assistive Technology: Multimedia and the Classroom Integration** **3 Units**
Description: The purpose of this course is to develop the knowledge and skills necessary to identify, implement, and subsequently adjust, comprehensive teaching methods for students with different learning styles.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDSP 667. Assistive Technology: Processes and Procedures** **3 Units**
Description: The purpose of this course is to provide professionals with the core knowledge necessary to make informed decisions regarding assistive technology for the individuals they serve.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- EDSP 668. Assistive Technology Seminar** 3 Units
Description: Students will have hands-on experience with assistive technology devices in a lab setting and web assisted manner. Students will develop lesson plans and curriculum materials for students with disabilities.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDSP 669. Single Subject Research Methods and Designs** 3 Units
Prerequisite(s): EDSP 644.
Description: Students will learn principles and methods of designing single subject research in educational settings and are required to design and defend a research proposal.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDSP 671. Autism: Strategies and Techniques** 3 Units
Prerequisite(s): EDSP 570.
Description: Course participants will examine instructional approaches used with students with autism. Emphasis is placed on research based strategies that have utility in facilitating increases in communication, social, and academic skills.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDSP 672. Autism: Collaboration and Technology** 3 Units
Description: Prepare students to develop augmentative/alternative communication systems for individuals with autism. Students will create technology based communication systems with an emphasis on Board/Maker and Overlay Maker. Follow up sessions will be devoted to discussing strategies of implementation.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDSP 673. Research Seminar in Autism Spectrum Disorders** 3 Units
Prerequisite(s): EDSP 570 or EDSP 670, and EDSP 671.
Description: In this research seminar, course participants examine a variety of current issues related to individuals with autism spectrum disorders. Particular emphasis will be placed on early intervention, comprehensive treatment models and meeting the support needs of adolescents and adults.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDSP 674. Theories of Behavior Disorders** 3 Units
Description: Psychological, sociological, and physiological theories of behavior disorders. Emphasis on resulting educational problems. Observation and participation in cooperating facilities.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDSP 675. Characteristics, Needs, and Responses to Students with EBD** 3 Units
Description: Study and application of principles appropriate for the education and management of behavior disorder children in the regular classroom.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDSP 676. Educational Planning for the Behavior Disorder Child** 3 Units
Description: Study and application of principles appropriate for the education and management of behavior disorder children in resource room or special classes.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDSP 677. Practicum: Education of the Behavior Disorder Child** 3-4 Units
Prerequisite(s): EDSP 676.
Description: Supervised practicum during which the individual is responsible for the management and instruction of behavior disorder children.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDSP 681. Early Childhood Education of Exceptional Children** 3 Units
Description: Surveys current education and care of exceptional infants and preschool children; including assessment, methods of treatment, and mainstreaming.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDSP 683. Early Childhood Special Education Assessment** 3 Units
Prerequisite(s): Admission to Teacher Education.
Description: Identification and assessment of children with special needs, ages birth to five.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDSP 684. Early Family Intervention for Preschool Disabilities** 3 Units
Description: Focuses on relevant issues in the provision of services to preschool children with disabilities through family intervention strategies and methods.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDSP 686. Programs and Services for Preschool Children With Disabilities** 3 Units
Description: Provides an overview of the types of delivery systems addressed in working with preschool children with disabilities and their families.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EDSP 687. Practicum/Action Research** 6 Units
Description: Preparation of teachers in the development, implementation and evaluation of preschool programs for children with disabilities.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

<p>EDSP 688. Diverse Populations of Gifted Students 3 Units Prerequisite(s): EDSP 581. Description: Creating a learning environment conducive to meeting the needs of gifted and talented students based on culture, social interaction, skill, knowledge, and interests. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>EDSP 698. Supervised Readings 1-3 Units Description: By arrangement with advisor. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>EDSP 689. Curriculum and Instruction for Gifted/Talented Students 3 Units Prerequisite(s): EDSP 581. Description: Curriculum materials and programs, instructional and differentiation strategies, and process skills (creativity, critical thinking, etc) appropriate for teaching gifted/talented students. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>EDSP 699. Thesis or Professional Paper 2-5 Units Prerequisite(s): Consent of advisor. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>EDSP 690. Practicum in Gifted Education 3 Units Prerequisite(s): EDSP 581, EDSP 688, and EDSP 689. Description: Application of knowledge, skills, and competencies delineated in the basic courses in gifted/talented education. Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>EDSP 710. Professional Seminar in Special Education 3 Units Prerequisite(s): Admission to doctoral program. Description: Considers contemporary issues and research in special education. Students are expected to analyze and synthesize information relevant to the field of special education and present it in a series of topical written essays and class presentations. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>EDSP 693. Consulting with Parents and Teachers of Exceptional Children 3 Units Description: Course designed to provide a background in theories and techniques of consulting and advising and to provide experiential opportunities for observing and participating in consulting and advising sessions. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>EDSP 711. Doctoral Professional Seminar: First Year 3 Units Term Typically Offered: Fall Only Description: An orientation to doctoral work in Curriculum & Instruction organized into 3 strands: professional strategies for success, skills critical to successful doctoral work, and cognitive orientations. Note: Cross-listed with EDAP 711. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>EDSP 695. Teleteaching and Distance Education 3 Units Prerequisite(s): Basic computer proficiency. Description: Provides hands-on experiences developing and using technology to teach distant learners. Principles and applications of design, development and delivery of instruction using video, audio and computer communications for two-way interactive video. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>EDSP 712. Practicum in Special Education Consultation 3-6 Units Description: Supervised practicum during which the learner has responsibility for consulting with teachers of exceptional learners regarding special educational problems. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>EDSP 696. Independent Study in Special Education 1-3 Units Description: By arrangement with advisor. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>EDSP 720. Historical and Philosophical Bases of Special Education 3 Units Prerequisite(s): Education major and consent of instructor. Description: The content of this course will include the history and philosophical background of the development of special education. It will include a comparative review of special education in various countries and general direction of current international trends and developments in the field by educators of international prominence. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>EDSP 697. Topical Seminar 1-4 Units Description: Intensive study of topics indicated. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>EDSP 795. Doctoral Research 1-15 Units Prerequisite(s): Passing PhD Comprehensive Examination and admission to candidacy for the Doctoral Degree. Description: Research for the doctoral degree/dissertation. Note: Cross-listed with ECPY 795, EDAP 795, and LEAD 795. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>

EDSP 796. Research Literature in Special Education
Description: For EdS or PhD candidates only.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

1-6 Units

EDSP 798. Internship/Field Experience in Special Education
Description: For PhD candidates only.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

3 Units

EDSP 799. Professional Paper
Description: For EdS or PhD candidates only.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

1-6 Units

Education: Teacher Preparation (EDTP)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

EDTP 501. General Methods 3 Units
Prerequisite(s): Admission to teacher education.
Description: Prepares pre-service teachers to: identify appropriate learning goals for students; design learning experiences that include a variety of developmentally appropriate instructional strategies; manage a range of students, materials, and classroom activities; and honor students' diversity with respect to learning style, motivation, race/ethnicity, gender, and language proficiency.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 502. Exploring Teaching in the Sociopolitical Contexts of P-12 Schools 3 Units

Prerequisite(s): Admission to teacher education.
Description: The sociocultural contexts of P-12 teaching are ever shifting. Society's expectations for schools and the role that teachers are expected to assume must be understood in relation to the social, cultural, political, and historical contexts from which they arise. Teacher candidates must be made aware of the ways in which these multiple and overlapping contexts influence their future work as classroom teachers.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 503. Developing Cross-Cultural Competence: Teaching Students from Diverse Backgrounds 3 Units

Prerequisite(s): Admission to teacher education.
Description: Extends the principles of curriculum, development, teaching and learning introduced in previous courses to working with students from diverse, ethnic, racial, linguistic, and socioeconomic backgrounds.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 504. Teaching with Technology 2 Units

Prerequisite(s): Admission to teacher education.
Description: Leading teachers to understand and apply current technologies in classroom instruction. The tools of technology are explored for their creative application in education of P-12 children across the curriculum.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 505. Challenging Advanced Learners 1 Unit

Prerequisite(s): EDTP 450 (or concurrent), EDTP 612 (or concurrent), EDTP 613 (or concurrent), EDTP 615 (or concurrent), EDTP 616 (or concurrent), EDTP 617 (or concurrent), EDTP 618 (or concurrent), EDTP 619 (or concurrent), or permission of instructor.
Description: Study of methods for identifying gifted/talented students and differentiating curriculum and instruction to meet their needs.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 506. Public Schools in America: Understanding our Past to Envision our Future 3 Units

Term Typically Offered: Occasionally Offered
Prerequisite(s): Admission to Teacher Education Program.
Description: An examination of the historical and philosophical foundations of education in a socially and culturally diverse country.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 511. Proficiency Evaluation in Interdisciplinary Early Childhood Education 3 Units**Grading Basis:** Pass/Fail**Term Typically Offered:** Occasionally Offered**Prerequisite(s):** Bachelor's degree in early childhood, special education, or child development, two years of successful experience as an early childhood lead teacher or director.**Description:** Designed for degreed, experienced early childhood professional to document proficiency on the KY IECE Teacher Standards of the Child Care Director's Credential.**Note:** Does not count toward a master's degree.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 522. Methods of Teaching Grammar, K-12 3 Units**Term Typically Offered:** Occasionally Offered**Prerequisite(s):** Admission to Teacher Education.**Description:** Examination of K-12 Common Core State Standards for Language and best practices in grammar study. Development of research-based lessons and strategies for teaching grammar in the context of reading and writing instruction.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 532. Interdisciplinary Early Childhood Education Curriculum 3 Units**Term Typically Offered:** Fall Only**Prerequisite(s):** Admission to the professional program; concurrent enrollment in EDSP 542.**Description:** Research-based approaches to planning and implementing developmentally appropriate standards-based classroom activities, lessons, and materials that develop literacy, mathematics, science, and social studies learning in young children birth through age five. Also includes examination of contemporary early childhood curricula and approaches appropriate for children from diverse cultural backgrounds.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 535. Classroom Speech Correction 3 Units

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 540. Teaching Adolescent Readers 3 Units**Description:** Examines active reading processes, instructional strategies, and appropriate adolescent literature for teaching both the developmental and the remedial reader in secondary language arts.**Note:** Cross-listed with EDAP 540.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 541. Teaching Middle School 3 Units**Prerequisite(s):** Admission to the Teacher Education Program.**Description:** An in-depth study of philosophy, organizational patterns, developmental issues, and curriculum concepts related to teaching at the middle level.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 580. Digital Citizenship: Technology and Teaching 3 Units**Term Typically Offered:** Occasionally Offered**Prerequisite(s):** Admission to Teacher Education or consent of instructor.**Description:** Teachers understand and apply the concept of digital citizenship as they explore the creative application of current tools of technology in the education of K-12 children.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 581. Technology Applications for Mathematics Teaching 3 Units**Prerequisite(s):** Admission to the Middle School or Secondary MAT program or consent of instructor.**Description:** Methods, materials, and techniques to support the meaningful and appropriate use of technology in the teaching of middle and high school mathematics.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 582. Technology Applications for Science Teachers 3 Units**Prerequisite(s):** Admission to Middle School or Secondary MAT program or consent of instructor.**Description:** Methods, materials, and techniques to support the meaningful and appropriate use of technology in the teaching of middle and high school science.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 597. Special Topics in Teaching and Learning 3 Units**Term Typically Offered:** Fall, Spring, Summer**Description:** Current topics within the fields of teaching and learning. Course topics will vary as needed. Refer to the Schedule of Courses for offerings in a particular semester.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 599. Music, Art, and Motion in P-5 3 Units**Term Typically Offered:** Fall, Spring**Description:** Examines the instructional methods and curricular materials appropriate for incorporating the concepts and skills of art, music, and movement education in grades P-5.**Note:** Cross-listed with EDTP 399.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 602. Exploring Teaching in the Sociopolitical Contexts of P-12 Schools 3 Units

Prerequisite(s): Admission to teacher education.

Description: The sociocultural contexts of P-12 teaching are ever shifting. Society's expectations for schools and the roles that teachers are expected to assume must be understood in relation to the social, cultural, political, and historical contexts from which they arise. Teacher candidates must be made aware of the ways in which multiple and overlapping contexts influence their future work as classroom teachers.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 603. P-5 Language Arts Methods 3 Units

Prerequisite(s): EDTP 602, ECPY 607, and EDTP 501.

Description: Examines specific strategies and practices for teaching children with and without disabilities, giftedness, and other individual differences in grades P-5.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 604. P-5 Mathematics Methods 3 Units

Prerequisite(s): EDTP 602, ECPY 607 and EDTP 501.

Description: Investigation of trends, learning theories, instructional activities, and manipulative materials applicable to mathematics education in the elementary school. The focus of this course is on means for improving the teaching of mathematics in the elementary school for all learners. Particular attention will be given to the implementation of the National Council of Teachers of Mathematics' Principles and Standards for School Mathematics. In addition, there will be an emphasis on developmental approach to mathematics learning, teaching, and assessment.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 605. Teaching Elementary School Science 3 Units

Prerequisite(s): EDTP 602, ECPY 607 and EDTP 501.

Description: Examines the instructional methods and curricular materials appropriate for teaching the concepts and skills of science in grades P-5.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 606. P-5 Social Studies Methods 3 Units

Prerequisite(s): EDTP 602, ECPY 607 and EDTP 501.

Description: Examines specific strategies and practices for teaching social studies to all children in grades P-5.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 607. Middle School Language Arts Methods 3 Units

Prerequisite(s): Must be admitted to the Teacher Education Program.

Description: Application of methods and materials to teaching middle school Language Arts effectively.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 608. Middle School Math Methods 3 Units

Prerequisite(s): Must be admitted to the Teacher Education Program.

Description: Application of methods and materials to teaching middle school Mathematics effectively.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 609. Middle School Science Methods 3 Units

Term Typically Offered: Spring Only

Prerequisite(s): Must be admitted to the Teacher Education Program.

Description: Application of methods and materials to teaching middle school science effectively.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 610. Middle School Social Studies Methods 3 Units

Prerequisite(s): Must be admitted to the Teacher Education Program.

Description: Application of methods and materials to teaching middle school Social Studies effectively.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 611. Music Student Teaching: Elementary/Secondary II 4 Units

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 612. Student Teaching: P-12 6-9 Units

Prerequisite(s): Admission to the Teacher Education Program; Approval of Middle/Secondary Program.

Description: Fifteen weeks of supervised observation, participation and teaching in P-12 schools.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 613. Art Student Teaching in the Elementary/Secondary Schools II 4 Units

Description: Provides supervised observation, participation and teaching. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 615. Student Teaching: Elementary School 3-9 Units

Term Typically Offered: Fall, Spring

Prerequisite(s): Passing mid-program assessment of teacher certification program.

Description: Approximately 15 weeks of full day co-teaching in an Elementary School setting with a placement in primary grades and a placement in intermediate grades.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 616. Student Teaching in Elementary Grades (Intermediate) 3 Units

Term Typically Offered: Fall, Spring

Prerequisite(s): Passing mid-program assessment of teacher certification program.

Description: Supervised observation, participation, and co-teaching in elementary schools, with a placement in grade 4 or grade 5. Regulation requires a minimum of 35 full days.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 617. Student Teaching: Middle School 6-9 Units

Prerequisite(s): Admission to the Teacher Education Program; Approval of Middle/Secondary Program.

Description: Fifteen weeks of supervised observation, participation, and teaching in middle schools.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 618. Student Teaching: Middle and High School 6-9 Units

Prerequisite(s): Admitted to the Teacher Education Program; approval of Middle/Secondary Program.

Description: Fifteen weeks of supervised observation, participation, and teaching in middle and high schools.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 619. Student Teaching: High School 6-9 Units

Prerequisite(s): Admitted to the Teacher Education Program; approval of Middle/Secondary Program.

Description: Fifteen weeks of supervised observation, participation, and teaching in high schools.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 620. Reading and Writing Across the Curriculum 3 Units

Description: Exploring the processes, products and values of literacy in various areas of the curriculum, this course explores and applies literature of all forms in service to the various disciplines and societal roles.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 621. Intensive Field Experience 1-6 Units

Grading Basis: Pass/Fail

Prerequisite(s): EDTP 603 (or concurrent), EDTP 604 (or concurrent), EDTP 605 (or concurrent), or EDTP 606 (or concurrent).

Description: Field experience observing, analyzing, participating, and teaching in schools. Students will connect coursework, theory, and practice.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 622. High School English Methods 3 Units

Prerequisite(s): Must be admitted to the Teacher Education Program.

Description: Application of methods and materials to teach high school English effectively.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 623. High School Mathematics Methods 3 Units

Prerequisite(s): Must be admitted to the Teacher Education Program.

Description: Application of methods and materials to teaching high school Mathematics effectively.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 624. High School Science Methods 3 Units

Term Typically Offered: Spring Only

Prerequisite(s): Must be admitted to the Teacher Education Program.

Description: Application of methods and materials to teaching high school Science effectively.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 625. High School Social Studies Methods 3 Units

Prerequisite(s): Must be admitted to the Teacher Education Program.

Description: Application of methods and materials to teaching high school Social Studies effectively.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 626. Pre-Student Teaching: Orientation 3 Units

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 627. Practicum for Alternative Certification Program 1.5 Units

Term Typically Offered: Fall, Spring

Description: This course meets off campus and consists of mentoring and supervision by a University mentor. The program coordinator oversees the practicum.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 628. Business/Marketing Methods, 5-12 3 Units

Prerequisite(s): Must be admitted to the Teacher Education Program, Application of methods and materials to teaching middle & high school Business/Marketing effectively.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 629. World Language Methods, P-12 3 Units

Prerequisite(s): Must be admitted to the Teacher Education Program.

Description: Application of methods and materials for teaching World Languages effectively.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 630. Building Learning Communities 4 Units

Description: Philosophies and methods for creating and managing learning communities supportive of the intellectual, academic, social-emotional, and physical needs of diverse students in classroom and pre-school settings.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 631. Integrated Teaching and Learning I 3 Units

Description: Provides an introduction to the social and cultural aspects of teaching, instructional planning, KERA and content expectations, classroom management, adolescent development, culture, learning theories, policies, resources, ethics, legal expectations, and special education.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 632. Integrated Teaching and Learning II 3 Units

Prerequisite(s): EDTP 631.

Description: Continuation of general methods, classroom management, applied historical and social foundations; exploration of developmental theory and implications for learning and teaching, grouping, cooperative learning, technology, multiple intelligences, differentiated instruction, reflective problem solving, high incidence disabilities, and leadership.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 633. Integrated Teaching and Learning III 3 Units

Prerequisite(s): EDTP 632.

Description: Explores personal philosophy of teaching and learning, key issues in education, issues of race, ethnicity, and gender in school and society, community and parental role, ethnographic observation, low incidence disabilities, technology applications and professional development.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 637. Mathematics and Science Methods, Integrated Early Childhood Education 4 Units

Prerequisite(s): Graduate status; EDTP 527; Admission to IECE MAT Program.

Description: Research-based approaches to planning and implementing developmentally appropriate standards-based classroom activities, lessons, and materials that develop mathematics and science understandings in young children birth through age five.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 638. Literacy and Social Studies Methods in Interdisciplinary Childhood Education 3 Units

Description: Research-based approaches to planning and implementing developmentally appropriate standards-based classroom activities, lessons, and materials that develop literacy and social studies understandings in young children birth through age five.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 639. Interdisciplinary Seminar in Early Childhood 3 Units

Description: An interdisciplinary seminar focusing on a variety of topics and issues relevant to early childhood.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 641. Interdisciplinary Content Methods in Early Childhood Education 3 Units

Description: Research-based approaches to planning and implementing developmentally appropriate standard-based classroom activities, lessons, and materials that develop literacy, mathematics, science and social studies understandings in young children birth through age five.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 647. Teaching Mathematics to Students with Disabilities 3 Units

Prerequisite(s): Admission to a Special Education Teacher Certification program.

Description: Successful performance on the Mathematics Qualifying Assessment Test or C+ or higher on either MATH 151 or MATH 152.

Note: Cross-listed with EDSP 647.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 650. Elementary Content Methods: Mathematics and Science 3 Units

Term Typically Offered: Fall, Spring

Prerequisite(s): Admission to Elementary Teacher Residency Program or Early Elementary (P-5) Alternative Certification Program.

Description: An investigation of trends, learning theories, instructional activities, and manipulative materials applicable to mathematics and science education in the elementary school with a focus on ways to improve the teaching of mathematics and science to all elementary students.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 651. Comprehensive Teaching and Learning I 3 Units

Term Typically Offered: Fall, Summer

Description: This course prepares Urban Residency students to become effective educational practitioners. Specifically, this course provides an introduction to the social and cultural of teaching, instructional planning, content expectations, classroom management, adolescent development, learning theories, policies, resources, ethics, legal expectations, and special education. The course will be taught in conjunction with administrators and support staff from Jefferson County Public Schools in Louisville Kentucky. Specific ideals and needs outlined by the school district will be infused into each class discussion and assignment.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 652. Comprehensive Teaching and Learning II 3 Units

Term Typically Offered: Fall, Summer

Prerequisite(s): EDTP 651.

Description: Continuation of general methods, classroom management, applied historical and social foundations; exploration of developmental theory and implications for learning and teaching, grouping, cooperative learning, technology, multiple intelligences, differentiated instruction, reflective problem solving, high incidence disabilities, and leadership. The course will be taught in conjunction with administrators and support staff from Jefferson County Public Schools in Louisville Kentucky. Specific ideals and needs outlined by the school district will be infused into each class discussion and assignment.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 653. Comprehensive Teaching and Learning III 3 Units

Term Typically Offered: Fall, Summer

Prerequisite(s): EDTP 652.

Description: This course explores personal philosophy of teaching and learning, key issues in education, issues of race, economics, ethnicity, and gender in school and society, community and parental role, ethnographic observation, low incidence disabilities, technology applications and professional development. The course will be taught in conjunction with administrators and support staff from Jefferson County Public Schools in Louisville Kentucky. Specific ideals and needs outlined by the school district will be infused into each class discussion and assignment.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 654. Support and Mentoring I 1.5 Units

Term Typically Offered: Fall, Summer

Prerequisite(s): Candidates must be admitted into the Jefferson County Public School Urban Teacher Residency Program; Approval of Elem/Middle/Secondary Program; must have secured employment as a teacher in an accredited school and have been issued a Temporary Provisional License by KDE.

Description: Comprehensive and directed practicum experience for JCPS Urban Teacher Residency Candidates during the first semester of the program.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EDTP 655. Support and Mentoring II 1.5 Units**Term Typically Offered:** Fall, Summer**Prerequisite(s):** Candidates must be admitted into the Jefferson County Public School Urban Teacher Residency Program and successfully completed EDTP 654.**Description:** Comprehensive and directed practicum experience for JCPS Urban Teacher Residency Candidates during the second semester of the program.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**EDTP 656. Elementary Content Methods: Language Arts & Social Studies 3 Units****Term Typically Offered:** Fall, Spring**Prerequisite(s):** Admission to Urban Elementary Teacher Residency Program or Early Elementary (P-5) Alternative Certification Program.**Description:** An investigation of trends, learning theories, instructional activities, and manipulative materials applicable to language arts and social studies education in the elementary school with a focus on ways to improve the teaching of literacy and social studies to all elementary students.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**EDTP 677. Capstone Seminar: Initial Certification 3 Units****Prerequisite(s):** EDTP 607, EDTP 608, EDTP 609, EDTP 610, EDTP 622, EDTP 623, EDTP 624, EDTP 625, EDTP 628, or EDTP 629; EDTP 612 (or concurrent), EDTP 617 (or concurrent), EDTP 618 (or concurrent), or EDTP 619 (or concurrent).**Description:** Analysis, synthesis, and evaluation skills applied to the student teaching experience; collaborative problem solving; action research in classrooms.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**EDTP 678. Supporting the Second Year Alternative Certification Teacher I 1.5-3 Units****Term Typically Offered:** Fall Only**Prerequisite(s):** Successful completion of year one of the Alternative Certification Program.**Description:** This seminar course provides cohort members deeper knowledge about implementation of instruction, assessment, collaboration, classroom climate, and personal/professional growth.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**EDTP 679. Supporting the Second Year Alternative Certification Teacher II 1.5-3 Units****Term Typically Offered:** Spring Only**Prerequisite(s):** EDTP 678.**Description:** This seminar provides second-year alternative certification teacher candidates extended knowledge of current practice in selected areas, such as the Learner and Learning, Instructional Practices, Content and Professional Responsibility.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**EDTP 697. MAT Special Topics in Teaching and Learning 1-3 Units****Term Typically Offered:** Fall, Spring, Summer**Description:** Current topics within the fields of teaching and learning.

Course topics will vary as needed.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Educational and Counseling Psychology (ECPY)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

ECPY 501. Independent Study in Educational Psychology 1-3 Units**Prerequisite(s):** To be arranged with the dean.**Description:** Opportunity for the student, under the supervision of a sponsoring faculty member, to pursue individualized study related to research or practice that is not included in regular courses in the curriculum.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**ECPY 502. Independent Study in Educational Psychology 1-3 Units****Prerequisite(s):** To be arranged with the dean.**Description:** Opportunity for the student, under the supervision of a sponsoring faculty member, to pursue individualized study related to research or practice that is not included in regular courses in the curriculum.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 507. Learning Theory and Human Growth and Development 3 Units
Term Typically Offered: Fall Only

Description: Basic principles of learning theory and human development. Included are the major theories of learning including behaviorism, cognitive, and cultural historical activity theory along with physical, social, cognitive, emotional, language, and cultural development as they apply to children and youth including those with special needs.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 512. Learning and Cognition in Education 3 Units

Prerequisite(s): Consent of instructor.

Description: A survey of major theoretical models in the area of cognition and learning. Emphasis upon applications of theory in the classroom and in counseling. Implications are drawn from several models and contrasted in the context of the individual student's readiness, motivation and aptitude.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 513. Individual Differences in Education 3 Units

Prerequisite(s): Consent of instructor.

Description: A survey of individual differences in socio-cognitive and personality areas of development based upon current literature. Ways to meet individual and group needs in educational settings; interpretation of individual differences for effective classroom instruction.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 525. Topical Studies in Educational Psychology I 1-3 Units

Prerequisite(s): Consent of instructor.

Description: Investigation of current concerns and issues in educational psychology.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 526. Topical Studies in Educational Psychology II 1-3 Units

Prerequisite(s): Consent of instructor.

Description: Investigation of current concerns and issues in educational psychology.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 527. Workshop in Educational Psychology I 1-4 Units

Prerequisite(s): Consent of instructor.

Description: Topical workshop on educational psychology concerns.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 528. Workshop in Educational Psychology II 1-4 Units

Prerequisite(s): Consent of instructor.

Description: Topical workshop on educational psychology concerns.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 540. Evaluation and Measurement in Education 3 Units

Description: Intended to acquaint the student with evaluation and measurement in education and counseling. Content will include reliability, validity, test construction, and methods of evaluation and testing in various settings.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 596. Seminar in Guidance 1-4 Units

Prerequisite(s): Majors are urged to take seminars prior to or concurrent with practicum.

Description: The investigation of special problems in counseling.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 597. Seminar in Guidance 1-4 Units

Prerequisite(s): Majors are urged to take seminars prior to or concurrent with practicum.

Description: The investigation of special problems in counseling.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 600. Introduction to Counseling and Psychotherapy 3 Units

Description: Introduction to the field of counseling and psychotherapy.

Course includes an introduction to the field in general including ethics, professional issues, service settings, and areas of specialization.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 601. Introduction to Clinical Mental Health Counseling 3 Units

Prerequisite(s): Admission to School of Interdisciplinary and Graduate Studies.

Description: The course provides an introduction to the historical and contemporary foundations of clinical mental health counseling including roles and functions of the clinical mental health counselor in today's society.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 605. Human Development 3 Units

Description: Survey of the principles of development from conception to adulthood, emphasizing biological, environmental, and cultural factors affecting development.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 607. Learning Theory and Human Growth and Development 3 Units
Term Typically Offered: Fall Only

Description: Basic principles of learning theory and human development. Included are the major theories of learning including behaviorism, cognitive, and cultural historical activity theory along with physical, social, cognitive, emotional, language, and cultural development as they apply to children and youth including those with special needs.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 611. Learning Systems: Theory and Practice 3 Units

Description: Theories, principles and research of learning are introduced. The application of learning and behavioral constructs in classroom and counseling settings are contrasted with one's readiness, motivation, and aptitude for learning.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 619. Empirical and Theoretical Foundations of Counseling and Psychotherapy 3 Units

Description: Review of the empirical foundations and survey of major theoretical approaches to counseling and psychotherapy.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 620. Classroom-Based Guidance/Counseling 3 Units

Description: An introductory survey of counseling principles, procedures, functions, and techniques, with emphasis on classroom application. To be given in the interdisciplinary context of an effective program.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 621. Differential Diagnosis and Treatment in Counseling 3 Units

Prerequisite(s): Consent of instructor for non-majors.

Description: Diagnostic procedures and differential treatment strategies for use by counselors and others in the helping professions.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 623. Helping Skills for Student Affairs Professionals 3 Units

Prerequisite(s): ECPY 660.

Description: Introduction to and overview of individual/group counseling techniques with focus on knowledge and helping skills applicable for use by practitioners non-therapeutic, higher education settings.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 624. Foundations of School Counseling 3 Units
Prerequisite(s): ECPY 521.

Description: Organization, administration, and program development in the educational environment. Patterns for implementation of the services of counseling, testing, consultation, information and placement.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 625. Elementary School Counseling 3 Units

Prerequisite(s): ECPY 512 and ECPY 521.

Description: Organizational overview of elementary school counseling; career development in middle childhood; the role and function of the elementary school counselor. Study and application of counseling and consulting techniques appropriate to the elementary school setting.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 626. Consultation 3 Units

Description: Introduction to theory, research and practice in the techniques of educational and psychological consultation with both individuals and organizations.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 627. Leadership & Professional Orientation in School Counseling 3 Units

Description: Prepares school counselors for leadership within the school and professional community, focused on student learning and student well being.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 628. Theories and Techniques of Counseling Children 3 Units

Prerequisite(s): ECPY 651.

Description: Intensive study of counseling theories and techniques with children. Prepares students for counseling practice with children.

Note: Non-majors must have consent of instructor.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 629. Theories and Techniques of Counseling and Psychotherapy 3 Units

Prerequisite(s): ECPY 601 (for Clinical Mental Health Counseling and School Counseling students) and ECPY 619.

Description: Focuses on methods and techniques of counseling. Theory and research will be studied including training in current professional practice and empirically supported approaches to therapy with an emphasis on cognitive, behavioral and affective theory.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 630. Theories and Techniques of School Counseling 3 Units

Description: Intensive study of counseling theories and techniques with children and adolescents in a school setting

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- ECPY 631. Adolescence** **3 Units**
Prerequisite(s): ECPY 305 or PSYC 201.
Description: Examination of current socio-psychological research on developmental patterns associated with puberty, identity, cognition, and socio-emotional growth. Analysis of various theoretical models. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 632. Clinical Art Therapy I: Theories** **3 Units**
Prerequisite(s): Admission to the program.
Description: Overview of history and theoretical approaches in art therapy. Emphasis on the ETC, MDV, defense mechanisms, graphic development, and life span clinical issues as they interface with managed care and performance indicators. Cultural issues related to the clinical context will be explored. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 633. Clinical Art Therapy II: Assessment and Practice** **3 Units**
Prerequisite(s): Admission to the program.
Description: Fundamentals of graphic analysis, the indicators of various psychopathologies, and the application of interventions in treatment (according to DSM IV). Practice in interpretation of drawings and case discussion. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 634. Family Systems Process** **3 Units**
Prerequisite(s): Permission of major advisor.
Description: Content will cover family life cycle development, healthy family functioning, life cycle issues of the divorced and blended family and an introduction to assessment indicators. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 635. Family Assessment Concepts** **3 Units**
Description: Focuses on theoretical concepts from the major theories of family systems therapy with an emphasis on assessment and treatment planning. Therapist skills in assessment interviewing will be discussed and simulated. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 636. Family Assessment Practice** **3 Units**
Description: Provides clinical supervision of family assessment and consultation skills for practicum based students. Emphasis placed on engagement and problem identification. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 637. Expressive Techniques in Psychotherapy** **3 Units**
Description: Teaches theory and techniques from various expressive modalities including relaxation, guided imagery, play, dance/movement, focusing, music drama, poetry, contour drawing, and problem-focused art therapy. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 638. Group Art Therapy Techniques** **3 Units**
Prerequisite(s): Consent of instructor.
Description: Foundations in group dynamics and group therapy through expressive art techniques; experiential therapy basis will be used. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 639. Prevention & Treatment of Substance Abuse** **3 Units**
Prerequisite(s): Admission to School of Interdisciplinary and Graduate Studies.
Description: The course provides an overview of the prevention and treatment of substance abuse in youth and adults for mental health professionals. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 640. Assessment Methods for Counselors** **3 Units**
Prerequisite(s): ECPY 540.
Description: The course covers methods of data collection, standardized assessment instruments used in the practice of mental health counseling, and interpretation of assessment data. The ethical issues of testing are included. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 641. Applied Methods in Art Therapy** **3 Units**
Prerequisite(s): Admission to the program.
Description: Studio-lab in the practical application of expressive and therapeutic techniques, role playing, and symbolic awareness. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 642. Symbols of Self-Actualization** **3 Units**
Prerequisite(s): Consent of instructor.
Description: Study of symbols encountered in the development of self in art, mythology, and psychology. Emphasis on archetypal ego symbolism and symbols of transformation and their exploration through art expression. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 643. Practicum in Art Therapy-Counseling** **3 Units**
Term Typically Offered: Spring Only
Prerequisite(s): Admission to the program.
Description: Provides students with opportunities to visit and evaluate practicum sites. Students will analyze skills necessary for art therapy field work at various practicum sites, and will assess their interests and skill level for various practicum opportunities. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- ECPY 644. Introduction to Sandtray** 3 Units
Term Typically Offered: Fall, Spring, Summer
Description: This course is a well-suited elective for those in the counseling degree programs. Students will be able to add an expressive tool in their counseling skills toolbox. This course will be both lecture and experiential making it a hybrid course. Lecture will cover the difference between Sandtray Therapy and Sandplay with a stronger emphasis on Sandtray Therapy. The neuroscience of Sandtray Therapy incorporating the theories of Drs. Stephen Porges, Daniel Siegal and Bessel van der Kolk will be presented. Students will learn the therapeutic uses of sandtray therapy as they experience the sandtray through didactic "play" in the sandtray and processing of the sandtray with role-playing. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 645. Gender, Sexuality and Sexual Abuse Issues in Therapy** 3 Units
Prerequisite(s): Consent of instructor.
Description: Gender, sexuality, and sexual abuse issues are presented from the viewpoint of consumers' mental health treatment. Emphasis placed on understanding the contribution of environment and individual experience to current mental health functioning, proper methods of intervention and the process of change. A systems/developmental approach is employed. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 648. Psychological Assessment I** 3 Units
Prerequisite(s): ECPY 540.
Fee: An additional \$100.00 is charged for this course.
Description: The first of a two-course sequence that explores theory and applications of individual psychological assessment. Explores the theory of intelligence, neuro-psychological assessment, abilities measures, the ethical, professional, and legal issues of testing in different settings. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 649. Psychological Assessment II** 3 Units
Prerequisite(s): ECPY 648.
Fee: An additional \$100.00 is charged for this course.
Description: The second of a course sequence that explores theory and applications of individual psychological assessment. Explores theory and application of tests and social-emotional functioning, development, personality assessment, the ethical, professional, and legal issues of testing in different settings. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 650. Group Process and Practice** 3 Units
Description: Study of group processes and procedures which are applicable to counseling. Method of instruction is lecture and participation in a group. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 651. Group Procedures With Children** 3 Units
Prerequisite(s): Admission to graduate counselor education or consent of instructor.
Description: Process and practice of group guidance and group counseling with children. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 652. Multicultural Practicum in Art Therapy** 1-3 Units
Prerequisite(s): ECPY 655.
Description: Students participate in a study abroad service learning travel experience in which they design and implement a summer intensive program for children with multiple disabilities outside of mainland United States. The students are responsible for adapting the activities, art materials, and environment to meet the needs of the participants. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 653. Grief Counseling** 3 Units
Term Typically Offered: Spring Only
Description: Provide students with familiarity with utilizing counseling techniques with grieving populations. Purpose of the course is to provide an overview of effective strategies to increase coping with grief issues and to review current theoretical models of treatment. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 654. Group Procedures in School Counseling** 3 Units
Description: Prepares school counselors to develop, conduct, and evaluate group and classroom guidance programs appropriate in P-12 school settings. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 655. Art for Children with Special Needs** 3 Units
Description: Focuses on children's emotional needs and the role expressive experiences play in meeting these emotional needs. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 660. Introduction to Student Personnel Work** 3 Units
Description: A general introduction to the historical, organizational, administrative, and practical areas of student personnel work in higher education. Bases for these areas will be discussed, with the goals and objectives of student personnel work in view. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 661. Theories of College Student Development** 3 Units
Description: Examines and explores the major theories of student development. Discussion will be centered on the application of theories to the different types of student groups found on college campuses. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- ECPY 662. Student Affairs Programs, Policies, and Practices** 3 Units
Prerequisite(s): ECPY 660.
Description: Review of functions of student affairs areas in higher education, how they are administered and what is considered good practice in those areas. Includes housing, counseling center, career planning, financial aid, admission, registration, student activities, student unions, student health and other selected areas.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 663. Multicultural and Diversity Issues** 3 Units
Description: Emphasis will be placed on developing effective communication skills in multicultural settings. Focus will also be directed toward various cultural and ethnic groups.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 664. College Student Sub-Cultures** 3 Units
Description: Overview of various student sub-cultures and professional approaches to development of the students within each culture.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 670. Career Counseling** 3 Units
Description: The study of career development across the life span. Includes a study of the methods and techniques used for assisting career and lifestyle choices.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 671. Psychology of Career Development** 3 Units
Prerequisite(s): ECPY 570 or ECPY 670.
Description: Advanced study of current research and theories of career counseling and career-related assessment.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 672. Practicum in Clinical Mental Health Counseling** 3 Units
Grading Basis: Pass/Fail
Prerequisite(s): ECPY 619, ECPY 629, ECPY 650, and ECPY 730.
Description: Students will develop their skills as a counselor through experience acquired under the supervision of an approved licensed practitioner and weekly meetings with department faculty.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 673. Practicum in Counseling Psychology** 3 Units
Grading Basis: Pass/Fail
Prerequisite(s): ECPY 619, ECPY 629, and ECPY 730.
Description: Students will develop their skills as a counseling psychologist through experience acquired under the supervision of a licensed psychologist and weekly meetings with department faculty.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 674. Practicum in School Counseling** 3 Units
Prerequisite(s): ECPY 619, ECPY 624, ECPY 630, ECPY 650, and ECPY 730.
Description: Provides experience in school counseling under the supervision of a certified School counselor. One hundred hours of service are required and can be achieved by serving 10 hours per week in the K-12 school setting.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 676. INTERNSHIP I in Art Therapy** 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): A grade of B- or better in ECPY 629 Theories and Techniques in Counseling, ECPY 633 Clinical Art Therapy II, and 643 Practicum required prior to ECPY 676 Internship.
Description: Students will gain art therapy and counseling experience under the supervision of approved mental health professional.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 677. Research in Art Therapy and Counseling** 3 Units
Prerequisite(s): Art Therapy Graduate Students.
Description: Seminar presentation of case data and research leading to the completion of a master's paper in art therapy.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- ECPY 698. Supervised Readings** 1-3 Units
Description: By arrangement with advisor and dean.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 699. Thesis or Professional Paper** 3-6 Units
Prerequisite(s): ELFH 600 or equivalent; consent of advisor.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 700. Supervised Research in Educational and Counseling Psychology** 1-6 Units
Prerequisite(s): Admission to doctoral study.
Description: An intensive research apprenticeship with a faculty member. Students assist in formulating research hypotheses, articulating the research design, developing the research method, making arrangements to conduct the study, entering and analyzing the data, and writing up the findings for publication.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 701. Doctoral Professional Seminar in Educational Psychology, Measurement, and Evaluation** 3 Units
Prerequisite(s): Admission to doctoral study.
Description: An orientation to doctoral work educational psychology and research, including professional strategies for success, skills, and cognitive orientations.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 705. Adult Development Theories** 3 Units
Prerequisite(s): Consent of instructor.
Description: A seminar examining physical, psychological, and social changes that occur during adulthood and how those changes affect learning.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 710. Social Ecology & Social Behavior** 3 Units
Prerequisite(s): Doctoral student status or permission of instructor.
Description: The development of culture and the effects of social systems on individual and group behavior including the development and interaction of social systems with individual psychology, biological constraints on social behavior, and the effects of the interaction of different social systems.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 711. Prevention of Mental Disorders: Theory, Research, and Practice** 3 Units
Prerequisite(s): ECPY 600.
Description: The course addresses the prevention of mental disorders, and problem behaviors including facilitation of healthy psychological development of youth. The latest research, theory, and practice in prevention are examined.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 712. Advanced Issues in Human Development** 3 Units
Prerequisite(s): Admission to doctoral study.
Description: Conceptualizes development as result of bi-directional or multidirectional interactions between individual and environment. Emphasis placed on research informing practice and policy with children in home and school settings.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 720. Workshop in Counseling** 1-6 Units
Description: An intensive examination of some specific current or continuing issue or practice in counseling. Review of literature, current field practice, and student participation are stressed.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 721. Advanced Counseling Seminar** 1-8 Units
Prerequisite(s): Consent of instructor.
Description: The topic of this seminar will vary from semester to semester. Written notice of the topic will be given prior to its being offered. The topics will be determined by the instructor and will be of current interest in the field.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 722. Advanced Theories of Counseling and Psychotherapy** 3 Units
Prerequisite(s): Master's degree in Guidance and Counseling or its equivalent and consent of instructor for non-majors.
Description: Covers advanced training in a specific area of counseling and psychotherapy. Topics will be determined by department faculty. Course may be repeated.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 730. Social, Legal & Ethical Issues in Counseling** 3 Units
Description: Examination of current social developments that relate to counseling. Legal perspectives relevant to practice and principles of ethical practice in counseling.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECPY 731. Counselor Education Seminar: Teaching and Ethics in Counselor Education** 3 Units
Prerequisite(s): Admission to doctoral program.
Description: This course provides an introduction to teaching in counselor education programs. The course also addresses ethical, legal, and multicultural considerations in teaching in counselor education programs.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 732. Counselor Education Seminar: Promoting Social Change-Leadership 3 Units

Prerequisite(s): Admission to doctoral program.

Description: Leadership and advocacy as roles of the counselor educator in behalf of the counseling profession and diverse client populations are explored.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 740. Psychometrics and Affective Instrument Development 3 Units

Prerequisite(s): Admission to doctoral program or permission of instructor and ELFH 701 or equivalent.

Description: This course is intended to further students' understanding of psychometrics, with a focus on developing and validating attitude, evaluation, and other affective instruments. This course is intended to teach students to evaluate the psychometric properties of instruments and to develop and validate affective instruments. The course will cover item development, scaling procedures, content validity, unidimensionality, construct validity, "factorial" validity, internal consistency reliability, and brief exposure to generalizability theory and IRT. Students will learn how to conduct exploratory factor analyses, and reliability analyses. Students will create and pilot an affective instrument for the final project.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 745. Systematic Reviewing and Meta-Analysis 3 Units

Prerequisite(s): Admission to doctoral study.

Description: Provides a general overview of all aspects of a scientific literature review, including formulating a problem, finding the relevant literature, coding studies, and meta-analysis.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 746. Secondary Data Analysis 3 Units

Prerequisite(s): Admission to doctoral study; ELFH 701 or 703; ECPY 789.

Description: Practical and methodological issues in secondary data analysis, such as accessing, managing, and preparing data, applying quasi-experimental techniques to large data sets, sampling and weighting issues, and identifying limitations of research.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 750. Group Counseling, Advanced Theory and Practice 3 Units

Prerequisite(s): ECPY 650, master's degree in counseling and consent of instructor for non-majors.

Description: An examination of research theory and relevant literature for application to counseling in groups. Experience and practice are an essential part of the course.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 755. Counselor Supervision 3 Units

Prerequisite(s): MS in counseling or related field, or consent of instructor for non-majors.

Description: Theory, techniques and research in the area of counselor supervision.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 761. Program Development & Evaluation in Student Affairs 3 Units

Prerequisite(s): Consent of instructor.

Description: Methodologies of developing student affairs programs. Needs assessment through summative evaluations. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 762. Training of College Student Personnel Paraprofessionals 3 Units

Prerequisite(s): ECPY 629, ECPY 650, and ELFH 682.

Description: Basic training program for paraprofessionals who work in such traditional settings as residence halls, tutorials, peer advisors and counselors, orientation leaders, other positions where students are providing direct service to other students. Includes experience in a supervised laboratory setting.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 763. Services for Adult and Commuting Students 3 Units

Prerequisite(s): ECPY 661.

Description: Examines the needs of adult and commuting students in post-secondary institutions, how those needs differ from those of residential students and address means of accommodating those needs.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 764. Structural Equation Modeling 3 Units

Description: This course focuses on basic concepts, applications, and interpretations of structural equation models. Students should have a thorough understanding of multiple regression analysis. Exposure to EFA and ANOVA is recommended.

Note: Cross-listed with ELFH 764 and EDAP 764.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 765. Hierarchical Linear Modeling 3 Units

Description: This course focuses on the analysis and interpretation of organizational and longitudinal data using hierarchical linear modeling. Students taking this course should have a strong background in multiple regression.

Note: Cross-listed with ELFH 765 and EDAP 765.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 775. Biological Bases of Behavior 3 Units

Prerequisite(s): ECPY 621 or consent of instructor.

Description: The study of biological bases for behavior including physiological and neurological structure, medical procedures, trauma, psychotropic and illicit and licit drugs.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 780. Advanced Practicum in Counseling 1-9 Units

Prerequisite(s): Master's degree or its equivalent in counseling or student personnel work, including a previous practicum; or consent of instructor for non-majors.

Fee: An additional \$50.00 is charged for this course.

Description: Student must make application for this course in advance of actual enrollment (e.g., a student wishing to take practicum during the summer should apply the preceding fall term). Supervised experience in counseling and/or student personnel work.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 781. Field Study in Counseling 1-9 Units

Prerequisite(s): Admission to post-master's programs.

Description: Field observation or experience.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 782. Doctoral Internship 1-6 Units

Grading Basis: Pass/Fail

Prerequisite(s): Doctoral students in counseling and student personnel or consent of instructor.

Description: Provides on-the-job supervised learning experience for doctoral students in Counseling and Personnel Services. A prospectus describing in concise detail the internship duties must be submitted the semester before the internship begins. May be repeated for up to 12 semester hours of credit.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 789. Advanced Research Design 3 Units

Term Typically Offered: Spring Only

Prerequisite(s): LEAD 701, and either LEAD 600 or EDAP 639, or permission of instructor.

Description: Discussion of quantitative research methods and their application to the design of a study. Emphasis on designs for causal inferences about the effects of an intervention on outcomes variables, especially quasi-experimental designs.

Note: Cross-listed with EDAP 789, LEAD 789, HSS 789.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 793. Doctoral Seminar in Educational and Counseling Psychology 1-3 Units

Prerequisite(s): Admission to doctoral study.

Description: Analysis of current issues and research in the field of counseling.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 794. Doctoral Seminar in Counseling and Student Personnel**3 Units**

Prerequisite(s): Admission to doctoral study.

Description: Analysis of current issues and research in the field of counseling.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 795. Doctoral Research 1-15 Units

Prerequisite(s): Completion of coursework for PhD program or successful completion of comprehensive examinations.

Description: Doctoral students must register for the course by using the departmental prefix, corresponding to their dissertation chair.

Note: Cross-listed with EDSP 795, EDAP 795, and LEAD 795.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 796. Research Literature 1-6 Units

Description: For advanced graduate students only. Consent of instructor and department chair required.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 797. Internship in Educational Psychology, Measurement, and Evaluation 3 Units

Prerequisite(s): Admission to doctoral study.

Description: This course will provide students with an opportunity to work in an applied educational research setting, conducting research on a variety of topics as needed by practicum site.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 798. Field Study 2 Units

Description: For EdS candidates only.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECPY 799. Professional Paper 1-5 Units

Description: For EdS candidates only. To provide course credit for the EdS candidate in completing the required independent professional project.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Electrical and Computer Engineering (ECE)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

ECE 500. Special Topics in Electrical Engineering 1-6 Units

Term Typically Offered: Fall, Spring, Summer

Description: Exploration of one or more ECE topics not covered in the regular course offerings.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECE 505. Graduate-Professional Project in Electrical Engineering 1-6 Units

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): Approval of a faculty sponsor.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECE 510. Computer Design 3 Units

Term Typically Offered: Fall, Spring

Prerequisite(s): ECE 210.

Corequisite(s): ECE 511.

Description: Review of logic design and elementary computer organization. Design of the central processing unit, memory, control, and input-output portions of a computer. The VHDL hardware design language will be used.

Note: Cross-listed with CSE 510.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECE 511. Computer Design Laboratory 1 Unit

Term Typically Offered: Fall, Spring

Prerequisite(s): ECE 210.

Corequisite(s): ECE 510 or CECS 510.

Description: Experiments in the design of the central processing unit, memory, control, and input-output portions of a computer using VHDL for software simulation.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECE 514. Introduction to VLSI Systems Laboratory 1 Unit

Term Typically Offered: Occasionally Offered

Prerequisite(s): ECE 510 (or concurrent) or CECS 510 (or concurrent) or consent of instructor.

Corequisite(s): ECE 515.

Description: Design of logic circuits and subsystems using CAD tools: layout, verification, parameter extraction, circuit- and logic-level simulation.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECE 515. Introduction to VLSI Systems 3 Units

Term Typically Offered: Occasionally Offered

Prerequisite(s): ECE 510 (or concurrent) or CECS 510 (or concurrent) or consent of instructor.

Corequisite(s): ECE 514.

Description: MOS devices and circuits, electrical and logic design principles. Fabrication steps, design rules, electrical parameters, extraction, delays. Logic/switch arrays, dynamic precharge logic, precharge forms, finite state machines, registers, memories, subsystem design examples.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECE 516. Microcomputer Design 4 Units

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): ECE 412 or CECS 412 or consent of instructor.

Description: Design and construction of microcomputers with microprocessors and digital integrated circuits. Breadboarding, hardware design and software design are emphasized. The class is separated into groups and each group designs, breadboards and tests a complete microcomputer system including interfaces to peripheral devices.

Note: Cross-listed with CECS 525.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECE 518. Fundamentals of Computer Communications and Networks 3 Units

Term Typically Offered: Fall, Spring

Prerequisite(s): ECE 360 or IE 360, and CSE 412.

Description: Data communications: The exchange of data between devices is covered. The key aspects of transmission interfacing, link control, and multiplexing are examined. Data communication networking: Examines the internal mechanisms by which communication networks provide a data transfer service for attached devices.

Note: Cross-listed with CSE 516.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECE 520. Digital Signal Processing 3 Units

Term Typically Offered: Fall, Spring

Prerequisite(s): ECE 420.

Corequisite(s): ECE 521.

Description: Discrete time signals and systems; Discrete Fourier Transforms, FFT algorithms, flow graph and the matrix representation of digital filters; FIR and IIR filter design techniques; quantization effects; spectral estimation; current applications of digital signal processing.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- ECE 521. Digital Signal Processing Laboratory** 1 Unit
Term Typically Offered: Fall, Spring
Prerequisite(s): ECE 420.
Corequisite(s): ECE 520.
Description: Focuses on the implementation of common digital signal processing functions using state-of-the-art DSP devices and software. Introduction to fundamentals of discrete-time signal processing and digital signal processor architectures and applications. Emphasis on laboratory experience involving generation of deterministic and random signals; digital filter design; quantization effects; FFT computation; linear system analysis; speech processing.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 523. Introduction to Biometrics** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): ECE 420 and Senior standing.
Description: Biometric approaches aim at identification based on a physical characteristic. Survey of biometric techniques with focus on non-intrusive approaches. Topics covered include image formation, sensors, motion tracking, and face recognition algorithms.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 526. LabVIEW for Electrical Engineers** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): ECE 420 (or concurrent) or permission from the instructor.
Description: Introduction to capabilities of LabVIEW software for electrical engineers. Weekly labs build mastery of LabVIEW applications such as: data acquisition and analysis, instrumentation, and DSP programming.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 530. Introduction to Random Processes and Estimation Theory** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): ENGR 330; ECE 360 or IE 360; and ECE 420.
Description: Introduction to the theory and applications of random processes, a nonmeasure-theoretic approach to the study of random variables, functions of random variables, least square estimation, convergence, stochastic representation, stationarity, ergodicity, Gaussian processes, Poisson processes, Markov chains, and random fields.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 531. Power Electronics** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): ECE 333, ECE 334, and ECE 420.
Description: Topics in power electronics including: power semiconductor devices; converter topologies and their applications; switched-mode DC and uninterruptible power supplies; motor drives; EMI concerns and remedies for interfacing to electric utilities.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 532. Electromechanical System Designs for Home Appliances** 4.5 Units
Term Typically Offered: Fall, Spring, Summer
Description: An integrated study of advanced electrical engineering and software engineering fundamentals and their application to technologies associated with the design, development, and production of modern major household appliances. This class is designed for GE Appliances Edison students or GE Appliances employees enrolled in the ECE program.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 533. Integrated Circuit Design** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): ECE 333.
Corequisite(s): ECE 534.
Description: Analysis and design of analog integrated circuits. Bipolar, JFET, and MOS-FET devices. The technology of IC fabrication. Transistor connections, current sources, active loads, and output stages. Integrated amplifier and MOS circuit design.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 534. Integrated Circuit Design Laboratory** 1 Unit
Term Typically Offered: Spring Only
Prerequisite(s): ECE 333.
Corequisite(s): ECE 533.
Description: Laboratory to illustrate design principles in ECE 533.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 539. Industrial Software for Home Appliances** 4.5 Units
Description: This course provides electrical engineering graduate students working in the major home appliance industry with an understanding of industrial software engineering fundamentals and their application to technologies associated with the design, development, and production of major household appliances such as refrigerators, washers, dryers, cooking products and dishwashers.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 540. Fundamentals of Lasers** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): PHYS 542 or ECE 473 and PHYS 355 or consent of instructor.
Description: Topics to be discussed include interaction of light with matter, optical amplifiers, laser resonators, Gaussian and higher order optical beams, non-linear optics, and ultra-fast laser pulses.
Note: Cross-listed with PHYS 547.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECE 541. Engineering Optics Laboratory Term Typically Offered: Fall, Spring, Summer Prerequisite(s): ECE 540 (or concurrent). Description: Computer-aided design-oriented series of fundamental optics experiments ranging from thin lens experiments, diffraction, interference, laser coherence and birefringence. Abbe theory. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	1 Unit	ECE 550. Communication and Modulation Term Typically Offered: Spring Only Prerequisite(s): ECE 360 or IE 360, and ECE 420. Corequisite(s): ECE 551. Description: Modulations such as AM, FM, PAM, PPM, PDM, single sideband, vestigial sideband. Coherent and noncoherent detection, heterodyne action, performance and distortion, circuits for modulation and demodulation For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	3 Units
ECE 542. Semiconductor Device Fundamentals Term Typically Offered: Fall, Spring Prerequisite(s): ENGR 205 or MATH 405. Description: Semiconductor fundamentals, energy bands, carrier transport theory, continuity equations, PN junction diodes, Zener diodes, MOS capacitors, MOSFETs, microelectronic fabrication, and select other topics. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	3 Units	ECE 551. Communication Systems Laboratory Term Typically Offered: Spring Only Prerequisite(s): ECE 420. Corequisite(s): ECE 550. Description: Laboratory exercises involving the design and analysis of electronic communication systems for the transmission of analog and digital data at radio frequencies. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	1 Unit
ECE 543. Fundamentals of Microfabrication and MEMS Term Typically Offered: Fall, Spring, Summer Prerequisite(s): Senior standing. Description: Microfabrication techniques including cleanroom technology, lithography, thermal oxidation, diffusion, ion implantation, film deposition, etching, micromachining, wafer-level bonding/polishing, and packaging yield. Microtechnology measurement and analysis techniques. Process simulation. CAD device-layout. MEMS (microelectromechanical systems) and microelectric technology and applications. Material issues for MEMS/microelectronics. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	3 Units	ECE 555. Digital Image Processing Term Typically Offered: Fall, Spring Prerequisite(s): ECE 520 and ECE 521, or ECE 420 and departmental consent. Corequisite(s): ECE 556. Description: Introduction to the theory and applications of 2-D signal and image processing: 2-D signals and systems analysis, 2-D sampling and quantization, 2-D signals and image transforms, 2-D FIR filter design; image formation; image enhancement; image restoration; image coding; image reconstruction from projections; image compression; color image processing; current applications. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	3 Units
ECE 544. Microfabrications/MEMS Laboratory Term Typically Offered: Fall, Spring, Summer Prerequisite(s): ECE 543 (or concurrent). Fee: An additional \$250.00 is charged for this course. Description: Laboratory to illustrate microfabrication processes, semiconductor measurement techniques, MEMS microstructure fabrication, and MEMS testing. Cleanroom activity required. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	1 Unit	ECE 556. Digital Image Processing Laboratory Term Typically Offered: Fall, Spring Corequisite(s): ECE 555. Description: Laboratory experiments in software are assigned to test the concepts covered in ECE 555, Digital Image Processing. Projects include: Image Representation and Transformation, Image Enhancement in the spatial and frequency domain and Image Restoration. Time permitting, projects on image compression and image segmentation will also be assigned. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	1 Unit
ECE 545. Optical Signal Processing Term Typically Offered: Fall, Spring, Summer Prerequisite(s): ECE 420 or consent of instructor. Description: Scalar diffraction theory and equivalence to linear filtering. Fourier transform properties of lenses. The modulation transfer function. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	3 Units	ECE 560. Control Systems Principles Term Typically Offered: Fall, Spring, Summer Prerequisite(s): ECE 420. Corequisite(s): ECE 561. Description: Basic concepts of linear control systems. Formulation of the linear control problem by classical and state space methods. Frequency response and time response analysis and synthesis techniques. Stability and system performance specifications. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	3 Units
ECE 546. Introduction to Medical Imaging Term Typically Offered: Fall, Spring, Summer Prerequisite(s): ECE 420. Description: Focuses on the foundation of modern medical imaging at an introductory level with emphasis placed on concepts: X-ray, CT, MRI, PET, and Ultrasound will be discussed. Students interested in in-depth treatment of these topics should register for ECE 641. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	3 Units		

<p>ECE 561. Control Systems Laboratory Term Typically Offered: Fall, Spring, Summer Corequisite(s): ECE 560. Description: Laboratory exercises involving identification, analysis and design of closed-loop control systems. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>1 Unit</p>	<p>ECE 582. Power System Analysis Term Typically Offered: Fall, Spring, Summer Prerequisite(s): ECE 473. Description: Three-phase circuits. Inductance and capacitance of transmission lines. Circuit models. Per-unit representation. Network methods. Load-flow studies. Load-flow control. Economic dispatch. Symmetrical three-phase faults. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>
<p>ECE 564. Fundamentals of Autonomous Robots Term Typically Offered: Fall Only Prerequisite(s): Senior standing, or permission of instructor. Corequisite(s): ECE 565. Description: Fundamentals of autonomous robots: sensors, path planning, machine perception, basic principles of AI, modeling, control and architecture. Case studies in industry and medicine will be discussed. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>	<p>ECE 593. Independent Study in Electrical Engineering Term Typically Offered: Fall, Spring, Summer Prerequisite(s): Approval of a faculty sponsor. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>1-6 Units</p>
<p>ECE 565. Fundamentals of Autonomous Robots Lab Term Typically Offered: Fall Only Prerequisite(s): Senior standing, or permission of instructor. Corequisite(s): ECE 564. Description: An autonomous robots laboratory experience in which the student becomes familiar with designing and building autonomous robots, using sensors, applying robotic paradigms and controller design. A final robotic competition will be held at the end of the semester. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>1 Unit</p>	<p>ECE 595. Graduate/Professional Seminar in Electrical & Computer Engineering Term Typically Offered: Fall, Spring, Summer For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>1 Unit</p>
<p>ECE 569. Intermediate Electromagnetic Fields and Waves Term Typically Offered: Fall, Spring, Summer Prerequisite(s): ECE 473. Description: General curvilinear coordinates. Electromagnetic energy transmission. The wave equation, Poynting theorem and plane wave propagation in media. Transmission lines and impedance matching. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>	<p>ECE 600. Special Topics in Electrical & Computer Engineering Description: An examination of one or more specific areas of Electrical and/or Computer Engineering not covered in the regular curriculum. Topics vary by semester. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>1-6 Units</p>
<p>ECE 581. Electric Machines and Drives Term Typically Offered: Fall, Spring, Summer Prerequisite(s): ECE 473. Description: Operating principles and characteristics of DC, induction, synchronous motors/generators. AC/DC electric-machine drives for speed/position control. Integrated discussion of electric machines, power electronics, and control systems. B and H in ferromagnetic materials. Magnetic circuits. Transformers. Dynamic equations of magnetic systems. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>	<p>ECE 602. Graduate Internship in Electrical and Computer Engineering Grading Basis: Pass/Fail Term Typically Offered: Fall, Spring, Summer Prerequisite(s): Admission to Graduate Study, Permission of Department Chair, and Permission of Director of Career Services. Description: Supervised professional experience in industry at the graduate level. This course provides the structure and focus for the graduate intern field assignment to ensure that the assignment is appropriate and consistent with the intern's graduate course of study and professional development. Not to be counted towards meeting the requirements for a degree. May be repeated for credit. Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>2 Units</p>
		<p>ECE 605. Graduate Project in Electrical & Computer Engineering Prerequisite(s): Approval of a faculty sponsor. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>1-6 Units</p>

- ECE 611. Computer Architecture** **3 Units**
Term Typically Offered: Fall Only
Prerequisite(s): Any of the following: CECS 510, CECS 525, ECE 510, ECE 516 or equivalent.
Description: This course will provide in-depth exposure to advanced topics in computer architecture. The emphasis is on studying and analyzing fundamental issues in computer architecture design and their impact on performance. Course topics include performance measurements; ISA; memory hierarchy design and cache memory; advanced pipelining; and advanced computer structures for instruction-level parallelism, instruction scheduling, data-level parallelism, and thread-level parallelism.
Note: Cross-listed with CECS 611.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 613. Computational Intelligence Methods for Data Analysis** **3 Units**
Prerequisite(s): Graduate standing.
Description: Foundations of neural processing, fuzzy systems, genetic algorithms, and machine learning. Theory and application of Principal and Independent Component Analysis. Applications for classification, clustering, visualization, data mining, rule generation, and expert systems.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 614. Deep Learning** **3 Units**
Description: Machine learning basics. Supervised and unsupervised learning. Feedforward neural networks, error back propagation algorithm, logistic and softmax regression, regularization. Auto-encoders, sparsity and feature learning under constraints Convolutional nets. Boltzmann machines.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 619. Computer Vision** **3 Units**
Term Typically Offered: Spring Only
Prerequisite(s): ECE 555 or ECE 618.
Corequisite(s): ECE 645.
Description: Introduction to the theory and applications of computer vision. Topics include: image representation, image segmentation, image analysis by mathematical morphology, texture, shape representation, shape analysis and 3D vision.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 620. Pattern Recognition and Machine Intelligence** **3 Units**
Term Typically Offered: Fall, Spring
Prerequisite(s): ECE 420 and ECE 360 or IE 360.
Corequisite(s): ECE 655.
Description: Fundamentals of statistical, structural, and syntactic pattern recognition approaches. Parametric and nonparametric classification, feature extraction, clustering, and formal languages representation. Applications include: Data classification, character recognition, speech recognition, and target tracking.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 631. Advanced Electromechanical System Design for Home Appliances** **4.5 Units**
Description: Provides electrical engineering graduate students working in the major home appliance industry with an advanced, integrated summary of electrical engineering and computer engineering fundamentals presented in the context of technologies impacting appliance product lines and production methodologies. Curriculum materials and assignments emphasize the multi-disciplinary nature of these technologies, and critical role played by EE / CE in their realization. The course culminates in an end-of-semester project, which the students will work together to solve a real-world engineering problem from the major home appliance industry.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 632. Semiconductor Principles** **3 Units**
Prerequisite(s): ECE 542 and ECE 473.
Description: Fundamental principles of semiconductors necessary for a detailed understanding of the operation of transistors, including energy bands, carrier statistics, recombination-generation, carrier transport, and Boltzmann equation.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 633. Microelectronics Design and Fabrication** **4 Units**
Term Typically Offered: Spring Only
Prerequisite(s): ECE 542, ECE 543 and ECE 544.
Fee: An additional \$250.00 is charged for this course.
Description: Design, layout, simulation and verification, fabrication, characterization, and extraction of model parameters for microelectronic devices (e.g., MOSFETs) and circuits.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 636. MEMS Design and Fabrication** **4 Units**
Term Typically Offered: Spring Only
Prerequisite(s): ECE 543 and ECE 544.
Fee: An additional \$250.00 is charged for this course.
Description: Design, layout, simulation and verification, fabrication, characterization, and extraction of model parameters of MEMS devices.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 638. The MOSFET** **3 Units**
Prerequisite(s): ECE 542.
Description: Fundamentals of MOSFET operation and fabrication, including long-channel MOSFET's, short-channel MOSFET's, sub-100nm gate-length MOSFET's, and novel MOSFET structures.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- ECE 639. Advanced Industrial Software for Home Appliances** 4.5 Units
Description: Provides electrical engineering graduate students working in the major home appliance industry with an understanding of industrial software engineering fundamentals and their application to technologies associated with the design, development, and production of major household appliances such as refrigerators, washers, dryers, cooking products and dishwashers.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 640. Introduction to Biomedical Engineering** 3 Units
Prerequisite(s): ECE 420.
Description: Engineering modeling and simulation of biological systems, quantitative physiology of the cardiovascular, pulmonary, and circulation systems, fundamentals of biomechanics and human-machine interface, basics of medical instrumentation design, and artificial organs. Practical applications include biopotential amplifiers design, biological signal processing, and medical imaging.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 641. Medical Imaging Systems** 3 Units
Prerequisite(s): ECE 555 or ECE 618.
Description: Focuses on the foundations of, modern medical imaging. Topics include: X-ray generation and X-ray/tissue interactions, projection X-ray imaging, image reconstruction from projections, X-ray CT, MRI, nuclear medicine, SPECT, PET, and Ultrasound.
Note: Cross-listed with CSE 641.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 642. Fiber Optics and Integrated Optical Systems** 3 Units
Description: Propagation of electromagnetic waves in dielectric media. Phase and group velocity: Eikonal equation. Ray and wave theory of uniform and graded index planar and channel optical waveguides and optical fibers. Design and fabrication techniques for waveguides and integrated optical devices. Semiconductor laser and modulator design.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 643. Introduction to Biomedical Computing** 3 Units
Prerequisite(s): Graduate Standing.
Description: Covers various aspects of modern tools of biocomputing in its broad sense; hardware and software issues are covered. Topics include: Super and high performance computer architecture, high bandwidth networking, wireless computing, visualization, and software engineering in medicine. Topics also include computer-assisted interventions, imaging, parallel programming, and database design and query, as applied to life, medical and biomedical sciences.
Note: Formerly cross-listed with CECS 643.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 645. Computer Vision Laboratory** 1 Unit
Term Typically Offered: Spring Only
Prerequisite(s): ECE 555 or ECE 618.
Corequisite(s): ECE 619.
Description: Laboratory experiments in hardware and software forms are assigned to test the concepts covered in ECE 619, Computer Vision. Projects include: Image formation and camera calibration, stereo vision, 3D object reconstruction from the sequence of images, active vision applications, surface registration, and motion estimation.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 647. Fundamentals of Optoelectronics and Photonics** 3 Units
Prerequisite(s): Consent of instructor.
Description: Introduction to fundamental properties, components, and theories used to build optical systems for broad bandwidth telecommunications, computing, sensing and information processing.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 651. Communication System Design** 3 Units
Prerequisite(s): ECE 550.
Description: Emphasis on the systems approach to digital communication systems design. Topics include communication link analysis, channel coding, modulation and coding trade-offs, synchronization, spread spectrum techniques, and data encryption and decryption.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 652. Information Theory and Coding** 3 Units
Prerequisite(s): ECE 550.
Description: Information theory, capacity, and measures of information; fixed and variable length block encoding, data compression; state transition and Markov source models for communication channels and methods of achieving maximum capacity; topics in abstract algebra including groups, rings and fields; block error correction codes such as Hamming codes, cyclic codes, BCH codes, Reed Soloman codes; convolutional codes and Viterbi decoding algorithm.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 653. Digital Communications** 3 Units
Prerequisite(s): ECE 550 and ECE 360 or IE 360.
Description: Review of random process theory, sampling and quantization, source coding, optimum receivers for AWGN channels, digital transmission through band-limited AWGN channels, inter-symbol interference, equalization, and spread spectrum systems.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- ECE 654. Advanced Voice/Data Networks** 3 Units
Prerequisite(s): ECE 518 or CECS 516 or permission of the instructor.
Description: This course extends topics covered in ECE 518 to address advanced networking technologies that are used in corporate intranets and the Internet. Topics covered include: packet-voice technologies, Ethernet switching, IP version 6, digital subscriber loop technologies, dynamic routing, tagged packet switching technologies, and Quality of Service (QoS).
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 655. Pattern Recognition and Machine Intelligence Laboratory 1 Unit**
Term Typically Offered: Fall, Spring
Corequisite(s): ECE 620.
Description: Laboratory experiments in hardware and software forms are assigned to test concepts covered in ECE 620, Pattern Recognition and Machine Intelligence. Projects include: Stochastic simulation, design of Bayesian classifiers, clustering, hyperspectral classifiers, digital train mapping, automatic target recognition, and biomedical applications.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 660. Introduction to Robust Control** 3 Units
Prerequisite(s): ECE 560 and ECE 561.
Description: To provide students with the fundamentals of Robust Control Theory, with emphasis on stability and performance analysis in the time and frequency domains and design tools for robust performance and robust stability. It examines how a controller can be designed taking into account uncertainties in the model of the plant. The course will include a final design project which will be completed using MATLAB.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 661. Sampled-Data Control Systems** 3 Units
Prerequisite(s): ECE 560.
Description: Analysis and synthesis of closed-loop sampled-data control systems using Z-transforms and state-space methods. Sampling and data reconstruction. Modified Z-transform. Time response and steady state accuracy. Stability analysis. Lag, lead, and PID controllers. Pole assignment. State estimation. Discrete optimal control.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 662. Introduction to Optimum Control** 3 Units
Prerequisite(s): ECE 560.
Description: Calculus of variations, dynamic programming, the minimum principle, and numerical optimization techniques applied to discrete-time and continuous-time deterministic control systems.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 664. Modern Adaptive Control** 3 Units
Prerequisite(s): ECE 560 and ECE 625.
Description: Methods of modern adaptive control, including the indirect and direct approaches. Discrete- and continuous-time controllers. Behavior of controllers under nonideal conditions, including stochastic disturbances and unmodeled dynamics.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 665. Theory of Nonlinear Systems** 3 Units
Term Typically Offered: Fall, Spring, Summer
Description: Modern theory of nonlinear systems including phase plane analysis, Lyapunov stability theory, perturbation theory, singular perturbations, describing functions, Lure problem, Popov circle criterion. Applications to closed-loop control systems.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 674. Nanotechnology** 3 Units
Description: A survey of the current state-of-the-art in Nanotechnology (e.g. nano-fabrication, electronics, self-assembly) through selected readings and special topic reports from the students.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 675. Nanostructure Self-Assembly** 3 Units
Description: Self-assembly results from energetically favorable thermodynamics and kinetics (e.g. phase transformations, nucleation, grain growth) will be covered and related to current local and world-wide research projects.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 676. Foundations of Polymer MEMS** 3 Units
Description: An overview of the range of physical properties and applications of polymers, independent student readings and class reports on applications of polymers to the fabrication and operation of MEMS devices.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 682. Advanced Power System Analysis** 3 Units
Prerequisite(s): ECE 582.
Description: Symmetrical components. Unsymmetrical faults. Power system stability. Power system protection. Computer methods.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ECE 687. Platform Engineering Project** 3 Units
Prerequisite(s): ME 530, ME 531 and ECE 532.
Description: Major product development project involving a multidisciplinary team working on design and/or research problems associated with consumer appliance technologies. Concurrent topics on research methodologies, product realization, and project management. A proposal, activity reports and final report are required. Project results are presented for faculty and peer review.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECE 690. Master of Science Thesis or Paper in Electrical Engineering 1-6 Units

Prerequisite(s): Graduate or Professional standing.

Description: Performance of an engineering project or research activity under the direction of a faculty member, resulting in a thesis that demonstrates both mastery of the subject matter and a high level of communication skills. A written thesis must be presented and defended orally before a faculty committee for approval and be submitted to a referred conference or referred journal for potential publication.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECE 692. Master of Science Advanced Level Independent Project 3-4 Units

Prerequisite(s): Graduate Standing, Approval of the Department Chair.

Description: Students enrolled in this course will engage in an engineering project or research activity and produce a report that demonstrates both mastery of the subject matter and a high level of communication skills. Oral presentation of the report is required.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECE 693. Independent Study in Electrical & Computer Engineering 1-6 Units

Prerequisite(s): Approval of a faculty sponsor.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECE 695. Graduate Seminar in Electrical and Computer Engineering 1 Unit

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECE 696. Advanced Level Oral Presentation 0 Units

Grading Basis: Pass/Fail

Prerequisite(s): Graduate or Professional Standing and approval of the Department Chair.

Corequisite(s): Enrollment in an approved ECE companion course for the Advanced-Level Project/Research/Communication requirement.

Description: Oral presentation before a faculty committee, of the results of an engineering project or research activity.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECE 697. Master of Engineering Thesis or Paper in Electrical Engineering 1-6 Units

Prerequisite(s): ECE 497 and graduate or professional standing.

Description: Performance of a study, design, or investigation under the direction of a faculty member. A written thesis or technical paper must be presented and defended orally before a faculty committee for approval. A paper must be submitted to a referred conference or referred journal for potential publication.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ECE 700. Dissertation Research in Electrical Engineering 1-18 Units

Prerequisite(s): Completion of doctoral core program and consent of dissertation director.

Description: Original research activity in an appropriate electrical engineering discipline, under the direction of an Electrical and Computer Engineering graduate faculty member.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Engineering Management (EM)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

EM 525. Project Management 3 Units

Prerequisite(s): Admission into the Industrial Engineering or Engineering Management program or instructor permission.

Description: Use of CPM, PERT, precedence diagramming, resource allocation heuristics, and other techniques for planning, managing, and controlling engineering projects involving research and development, production, maintenance, and construction. Computer procedures and codes for analyzing complex project networks will be covered.

Note: Cross-listed with IE 525.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EM 560. Construction Management 3 Units

Prerequisite(s): Admission into the Engineering Management program or instructor permission.

Description: An investigation of the engineer's role in the construction process. Study of the many variables influencing the project and associated methods of managing variables. Includes a practical demonstration of student's understanding schedule and cost estimate for a project of the student's choosing.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- EM 561. Engineering Statistics I** 3 Units
Prerequisite(s): Admission into the Engineering Management program or instructor permission.
Description: . Study of the laws of probability, discrete and continuous probability distributions, point and interval estimation, tests of hypothesis, simple linear regression, and the single factor analysis of variance.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EM 582. Management of Human Systems** 3 Units
Prerequisite(s): Admission into the Engineering Management program or instructor permission.
Description: Computer-aided, quantitative application of human performance capabilities and limitations to the planning, design, development, and evaluation of complex human-machine/industrial systems.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EM 613. Operations Management** 3 Units
Prerequisite(s): Admission in EM program or instructor permission.
Description: Concepts in strategic planning, quality management, operations research, facility design, supply chain and logistics, forecasting, inventory control, resource planning, and scheduling. Emphasis is on appropriate analytical and computer-based techniques.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EM 615. Management Science** 3 Units
Prerequisite(s): Admission in EM program or instructor permission.
Description: Students will gain knowledge in the application of management science processes and models used in decision making. Emphasis will be placed on the mathematical tools and will cover the following topics: Decision Analysis, Regression Models, Forecasting, Inventory, Control Models, Linear Programming, Queuing Theory, and Discrete Event Simulation.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EM 620. Safety Management** 3 Units
Term Typically Offered: Summer Only
Prerequisite(s): Admission into the EM program, or instructor permission.
Description: This course will introduce concepts of designing, operating, maintaining, and managing safety programs. Topics will be drawn from hazard avoidance, risk management, legislation (including OSHA & Worker's Compensation), health management, accident investigation, building/facility safety, industrial hygiene, fire safety, personal protection, ergonomics, materials handling, machine guarding, electrical hazards, construction safety, systems safety, certification issues, ethics, and professionalism.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EM 624. Human Resource Management** 3 Units
Prerequisite(s): Admission in EM program or instructor permission.
Description: This course will present HR management various activities including hiring, training, performance review, motivation, and employee satisfaction.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EM 626. Effective Communication for Engineers** 3 Units
Term Typically Offered: Summer Only
Prerequisite(s): Admission into the EM program, or instructor permission.
Description: This class will discuss efficient ways of communicating engineering ideas, projects, e-mails, and presentations to make them clear and concise to a variety of audiences.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EM 627. Information Technology Management** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): Admission in EM program or instructor permission.
Description: In this course, students will gain knowledge in the application of information systems in business environments. The use and management of data supplied externally to the firm (e.g., customer transactions) and data generated internally by the firm (e.g., production orders) will be considered. Emphasis will be placed on leveraging reliable data to derive meaningful information that is relevant to the decisions a firm must make. The following topics will be included: Data Structure, Network Structure, System Security, System Access, System Reliability, Component Integration, User Interfaces, and Analytical Reports.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EM 628. Engineering Management** 3 Units
Prerequisite(s): Admission in EM program or instructor permission.
Description: The principles and practices of administration of the engineering function, including management, organization, planning, controlling and measuring results, management of human resources, communication and decision-making.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EM 632. Quality Management** 3 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): EM 661 or IE 563; admission in EM program or instructor permission.
Description: In this course, students will gain knowledge in the application of quality improvement methodology in both manufacturing and service environments. Emphasis will be placed on philosophical approaches to quality improvement and quantitative methods of quality control. The following topics will be included: Corporate Quality Programs, Applications for Quality Improvement, Measurement Systems Analysis, Statistical Process Control, Experimental Design, Root Cause Analysis, and Design for Quality.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- EM 640. Applied Systems Analysis** 3 Units
Prerequisite(s): IE 360 or equivalent; admission into the EM program or instructor permission.
Description: Methods of engineering management applied to case studies so as to define the problems, analyze the data, and recommend solutions or decisions.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EM 645. Decision and Risk Analysis** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Admission in EM program or instructor permission.
Description: In this course students will gain knowledge in the process of decision-making. Emphasis will be placed on quantitative and qualitative tools and will cover the following topics: Introduction to Decision Analysis, Elements of Decision Problems, Structuring Decisions, Making Choices, Sensitivity Analysis, and Organizational Use of Decision Analysis.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EM 646. Marketing and the Engineer** 3 Units
Prerequisite(s): Admission into the EM program or instructor permission.
Description: Provides an introduction to marketing principles and techniques with an emphasis on technical product development, pricing, promotion and distribution strategies. It stresses the role the engineers play in the product marketing plan of an organization, as well as methods for forecasting technology and measuring marketing decisions. It includes a unit on marketing aspects of engineering entrepreneurship.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EM 656. Supply Chain Management** 3 Units
Prerequisite(s): EM 613 and admission in EM program, or instructor permission.
Description: Understand how supply chain design and planning decisions impact the performance of the firm as well as the entire supply chain. Understand the link between supply chain structures and logistical capabilities in a firm. Case studies and problems are used throughout the course to highlight important concepts and principles.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EM 661. Engineering Statistics II** 3 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): IE 360 (or equivalent) and admission into the EM program, or instructor permission.
Description: The principles and techniques of advanced statistics, including multiple linear regression, multi-factor analysis of variance, experimental design, nonparametric statistics, and quality control.
Note: Students may not obtain credit for both EM 661 and ME 611; or for EM 661 and IE 563.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EM 670. Engineering Financial Management** 3 Units
Prerequisite(s): Admission in EM program or instructor permission.
Description: This course examines various approaches for managing financial resources in the technology enterprise, including cost accounting and cost estimating. The focus is both direct and indirect costs for materials, labor and overhead.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EM 672. Management Law for Engineers** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Admission in EM program or instructor permission.
Description: In this course, students will study the common law as it pertains to Contracts, Torts and Real Estate; rules governing business transactions in the area of creditors' rights in secured transactions and suretyship; sales as covered by the Uniform Commercial Code; business relationships such as agency and forms of business ownership, and ethics and professional liability.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EM 674. Intellectual Property Law for Engineers** 3 Units
Prerequisite(s): Admission in EM program or instructor permission.
Description: A study of U.S. law governing the protection for various forms of intellectual property including patent, trademark, and copyright law. Issues addressed include creation, ownership, acquisition, use, and transfer of various forms of intellectual property.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EM 676. Effective Leadership** 3 Units
Term Typically Offered: Fall, Spring, Summer
Description: In this course, students will gain a comprehensive understanding of the leadership skills and practices required to advance the mission of an organization. Emphasis will be placed on establishing strategic direction with supporting tactics, enhancing the organization's problem solving capabilities, fostering an environment of reliable change implementation, and communicating with impact. The following topics will be included: Mission and Vision Statements, Corporate Values, Sourcing Decisions, Performance Improvement Systems, Change Management, and Leadership Styles.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EM 684. Applications for Process Improvement I** 1.5 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): EM 613/IE 240, EM 661/IE 563; admission in EM program or instructor permission.
Corequisite(s): EM 685.
Description: In this course, students will learn the process improvement methodologies of six sigma. Emphasis will be placed on the quantitative and qualitative tools covered in EM 613 (IE 240 equivalent) and EM 661 (IE 563 equivalent) and how to use these tools within framework of the DMAIIC process of six sigma. Students will compete the Define Phase of DMAIIC.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EM 685. Applications for Process Improvement II 1.5 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** EM 613/IE 240, EM 661/IE 563; admission in EM program or instructor permission.**Corequisite(s):** EM 684.**Description:** In this course, students will apply the tools learned in EM 684 to complete a project. Students entering the class will have already completed the Define phase of DMAIC and in this class, will complete Measure, Analyze, Improve, Implement, and Control. At the end of the class, students have the option of taking an exam (for an additional fee) to obtain their Six Sigma Black Belt Certification.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**EM 693. Independent Study in Engineering Management** 1-6 Units**Description:** Opportunity for the student, under the supervision of a sponsoring faculty member, to pursue individualized study related to research or practice that is not included in regular courses in the curriculum.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**EM 694. Special Topics in Engineering Management** 1-6 Units**Prerequisite(s):** Admission in EM program or instructor permission.**Description:** A theoretical or experimental investigation of an engineering management problem.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**EM 697. MEng Thesis in Engineering Management** 1-6 Units**Description:** A candidate for the Master of Engineering degree, specializing in the field of engineering management, is required to perform a study, design, or investigation under the direction of a faculty member. A written thesis is required to be presented orally and submitted to the faculty for approval.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**EM 699. Engineering Management Master's Degree Project** 3 Units**Prerequisite(s):** Instructor permission required.**Description:** The Engineering Management MEng student carries out an engineering project under the supervision of a faculty mentor, prepares an acceptable written report, and presents a seminar on the project.**Note:** Cross-listed with IE 699.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

English (ENGL)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that

they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

ENGL 501. Independent Study 3 Units**Prerequisite(s):** Overall GPA of 3.0, an average of 3.5 in the department, and at least 18 semester hours credit in the department.**Description:** Opportunity for the student, under the supervision of a sponsoring faculty member, to pursue individualized study related to research or practice that is not included in regular courses in the curriculum.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**ENGL 502. Independent Study** 3 Units**Prerequisite(s):** Overall GPA of 3.0, an average of 3.5 in the department, and at least 18 semester hours credit in the department.**Description:** Opportunity for the student, under the supervision of a sponsoring faculty member, to pursue individualized study related to research or practice that is not included in regular courses in the curriculum.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**ENGL 504. Special Topics: Advanced Creative Writing II** 3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** ENGL 305, or ENGL 403, or consent of instructor.**Description:** Concentration on a given form.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**ENGL 505. Special Topics: Advanced Technical Writing - WR** 3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** ENGL 303, or writing sample with instructor's consent.**Description:** Topic definition, audience analysis and editing strategies for technical reports, theses and articles in various disciplines.**Note:** Approved for the Arts and Sciences upper-level requirement in written communication (WR).For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 506. Special Topics: Teaching of Writing - WR, CUE 3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** ENGL 300, or ENGL 309, or ENGL 310, or consent of instructor.**Description:** Introduction to the theory, research, and practice that informs the effective teaching of writing.**Note:** Approved for the Arts and Sciences upper-level requirement in written communication (WR).**Course Attribute(s):** CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 507. Special Topics: The Teaching of Creative Writing - CUE, WR 3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** ENGL 102 or ENGL 105; Junior standing.**Description:** Introduction to the theory, research, and practice that informs the effective teaching of creative writing.**Note:** Approved for the Arts and Sciences upper-level requirement in written communication (WR).**Course Attribute(s):** CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 508. Special Topics: Literacy Tutoring Across Contexts and Cultures - WR 3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** ENGL 102 or ENGL 105; Junior standing.**Description:** The theory and practice of teaching writing in one-on-one and small group settings in academic, professional and community settings; pedagogical strategies for working with writers from a variety of backgrounds and contexts.**Note:** Approved for the Arts and Sciences upper-level requirement in written communication (WR).**Note:** Students who complete this course will be eligible for tutoring internships.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 509. Special Topics: Special Topics Writing 3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** ENGL 310.**Description:** Examines in depth such topics as rhetoric and social systems, writing technologies in theory and practice, or considerations of style.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 510. Cooperative Internship in English 3 Units**Prerequisite(s):** Approved only for graduate-level credit, permission of graduate director required; restricted to students in good standing (GPA 3.0 or above).**Description:** An individually arranged semester-long project that combines English studies with workplace-based goals and responsibilities.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 515. Special Topics: Introduction to Old English 3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** ENGL 102 or ENGL 105; Junior standing.**Description:** Readings in the original language of Old English prose and poetry.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 518. Special Topics: Foundations of Language 3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** ENGL 102 or ENGL 105; Junior standing.**Description:** A survey of contemporary theories of language, from structuralism to transformational grammar; the relationship of linguistics to literature, psychology, philosophy, reading, and sociology.**Note:** Cross-listed with LING 518.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 522. Special Topics: Structure of Modern English 3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** Junior standing; ENGL 102 or ENGL 105.**Description:** Examination of the structure of modern English language; emphasis on grammatical terminology and systems of classification. Students collect and analyze linguistic examples, spoken and written. Recommended for prospective English teachers.**Note:** Cross-listed with LING 522.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 523. History of the English Language 3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** Junior standing; ENGL 102 or ENGL 105.**Description:** The evolution of modern English in terms of social, historical, and linguistic forces which molded it. Emphases include: Indo-European origins; Germanic sources and Latin, French, and Danish influences; structural and lexical change; development of dialect differences; colonial spread of English in technology; emergence of World Englishes.**Note:** Cross-listed with LING 523.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 535. Special Topics in Applied Linguistics 3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** LING 325 or ENGL 325 (undergraduates only); minimum Junior standing.**Description:** This course will focus on one aspect of applied linguistics. Topics may include discourse analysis, ESL teaching, language change, gender and language, or other relevant topics in applied linguistics.**Note:** Cross-listed with LING 535.**Note:** May be repeated up to a maximum of three times on different topics.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 541. Special Topics: Studies in Old and Middle English Literature - CUE 3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** ENGL 102 or ENGL 105; Junior standing.**Description:** Readings in the original language of Old English prose and poetry. Pre-1700.**Course Attribute(s):** CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 542. Special Topics: Studies in Tudor and Elizabethan Literature - CUE 3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** ENGL 102 or ENGL 105; Junior standing.**Description:** In-depth study of selected movements, genres, topics, or groupings of writers from the Tudor and/or Elizabethan periods. Historical Period pre-1700.**Course Attribute(s):** CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 543. Special Topics: Studies in Stuart and Commonwealth Literature - CUE 3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** ENGL 102 or ENGL 105; Junior standing.**Description:** In-depth study of selected movements, genres, topics or groupings of writers from the Stuart and/or Commonwealth periods. Historical Period pre-1700.**Course Attribute(s):** CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 544. Special Topics: Studies in Restoration and Eighteenth-Century British Literature - CUE 3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** ENGL 102 or ENGL 105; Junior standing.**Description:** In-depth study of selected movements, genres, topics or groupings of writers from the Restoration and/or Eighteenth Century periods. Historical Period: 1700-1900.**Course Attribute(s):** CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 545. Studies in British Literature of the Romantic Period - CUE 3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** ENGL 102 or ENGL 105; Junior standing.**Description:** In-depth study of selected movements, genres, topics, or groupings of writers of the Romantic period. Historical Period: 1700-1900.**Course Attribute(s):** CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 546. Special Topics: Studies in British Literature of the Victorian Period - CUE 3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** ENGL 102 or ENGL 105; Junior standing.**Description:** In-depth study of selected movements, genres, topics, or groupings of writers from the Victorian period. Historical Period: 1700-1900.**Course Attribute(s):** CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 547. Special Topics: Studies in Modern British and/or Irish Literature - CUE 3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** ENGL 102 or ENGL 105; Junior standing.**Description:** In-depth study of selected movements, genres, topics, or groupings of writers from the turn of the century through 1950. Historical Period: post-1900.**Course Attribute(s):** CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 548. Special Topics: Studies in Contemporary British and/or Irish Literature - CUE **3 Units**

Term Typically Offered: Fall, Spring

Prerequisite(s): ENGL 102 or ENGL 105; Junior standing.

Description: In-depth study of selected movements, genres, topics, or groupings of writers since 1950. Historical period: post-1900.

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 549. Special Topics: Studies in Post-Colonial and/or Ethnic Literature - CUE **3 Units**

Term Typically Offered: Fall, Spring

Prerequisite(s): ENGL 102 or ENGL 105; Junior standing.

Description: In-depth study of selected movements, genres, topics, or groupings of writers since 1950. Historical period: post-1900.

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 550. Studies in African-American Literature - CUE **3 Units**

Term Typically Offered: Fall, Spring

Prerequisite(s): Junior standing; ENGL 102 or ENGL 105.

Description: In-depth study of selected movements, topics, or groupings of African-American writers.

Note: Cross-listed with PAS 551.

Note: Historical period varies by semester; see schedule of courses.

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 551. Special Topics in Literature in English **3 Units**

Prerequisite(s): ENGL 102 or ENGL 105; Junior standing.

Description:

Note: Topics to be announced in schedule of courses.

Note: Historical period varies by semester.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 552. Special Topics in Literature in English **3 Units**

Description: An examination of one or more specific areas of study in English. Historical period varies by semester.

Note: Topics to be announced in schedule of courses.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 554. Women's Personal Narratives - CUE **3 Units**

Prerequisite(s): ENGL 102, or ENGL 105, or WGST 199, or equivalent.

Description: Course examines issues such as race, class, religion, geography, and sexual orientation surrounding the writing/reading of women's personal narratives (e.g., diaries, letters, autobiographies, oral histories, biographies, and films) from the 19th and 20th centuries.

Note: Cross-listed with WGST 520.

Note: Historical period varies by semester; see schedule of courses.

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 555. Cooperative Internship in English Studies - CUE **3 Units**

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): 90 hours; 3.0 GPA; declared English major; permission of instructor.

Description: An individually arranged course for an academic project cooperatively arranged with the student's employer and the English Department director of internships.

Note: May be used to meet requirements of the English major; may not be used to meet requirements of English minor.

Note: May not be repeated.

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status., CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 561. Special Topics: Chaucer - CUE **3 Units**

Term Typically Offered: Fall, Spring

Prerequisite(s): ENGL 102 or ENGL 105; Junior standing.

Description: Close reading of the major works, in the context of medieval traditions and fourteenth-century English society. Historical period: pre-1700.

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 562. Special Topics: Shakespeare - CUE 3 Units

Term Typically Offered: Fall, Spring

Prerequisite(s): ENGL 102 or ENGL 105; Junior standing.

Description: Intensive study of selected drama and poetry of Shakespeare. Historical period pre-1700.

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 563. Special Topics: Milton - CUE 3 Units

Term Typically Offered: Fall, Spring

Prerequisite(s): ENGL 102 or ENGL 105; Junior standing.

Description: Intensive study of the poetry; background reading in Milton's biography and prose. Historical period: pre-1700.

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 564. Special Topics: Selected Figures in American Literature - CUE 3 Units

Term Typically Offered: Fall, Spring

Prerequisite(s): ENGL 102 or ENGL 105; Junior standing.

Description: Study of the works of a selected writer or grouping of writers, in literary, biographical, and/or social context.

Note: Historical period varies by semester; see schedule of courses.

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 567. Special Topics: Post-Colonial Voices: Writing Experience in African Literature - CUE, WR 3 Units

Term Typically Offered: Fall, Spring

Prerequisite(s): ENGL 102 or ENGL 105; Junior standing.

Description: Examination of "post-coloniality" through a selection of fiction and literary criticism by African writers. Historical period: post-1900.

Note: Cross-listed with PAS 567.

Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 570. Language and Social Identity 3 Units

Description: An introduction to the social systems and language varieties found across societies. Additionally, students will objectively explore both linguistic and social norms.

Note: Cross-listed with LING 570.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 571. Special Topics: Studies in American Literature to 1865 - CUE 3 Units

Term Typically Offered: Fall, Spring

Prerequisite(s): ENGL 102 or ENGL 105; Junior standing.

Description: In-depth study of selected movements, genres, topics or groupings of writers before 1865.

Note: Historical period varies by semester; see schedule of courses.

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 572. Special Topics: Studies in American Literature, 1865-1910 - CUE 3 Units

Term Typically Offered: Fall, Spring

Prerequisite(s): ENGL 102 or ENGL 105; Junior standing.

Description: In-depth study of selected movements, genres, topics, or groupings of writers from the Civil War to 1910. Historical period: 1700-1900.

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 573. Special Topics: Studies in American Literature, 1910-1960 - CUE 3 Units

Term Typically Offered: Fall, Spring

Prerequisite(s): ENGL 102 or ENGL 105; Junior standing.

Description: In-depth study of selected movements, genres, topics or groupings of writers from 1910 to 1960. Historical period: post-1900.

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 574. Special Topics: Studies in American Literature, 1960 - CUE 3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** ENGL 102 or ENGL 105; Junior standing.**Description:** In-depth study of selected movements, genres, topics or groupings of writers from 1960 to present. Historical period: post-1900.**Course Attribute(s):** CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 575. Special Topics: Genre Studies in African-American Literature - CUE 3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** Junior standing; ENGL 102 or ENGL 105.**Description:** In-depth study of a selected genre of African-American Literature.**Note:** Cross-listed with PAS 575.**Note:** Historical period varies by semester; see schedule of courses.**Course Attribute(s):** CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 577. Special Topics: The Harlem Renaissance - CUE 3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** Junior standing; ENGL 102 or ENGL 105.**Description:** In-depth study of the literature of the Harlem Renaissance in relation to other literary and artistic productions of the period. Historical period: post -1900.**Note:** Cross-listed with PAS 577.**Course Attribute(s):** CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 581. Special Topics: Studies in Renaissance Drama - CUE 3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** ENGL 102 or ENGL 105; Junior standing.**Description:** In-depth study of dramatic works by Shakespeare's contemporaries. Historical period: pre-1700.**Course Attribute(s):** CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 586. Special Topics: Studies in American Drama - CUE 3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** ENGL 102 or ENGL 105; Junior standing.**Description:** In-depth study of selected American plays.**Note:** Historical period varies by semester; see schedule of courses.**Course Attribute(s):** CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 591. Special Topics: History of Criticism: Plato to the New Criticism - CUE 3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** ENGL 102 or ENGL 105; Junior standing.**Description:** Study of selected theories for the interpretation of literary and other texts, from Plato to the New Criticism.**Course Attribute(s):** CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 595. Special Topics: Studies in Literature and Science - CUE 3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** ENGL 102 or ENGL 105; Junior standing.**Description:** In-depth study of selected American plays.**Note:** Historical period varies by semester; see schedule of courses.**Course Attribute(s):** CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 599. Special Topics: Texts and Technologies - CUE, WR 3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** ENGL 202 or ENGL 300 or ENGL 310.**Description:** Examines how shifting and emergent technologies (related to types of writing, printing, paper-making, advertising, digital environments, as well as to historical and contemporary communication and distribution networks) shape authorship and literary work/reception.**Note:** Approved for the Arts and Sciences upper-level requirement in written communication (WR).**Note:** Formerly taught as "Advanced Studies in English - WR,CUE".**Course Attribute(s):** CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- ENGL 601. Introduction to English Studies** 3 Units
Description: Introduces students to research methods, print and electronic resources, strategies for reading and writing scholarly texts, and the seminar format.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 602. Teaching College Composition** 3 Units
Description: Introduction to the design of the freshman composition syllabus, writing assignments, and ways of responding to them.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 603. Studies in Genres** 3 Units
Description: A course in genre studies, featuring in any given semester the drama, biography, the essay, satire, etc.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 604. Writing Center Theory and Practice** 3 Units
Description: Prepares incoming Teaching Assistants (TAs) to teach in the University Writing Center. Provides a solid theoretical background for examining pedagogical issues important to an effective writing center, including such concerns as approaches to consulting with students, the role of grammar instruction in the writing center, consulting strategies for ESL students, the importance of computers in the writing center, record-keeping and resource development.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 605. Teaching Literature: Theory and Practice** 3 Units
Prerequisite(s): Students should be admitted to a graduate program at the University of Louisville.
Description: This course examines what it means to teach literature at the college level, and addresses the relationships between reading and teaching literature, literacy and pedagogical theory, and the teaching of writing and the teaching of literature.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 606. Creative Writing I** 3 Units
Prerequisite(s): Permission of instructor or enrollment in a degree program in English.
Description: A workshop in the writing of poetry, fiction, and drama, involving the reading and analysis of manuscripts and regular individual conferences.
Note: Recommended prior coursework: ENGL 503, ENGL 504, or equivalent.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 607. Creative Writing II** 3 Units
Prerequisite(s): Permission of instructor or enrollment in a degree program in English.
Description: A creative writing workshop similar to ENGL 606, but also allowing interested students to pursue bases for structuring larger and more ambitious works.
Note: Recommend prior coursework: ENGL 503, ENGL 504, or equivalent; and ENGL 606 or equivalent.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 610. Cooperative Internship in English** 3 Units
Prerequisite(s): Permission of graduate director required.
Description: An individually arranged semester-long project that combines doctoral work in rhetoric and composition with workplace goals and responsibilities. Restricted to students in good standing (GPA 3.0 or above). The internship project must relate directly to the student's long-term academic and professional goals.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 613. Independent Study** 1-3 Units
Description: Opportunity for the student, under the supervision of a sponsoring faculty member, to pursue individualized study related to research or practice that is not included in regular courses in the curriculum.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 614. Independent Study** 1-3 Units
Description: Opportunity for the student, under the supervision of a sponsoring faculty member, to pursue individualized study related to research or practice that is not included in regular courses in the curriculum.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 615. Thesis Guidance** 1-6 Units
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 620. Research in the Composition** 3 Units
Description: Examination of the major methodologies, quantitative and qualitative, in composition research, with their underlying theoretical assumptions.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- ENGL 621. Sociolinguistics** 3 Units
Prerequisite(s): LING 325 or LING 327 or graduate standing.
Description: The nature of language in social context, presented within the theoretical framework of generative grammar.
Note: Cross-listed with LING 621.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 624. Old English and Middle English Language and Literature** 3 Units
Description: Intensive survey of the major literary figures and intellectual traditions of medieval England, with attention to modern critical approaches.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 631. Renaissance Drama** 3 Units
Description: Intensive survey of representative non-Shakespearean dramatic works produced in Renaissance England, with attention to literary traditions and modern critical approaches.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 632. Shakespeare** 3 Units
Description: Intensive study of a large cross-section of the plays, with attention to modern critical approaches.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 633. Renaissance Poetry and Prose** 3 Units
Prerequisite(s): Graduate standing.
Description: Intensive survey of literary figures and intellectual traditions of Renaissance England, with attention to modern critical approaches.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 642. Eighteenth-Century Fiction** 3 Units
Description: Intensive survey of a diversity of fictional forms and their literary and intellectual traditions, with attention to modern critical approaches.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 643. Eighteenth-Century Poetry and Prose** 3 Units
Description: Intensive survey of the major literary figures and intellectual traditions of Eighteenth Century England, with attention to modern critical approaches.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 644. Romantic Poetry and Prose** 3 Units
Description: Intensive survey of the major literary figures and the intellectual traditions of English Romantic Movement, with attention to modern critical approaches.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 646. Literature in the Secondary Language Arts Curriculum** 3 Units
Prerequisite(s): Experience teaching English, a course in methods of teaching English in the secondary school, or consent of instructor.
Description: Examines theories behind the teaching of literature, research in the teaching of literature, and current trends in the teaching of literature in secondary school language arts.
Note: Cross-listed with EDAP 646.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 647. Teaching Writing and Language in the Secondary School** 3 Units
Prerequisite(s): Experience teaching English, a course in methods of teaching English in the secondary school, or consent of instructor.
Description: Examines theories of language acquisition and research and methodology in the teaching of grammars, vocabulary, spelling, semantics, etymology, usage, and dialectics in secondary school language arts.
Note: Cross-listed with EDAP 647.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 651. Nineteenth-Century Fiction** 3 Units
Description: Intensive survey of a diversity of fictional forms and their literary and intellectual traditions, with attention to modern critical approaches.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 652. Nineteenth-Century British Poetry and Prose** 3 Units
Description: An intensive survey of the major literary figures of 19th-century England, with attention to literary traditions and modern theories of interpretation.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 653. Irish Studies** 3 Units
Description: Intensive study of recent and contemporary Irish writers, with attention to literary and intellectual traditions and to modern critical approaches.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 654. Twentieth-Century Literature** 3 Units
Description: Intensive study of major writers and literary movements in the English-speaking world during the twentieth century, with attention to literary and intellectual traditions and to the most recent critical approaches.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 660. African-American Literature** 3 Units
Prerequisite(s): Graduate standing.
Description: Intensive study of African-American literature and culture from any period or across several periods.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- ENGL 661. Nineteenth-Century American Fiction** 3 Units
Description: Intensive survey of a diversity of fictional forms and literary and intellectual traditions, with attention to modern critical approaches. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 662. Nineteenth-Century American Poetry and Prose** 3 Units
Description: An intensive survey of the significant literary figures of nineteenth-century America, with attention to literary traditions and modern theories of interpretation. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 664. American Authors: 1900-Present** 3 Units
Description: Intensive study of selected American authors writing after 1900. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 665. Contemporary Poetry** 3 Units
Description: A survey or intensive sampling of contemporary poetry. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 667. Assessing and Responding to Student Writing** 3 Units
Prerequisite(s): English Graduate School status or permission.
Description: Introduction to and exploration of relevant issues, theories, and practices for assessing student writing in and outside the classroom. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 670. Composition Theory and Practice** 3 Units
Description: An exploration of what is known about language, writing, and teaching that treats writing pedagogy as a professional act grounded in theory and informed by a well-defined body of discursive literature. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 671. History of Rhetoric I** 3 Units
Description: Review of rhetorical theory and practice in the Greek, Roman, early Christian, medieval, and scholastic periods. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 672. History of Rhetoric II** 3 Units
Description: Review of rhetorical theory and practice in the English Renaissance, the eighteenth and nineteenth centuries, the modern and contemporary periods. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 673. Rhetoric and Textual Analysis** 3 Units
Description: Selected topics in the rhetorical analysis of fictional and nonfictional texts. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 674. Interdisciplinary Studies in Rhetoric and Composition** 3 Units
Description: Topics can include cognition and composition, the social construction of knowledge, feminist theory and composition, etc. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 675. Studies in Professional Writing** 3 Units
Prerequisite(s): One graduate linguistics or rhetoric course.
Description: Selected topics dealing with research and theory of writing in the professions including science and technology, social sciences, business, and law. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 676. The Rhetoric of Science** 3 Units
Prerequisite(s): Graduate Standing.
Description: Graduate seminar in rhetoric that examines science doing and science writing as rhetorical enterprises. As a result, we will consider science as "stories" and look at what these science stories say and how they say it. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 677. Graduate Writing in the Disciplines** 3 Units
Prerequisite(s): Students should be enrolled in a graduate program.
Description: This writing course is intended for graduate and professional students, and focuses on developing familiarity with the conventions of graduate-level research writing across a range of genres and within a range of academic disciplines. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 681. Seminar in Special Studies** 3 Units
Description: Involves discussion and analysis of advanced research topics leading to the dissertation. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 682. Seminar in Linguistics** 3 Units
Prerequisite(s): Graduate standing.
Description: Selected topics in applied or theoretical linguistics.
Note: Cross-listed with LING 690.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 685. Seminar in Modern British Studies** 3 Units
Description: Involves discussion and analysis of advanced research topics leading to the dissertation. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENGL 686. Seminar in American Studies** 3 Units
Description: Involves discussion and analysis of advanced research topics leading to the dissertation. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 687. Seminar in Rhetorical Studies 3 Units

Description: Advanced investigations in rhetoric and composition under a variety of special topics.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 688. The Watson Seminar in Rhetoric and Composition 3 Units

Prerequisite(s): Enrollment in the doctoral program in English or permission of instructor.

Description: A seminar given by the English department's visiting Watson Professor addressing any aspect of the field of rhetoric and composition.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 689. Directed Reading for Comprehensive Examinations 1-3 Units

Grading Basis: Pass/Fail

Prerequisite(s): Restricted to doctoral students who have completed all other coursework.

Description: 1-3 hours; may be repeated; minimum of 3 hours required of all doctoral students. Directed reading on topics of student's comprehensive examinations; reading lists are negotiated between student and directors of the examination areas.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 690. Dissertation Research 1-12 Units

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 691. Contemporary Theories of Interpretation 3 Units

Description: A selective survey of theories of interpretation from the New Criticism to the present, and of interpretive practices based on these theories.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENGL 692. Topics in Interpretive Theory Since 1900 3 Units

Prerequisite(s): Graduate standing; ENGL 691 or equivalent.

Description: A graduate seminar dealing with a specific topic or area of inquiry within the broad field of post-1900 theories of interpretation.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Entrepreneurship (ENTR)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

ENTR 600. Introduction to Entrepreneurship 3 Units

Prerequisite(s): Enrolled Graduate status.

Description: This course will introduce the students to the world of entrepreneurship via a hands-on, business building experience. Students will be divided into teams and each team will be required to think through the process of developing and launching its own start-up business. Using the lean launch methodology, the end result will be a written business plan & presentation, which will include a business model canvas presentation, a detailed financial model, and a viable business concept.

The skills learned through this experience will benefit an entrepreneur who wants to launch and kind of business in the future, including a non-profit, a for-profit, a franchise, or a social venture as well as an intrapreneur working within a corporate setting.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENTR 701. Foundations in Entrepreneurship Research 3-12 Units

Prerequisite(s): Doctoral student in Entrepreneurship.

Description: This course covers the development of scholarship in entrepreneurship, preparatory to a doctoral student beginning his or her research.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENTR 702. Seminar in Research Design I 3 Units

Prerequisite(s): Doctoral student in Entrepreneurship.

Description: This course covers research design and conjoint analysis.

Note: Previously taught as ENTR 761.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENTR 703. Venture Capital Seminar 3 Units

Prerequisite(s): Doctoral student in Entrepreneurship.

Description: This course covers scholarship in venture capital.

Note: Previously offered as ENTR 768.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENTR 710. Statistics I 3 Units

Term Typically Offered: Fall Even Years

Description: This course introduces the topic of statistics and covers probability theory and distributions, hypotheses testing, single sample testing correlation, simple and multiple regression models, and analysis of variance.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

<p>ENTR 711. Statistics II 3 Units Term Typically Offered: Spring Odd Years Prerequisite(s): ENTR 710. Description: This course will cover advanced topics in multivariate statistics including logistics regression modeling, cluster analysis, principle components analysis, advanced analysis of variance models, hierarchical modeling, and multinomial models. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>ENTR 725. Innovation and Business Transformation 3 Units Term Typically Offered: Fall Odd Years Description: This seminar will explore academic literature of innovation not involving new startup ventures. Topics include building capabilities based on social networks, organizational learning, technological innovation, innovative environments, knowledge transfer, technological trajectories, disruption, and path dependencies. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>ENTR 715. Entrepreneurship & The Environment Context 3 Units Term Typically Offered: Fall Odd Years Description: There is widespread agreement among entrepreneurship scholars that the environmental context is an important antecedent to entrepreneurial action. This seminar will be topical based, examining theories and applied research on the nexus between the environmental context and entrepreneurship. Topics to be examined include: external enablers, knowledge spillover theory of entrepreneurship, institutions, culture, social capital, infrastructure, public policy, regional entrepreneurship, academic entrepreneurship, entrepreneurial ecosystems, crisis response, and the biological perspective. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>ENTR 726. Advanced Multivariate Techniques 3 Units Prerequisite(s): Doctoral student in Entrepreneurship. Description: Comprehensive treatment of multivariate statistics, including cluster analysis, MANOVA, factor analysis, discriminant analysis, and covariance structure modeling. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>ENTR 721. Entrepreneurial Discovery Seminar 1.5 Units Term Typically Offered: Spring Even Years Prerequisite(s): Doctoral student in Entrepreneurship. Description: This course covers scholarship on entrepreneurial discovery. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>ENTR 731. Independent Study I 3-9 Units Grading Basis: Pass/Fail Prerequisite(s): Doctoral student in Entrepreneurship. Description: Independent study to prepare for preliminary examinations. Note: Previously taught as ENTR 789. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>ENTR 722. Philosophy of Science 1.5 Units Term Typically Offered: Spring Even Years Prerequisite(s): Doctoral student in Entrepreneurship. Description: This course covers philosophy of science as it relates to research in entrepreneurship. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>ENTR 732. Independent Study II 3-9 Units Grading Basis: Pass/Fail Term Typically Offered: Summer, Fall Odd Years Prerequisite(s): Doctoral student in Entrepreneurship. Description: Students may select a specialized topic to study under faculty supervision. Note: Previously taught as ENTR 790. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>ENTR 723. Seminar in Organizational Behavior/Human Resources in Entrepreneurship 3 Units Term Typically Offered: Spring Even Years Prerequisite(s): Doctoral student in Entrepreneurship. Description: This course covers organizational behavior and human resources in entrepreneurial firms. Note: Previously taught as ENTR 740. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>ENTR 734. Independent Study to Prepare Second-Year Paper 3 Units Term Typically Offered: Summer, Fall Odd Years Prerequisite(s): Doctoral student in Entrepreneurship. Description: Students use this independent study to prepare their second-year papers. Note: Previously taught as ENTER 799. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>ENTR 724. Seminar in Entrepreneurship from a Strategic Perspective 3 Units Term Typically Offered: Spring Even Years Prerequisite(s): Doctoral student in Entrepreneurship. Description: This course covers organizational behavior and human resources in entrepreneurial firms. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	

- ENTR 735. Structural Equation Models** 3 Units
Term Typically Offered: Spring Even Years
Prerequisite(s): Doctoral student in Entrepreneurship.
Description: This seminar will explore the fundamentals of structural equation modeling (SEM), different types of variables and SEM assumptions, latent versus manifest variables, the standard versus SEM approach to variable construction and measurement, SEM relative to other statistical methods, and SEM software packages. Each of these will be explored in great detail, and students will be expected to demonstrate proficiency in running and analyzing structural equation models. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENTR 741. Seminar in Research Design II** 3 Units
Term Typically Offered: Summer, Fall Odd Years
Prerequisite(s): Doctoral student in Entrepreneurship.
Description: Reviews advanced research design concepts for performing research in entrepreneurship. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENTR 742. Seminar in Entrepreneurship from an Economic Perspective** 3 Units
Term Typically Offered: Summer, Fall Odd Years
Prerequisite(s): Doctoral student in Entrepreneurship.
Description: Reviews entrepreneurship from an economic perspective.
Note: Previously taught an ENTR 720.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENTR 743. Seminar in Entrepreneurship from a Psychological Perspective** 3 Units
Term Typically Offered: Summer, Fall Odd Years
Prerequisite(s): Doctoral student in Entrepreneurship.
Description: Reviews entrepreneurship from a psychological perspective.
Note: Previously taught as ENTR 733.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENTR 745. Entrepreneurship Theory I** 3 Units
Term Typically Offered: Fall Even Years
Description: A survey of the field of entrepreneurship, the course objective is to familiarize students with the primary theories of the field as well as common and promising methodological approaches to the study of entrepreneurship. Topics include: a theoretical overview of entrepreneurship research agendas, entrepreneurship motivation and opportunity, entrepreneurial attention and information processing, learning and knowledge related to opportunity, entrepreneurial decision making and biases, and entrepreneurs' human and social capital. Class sessions will be devoted to reviewing and critiquing the readings associated with each of the aforementioned topics and generating research opportunities. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENTR 746. Entrepreneurship Theory II** 3 Units
Term Typically Offered: Fall Odd Years
Description: This course is designed as a second broad survey of major topics in the field of entrepreneurship. Its objective is to familiarize the students with some of the primary theoretical underpinnings of the field as well as some of the common and/or promising methodological approaches to the study of entrepreneurial phenomena. Topics covered in the course include: strategic orientation and corporate entrepreneurship, new ventures (strategy, growth, performance), entrepreneurial failure, family business, and international entrepreneurship. Indirectly the course will cover a dissertation in entrepreneurship, the journal reviews process, research methods, and presenting research papers. Class sessions will be devoted to reviewing and critiquing the readings associated with each of the aforementioned topics and generating research opportunities. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENTR 747. Corporate Entrepreneurship and Innovation** 3 Units
Term Typically Offered: Spring Even Years
Description: This course is designed as a focused seminar on the topic of corporate entrepreneurship and innovation. Its objective is to familiarize the students with some of the primary theoretical underpinnings of the field as well as some of the common and/or promising methodological approaches to the study of corporate entrepreneurial phenomena. Topics covered in the course include: corporate entrepreneurship, internal corporate ventures, external corporate ventures, entrepreneurial orientation, firm-level innovation, and strategic rejuvenation. Indirectly the course will also cover a dissertation in entrepreneurship, the journal review process, research methods, and presenting research papers. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENTR 751. Seminar in Current Topics in Entrepreneurship** 3 Units
Term Typically Offered: Spring, Summer, Fall Even Year
Prerequisite(s): Doctoral student in Entrepreneurship.
Description: Reviews current topics in entrepreneurship research.
Note: Previously taught as ENTR 700.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENTR 752. Seminar in a Sociological Perspective on Entrepreneurship** 3 Units
Term Typically Offered: Spring, Summer, Fall Even Year
Prerequisite(s): Doctoral student in Entrepreneurship.
Description: Reviews current topics in entrepreneurship research.
Note: Previously taught as ENTR 710.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ENTR 753. Seminar in Family Business** 3 Units
Term Typically Offered: Spring, Summer, Fall Even Year
Prerequisite(s): Doctoral student in Entrepreneurship.
Description: Seminar in family business.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENTR 754. Seminar in Social Entrepreneurship 1.5 Units

Term Typically Offered: Spring Even Years
Prerequisite(s): Doctoral student in Entrepreneurship.
Description: This course covers social entrepreneurship in the field of entrepreneurship research.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENTR 760. Entrepreneurship Directed Readings I 1-6 Units

Term Typically Offered: Summer, Fall Odd Years
Prerequisite(s): Doctoral student in Entrepreneurship.
Description: Students may select a specialized topic to study under faculty supervision.
Note: Previously taught as ENTR 770.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENTR 762. Entrepreneurship Directed Readings II 1-6 Units

Term Typically Offered: Summer, Fall Odd Years
Prerequisite(s): Doctoral student in Entrepreneurship.
Description: Students may select a specialized topic to study under faculty supervision.
Note: Previously taught as ENTR 771.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENTR 763. Entrepreneurship Directed Readings III 1-6 Units

Term Typically Offered: Summer, Fall Odd Years
Prerequisite(s): Doctoral student in Entrepreneurship.
Description: Students may select a specialized topic to study under faculty supervision.
Note: Previously taught as ENTR 772.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ENTR 780. Special Topics in Entrepreneurship 1-6 Units

Prerequisite(s): Doctoral student in Entrepreneurship.
Description: An advanced study of one or more selected topics or issues related to the study of Entrepreneurship.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Executive Master of Business Administration (EMBA)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

EMBA 600. Joint Executive MBA Program with UK 0 Units

Description: Joint Executive MBA Program with the University of Kentucky
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EMBA 601. Managing People 2 Units

Prerequisite(s): Admission to the program.
Description: Concepts and techniques of individual and groups including personality, motivation, power and politics, decision-making, group dynamics, job satisfaction, cultural influences and organizational development.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EMBA 602. Business Models for Quantitative Analysis 2 Units

Prerequisite(s): Admission to program.
Description: Data organization and presentation, descriptive statistics, common probability distributions, regression and inferential statistics, such as confidence intervals and test of significance.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EMBA 603. Economics I 2 Units

Prerequisite(s): Admission to the program.
Description: Study of market systems, supply & demand analysis, consumer behavior, production theory, economic costs and profit, and horizontal and vertical boundaries of the firm.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EMBA 604. Strategic Analysis 2 Units

Prerequisite(s): Admission to the program.
Description: Strategic Analysis consists of analyzing information from the internal and external environments to recognize and assess organizational strengths, weaknesses, opportunities & threats.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EMBA 605. Economics II 2 Units

Prerequisite(s): Admission to program.
Description: Study of markets and market structure, competitive markets, monopoly, and pricing with market power, and oligopoly, rivalry, and strategic behavior.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

<p>EMBA 606. Financial Accounting 2 Units Prerequisite(s): Admission to the program. Description: Fundamental principles of accounting needed by the manager. Topics include the assumptions of accounting, recording and reporting transactions and interpretation of data for decision-making purposes. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>EMBA 613. Leading Organizations 2 Units Prerequisite(s): Admission to program. Description: Theories of influence, leader behaviors, situation, followership, work teams and transformational leadership. Practical development of self-knowledge, self-confidence and choosing to lead. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>EMBA 607. Business Intelligence 2 Units Prerequisite(s): Admission to program. Description: Introduction to the field of business intelligence, including descriptive, predictive and prescriptive analysis of business data. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>EMBA 614. Managing Global Challenges 2 Units Prerequisite(s): Admission to program. Description: Foundations of the global economy, current trends in the global business environment and issues facing international organizations. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>EMBA 608. Managerial Accounting 2 Units Prerequisite(s): Admission to program. Description: The use of accounting information to support managerial decision-making and business planning. Topics include cost-volume-profit analysis, budgeting and direct costing versus absorption costing. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>EMBA 615. Operations Management 2 Units Prerequisite(s): Admission to program. Description: Application of operation strategies and decisions, including process selection, capacity planning, lead time management and process improvement. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>EMBA 609. Financial Management I 2 Units Prerequisite(s): Admission to program. Description: Introduction to financial concepts. Topics include the time value of money, analysis of risk and return, valuation of stocks and bonds and related concepts. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>EMBA 616. Corporate Entrepreneurship 2 Units Prerequisite(s): Admission to program. Description: The course introduces entrepreneurship in the corporate setting, how it differs from individual entrepreneur activities, and models of entrepreneurial activities in an established organization. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>EMBA 610. Marketing Management I 2 Units Prerequisite(s): Admission to program. Description: Coverage and application of marketing management topics, including segmentation/targeting/positioning, buyer decision making, product/service strategy, promotional decisions, and pricing strategy. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>EMBA 617. Business Strategy and Public Policy 2 Units Prerequisite(s): Admission to program. Description: This course examines how public policy decisions made at the federal and state levels influence business decision making. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>EMBA 611. Financial Management II 2 Units Prerequisite(s): Admission to program. Description: Examines the capital investment decision-making process, cost of capital, financing (capital structure) decisions and related topics. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>EMBA 618. Complex Organizational Change 2 Units Prerequisite(s): Admission to program. Description: This course examines both the content and process of complex organizational change. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>EMBA 612. Marketing Management II 2 Units Prerequisite(s): Admission to program. Description: Part two of marketing management involves expansion of product, distribution/place, and promotions in creating integrated marketing strategies. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>EMBA 619. Negotiations and Conflict Resolution 2 Units Prerequisite(s): Admission to program. Description: The course focuses on developing negotiating skills and becoming a more confident and judicious negotiator. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>

EMBA 620. Strategic Management **2 Units**

Prerequisite(s): Admission to program.

Description: Strategic management consists of top management decision-making regarding business, corporate & international strategies, as well as issues influencing the implementation of those strategies.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EMBA 650. Special Topics **2 Units**

Prerequisite(s): Admission to the program.

Description: Special Executive MBA elective course offerings that focus on a range of topics including (but not limited to): branding, business and marketing analytics, and financial modeling.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Exercise Physiology (EXP)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

EXP 501. Applied Exercise Physiology **3 Units**

Term Typically Offered: Fall Only

Prerequisite(s): Consent of instructor.

Description: Selective review of the pertinent areas of basic physiology and the application of this knowledge to exercise conditions. Consists of both lecture and laboratory format.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EXP 502. Principles of Exercise Testing and Prescription **3 Units**

Term Typically Offered: Spring Only

Prerequisite(s): EXP 501 or consent of instructor.

Description: Effects of exercise to prevent coronary heart disease and atherosclerosis; specific effects of exercise on the established risk factors. Exercise as a rehabilitative measure in heart attack recovery.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EXP 503. Clinical Exercise Physiology **3 Units**

Prerequisite(s): EXP 502 or consent of instructor.

Description: This course provides students with in-depth content regarding the physiology of exercise specifically related to clinical populations.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EXP 600. Exercise Biochemistry **3 Units**

Term Typically Offered: Fall, Spring

Prerequisite(s): EXP 501 and EXP 605 or consent of instructor.

Description: Effects of physical activities and work-related stress on the human organism. Includes energy liberation, circulation and respiration, physical work capacity, physical training, energy cost of various activities, nutrition and performance, temperature regulation, factors affecting performance and fitness, physiology of various sport activities. Laboratory demonstrations and projects and discussion of current literature. Spring.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EXP 601. Laboratory Methods in Exercise Physiology **3 Units**

Term Typically Offered: Fall Only

Prerequisite(s): Consent of instructor Basic laboratory techniques in Exercise Physiology will be covered, including: oxygen consumption, strength measurement, body composition, etc.

Fee: An additional \$95.00 is charged for this course.

Description: General concepts of data collection including validity and reliability will be emphasized. Scientific writing skills will be developed through the use of lab reports. Experimental design and analysis will be briefly discussed. Fall.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EXP 602. Biochemistry of Exercise **3 Units**

Term Typically Offered: Spring Only

Prerequisite(s): EXP 600 or consent of instructor.

Description: Examination of nutritional, energetic and metabolic aspects of exercise. Emphasis on various biochemical control mechanisms that function during exercise and biochemical adaptations that occur through exercise training. Spring.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EXP 603. Seminar in Exercise Physiology **3 Units**

Description: Reviews, presentations and discussions of current topics in exercise physiology.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

EXP 604. Advanced Topics in Exercise Physiology **1-3 Units**

Prerequisite(s): EXP 600 or consent of instructor.

Description: Independent study under the guidance of a selected faculty member.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- EXP 605. Human Physiology** 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): Consent of instructor.
Description: Fundamental mechanisms of human physiology and study of coordinated body functions. Emphasis on neuromuscular, circulatory, respiratory and endocrine systems. Fall.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EXP 606. Case Study Practicum** 3 Units
Prerequisite(s): EXP 501/HPES 486, and EXP 502.
Description: Analysis and critical review of case studies for special population. Exercise prescription, assessment of test results and lifestyle modifications.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EXP 607. Neuromuscular Exercise Physiology** 3 Units
Term Typically Offered: Fall, Spring
Description: This course provides a foundation for the interaction of the nervous system, musculoskeletal system and the control of human movement.
Note: Cross-listed with HSS 500.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EXP 608. Strength and Conditioning I** 3 Units
Description: The course provides some of the content to prepare students for certifications offered by the National Strength and Conditioning Association (Certified Strength and Conditioning Specialist, CSCS), USA weightlifting (Sport Performance Coach), Collegiate Strength and Conditioning Coaches Association (Strength and Conditioning Coach Certified, SCCC), National Academy of Sports Medicine (Performance Enhancement Specialist, PES and Corrective Exercise Specialist, CES), and Functional Movement Systems (Functional Movement Screening, FMS).
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EXP 609. Strength and Conditioning II** 3 Units
Prerequisite(s): EXP 608.
Description: This course is designed to optimize more practical programming and coaching opportunities. It is designed to prepare students to develop and implement safe and effective programming for a variety of athletic populations through manipulation of programming variables and periodization strategies. This course, (along with its prereq) provides some of the content to prepare students for certifications offered by the National Strength and Conditioning Association, National Academy of Sports Medicine, and Functional Movement Systems Inc.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EXP 611. Advanced Cardiorespiratory Physiology with ECG** 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): EXP 501, EXP 502 and EXP 605 or consent of instructor.
Description: Course delivers an in-depth examination of the pathophysiology of cardiovascular and pulmonary diseased states during resting conditions and their effects on the exercise response. The mechanical and electrical properties of the heart are explored through the interpretation of ECG signals including rate, rhythm, axis, hypertrophy and infarction. Myocardial oxygen consumption, pressure-volume loops, arteriovenous oxygen differences, and the effects of cardiac pharmacology are also reviewed.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EXP 620. Exercise Physiology Internship** 3-6 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): EXP 501, EXP 502, EXP 600, EXP 605 or consent of instructor.
Description: Experience in exercise testing, prescription and leadership are available for cardiac rehabilitation, elderly, pulmonary, orthopedic, sports performance, and other special populations as well as healthy individuals.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- EXP 699. Thesis** 1-6 Units
Grading Basis: Pass/Fail
Prerequisite(s): Consent of advisor.
Description: Thesis hours.
Note: Pass/Fail.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Finance (FIN)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

FIN 500. Business Finance **3 Units**

Prerequisite(s): Admission to MBA program.
Description: An introduction to financial concepts from the corporate perspective. Topics include the basics of financial statements, an overview of the financial markets, risk and return, the time value of money, security valuation using time value concepts, cash flow determination and valuation, and long-term capital investment.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

FIN 620. Financial Institutions and Capital Markets **3 Units**

Prerequisite(s): FIN 600 or MBA 635.
Description: A study of financial services firms including the domestic and international markets in which they operate. Topics include money and capital markets, interest rate theory, security valuation, derivatives and immunization, and the characteristics of a financial services firm.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

FIN 630. Investment Analysis **3 Units**

Prerequisite(s): FIN 600 or MBA 635.
Description: The analysis of the process and environment of investment under conditions of uncertainty. The relevance, applicability, and durability of "Old Economy" valuation models and analytical techniques in the "New Economy" are explored and assessed.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

FIN 631. Real Estate Principles **3 Units**

Description: The course provides decision makers with an understanding of real estate that will enable them to make informed business and development decisions related to real estate development.
Note: Cross-listed with PLAN 631.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

FIN 633. Real Estate Development **3 Units**

Description: An introduction to real estate development as an entrepreneurial opportunity and to the study of the interrelationship dynamics of marketing, finance, property management, site acquisition and disposition.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

FIN 634. Real Estate Finance and Investment **3 Units**

Description: Introduction to financial and investment analysis with applications to real estate.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

FIN 680. Special Topics in Finance **1-6 Units**

Description: An advanced study of one or more selected topics or issues related to the study of Finance.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

FIN 698. Research Seminar in Finance **1-3 Units**

Prerequisite(s): One 600-level course in finance and permission of departmental chair.
Description: Seminar topics vary by semester.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Franchise Management (FRAN)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

FRAN 601. Franchise Fundamentals **1.5 Units**

Term Typically Offered: Fall, Spring, Summer
Description: Explore the fundamentals of franchising from the franchisee's point of view. Focus is on the evaluation of franchising opportunities, the legal aspects of franchising, and the development of appropriate strategies for the successful planning, implementation, and launching of a new franchise business.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

FRAN 610. Franchise Law **1.5 Units**

Term Typically Offered: Fall, Spring, Summer
Description: Gain exposure to the legal and regulatory concepts fundamental to franchising. Coverage focuses on contract and trademark issues in franchising, including: formation of franchise contracts; good faith performance, breach, termination, renewal, and assignment; trademark creation, protection and infringement; remedies; and antitrust and trade secret disputes.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

FRAN 620. Buying and Growing a Franchise **1.5 Units**

Term Typically Offered: Fall, Spring, Summer
Description: Gain exposure to the financial terms and considerations for becoming a franchisee and growing operation. Topics covered include evaluating funding sources, preparing financial statements, understanding unit economics and cash flow, tracking financials, and developing a business plan.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

FRAN 630. Franchise Human Resources Infrastructure 1.5 Units**Term Typically Offered:** Fall, Spring, Summer**Description:** Understand the principles and practices of effective HR infrastructure design. Course will cover legal aspects of HR, creating job descriptions and setting pay levels, recruiting and hiring processes, on boarding and training programs, and retention initiatives.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**FRAN 640. Leading Franchise Teams 1.5 Units****Term Typically Offered:** Fall, Spring, Summer**Description:** Learn strategies to drive high performance and keep top talent. Focus is on creating your own organizational culture, leveraging franchisor's training and development opportunities, creating development plans, building recognition programs, and reducing turnover.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**FRAN 650. Building a Profitable Relationship with Your Franchisor 1.5 Units****Term Typically Offered:** Fall, Spring, Summer**Description:** Identify and evaluate strategies for growing a franchise business, including multi-branding, cross-branding, acquisitions, new builds, and/or market growth. Specific attention will be paid to franchisor Key Performance Indicators, securing capital, pitfalls to rapid growth, and succession.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

French (FREN)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).**FREN 500. French Work Exchange 3-6 Units****Prerequisite(s):** Membership in a University of Louisville Work-Exchange Program with Montpellier administered by the International Center.**Description:** Credit awarded upon demonstration of successful completion of course undertaken with prior approval of the department. Cooperating businesses in Montpellier provide jobs for participants who gain practical experience in a French work environment.**Note:** Only three credits can be applied to a French major.**Note:** May be repeated.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**FREN 506. Francophone Women Writers 3 Units****Prerequisite(s):** FREN 321 and FREN 322, or faculty consent.**Description:** Readings of literary and non-literary texts by women of the French-speaking world.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**FREN 522. French Phonetics and Diction 3 Units****Prerequisite(s):** 6 hours of French at 300+ level or consent of instructor.**Description:** Pronunciation, diction, and intonation in theory and practice. Corrective exercises, recordings for the analysis of individual pronunciation problems. Poetry and prose studied in phonetic transcription, using the International Phonetic Alphabet; extemporaneous speaking and prepared readings.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**FREN 523. Advanced Communication Skills 3 Units****Term Typically Offered:** Fall Only**Prerequisite(s):** FREN 321 and FREN 322, or faculty consent.**Description:** Advanced French language course focusing on written and oral expression through the study of French and/or francophone literary and cultural texts.**Note:** Required of all French majors.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**FREN 524. Theory and Practice of Translation 3 Units****Term Typically Offered:** Spring Only**Prerequisite(s):** FREN 455.**Description:** Discusses translation theory and develops techniques for the effective translation of a variety of materials.**Note:** Required of all French majors.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- FREN 531. Special Topics in Literature and Cultural Studies** 3 Units
Prerequisite(s): FREN 455 or faculty consent.
Description: An intensive study of an aspect of French or Francophone literature and/or culture.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- FREN 551. French Oral Practicum** 3 Units
Grading Basis: Pass/Fail
Prerequisite(s): Membership in the UofL work-exchange program with Montpellier administered by the International Center.
Description: Credit awarded upon demonstration of successful completion of course undertaken with prior approval of the department. Cooperating businesses in Montpellier provide jobs for participants who gain practical experience in a French work environment.
Note: Only 3 credits total count toward French minor.
Note: May be repeated for credit.
Note: Taught on Pass/Fail basis.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- FREN 552. French Work: Exchange Research** 3 Units
Prerequisite(s): Membership in the UofL work-exchange program with Montpellier administered by International Center.
Description: Credit awarded upon demonstration of successful completion of a research project supervised by a French faculty member. Cooperating businesses in Montpellier provide jobs for participants who gain practical experience in a French work environment.
Note: Only 3 credits total count toward French major.
Note: May be repeated for credit.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- FREN 561. Independent Study I** 1-3 Units
Prerequisite(s): Consent of department.
Description: Independent study in areas not covered in the regular curriculum.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- FREN 562. Independent Study II** 1-3 Units
Prerequisite(s): Consent of department.
Description: Independent study in areas not covered in the regular curriculum.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- FREN 590. Senior Capstone - CUE** 3 Units
Term Typically Offered: Occasionally Offered
Prerequisite(s): Declared French major, Senior standing, and completion of all 300- and 400-level requirements for the French major.
Description: Critical and reflective thinking to integrate undergraduate work and explore options for future employment.
Note: Required for all French majors.
Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- FREN 599. Special Topics** 3 Units
Prerequisite(s): Consent of instructor.
Description: Topics of a unique or specialized nature in French language, literature or culture.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- FREN 600. Advanced French Stylistics** 3 Units
Prerequisite(s): Admission to Graduate program in French.
Description: Analysis of French language usage, oral and written, with emphasis on grammar, lexicon, semantics and phonology.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- FREN 601. Studies in French Linguistics** 3 Units
Description: Exploration of issues in French linguistics.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- FREN 602. Studies in French Culture** 3 Units
Description: Exploration of issues in French culture.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- FREN 603. Studies in French Media** 3 Units
Description: Exploration of issues in French media.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- FREN 604. Studies in French Literature** 3 Units
Description: Exploration of issues in French literature.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- FREN 611. Teaching and Research Methods in French** 3 Units
Description: Introduction to teaching and research methods in French through observation, investigation and practice.
Note: Required of all French MA students.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

FREN 655. Independent Reading in French **3 Units**

Prerequisite(s): Graduate status.

Description: Readings in literature, civilization, culture, history, or linguistics.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

FREN 670. Special Topics **3 Units**

Prerequisite(s): Consent of instructor.

Description: Selected topics in French language, literature, or culture.

Topics chosen will reflect the needs of the students and the background of the instructor.

Note: May be repeated under different subtitles.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

FREN 680. Seminar **3 Units**

Prerequisite(s): Consent of instructor.

Description: Selected writers or personalities in French language, literature, or culture. Topics chosen will reflect the needs of the students and the background of the instructor.

Note: May be repeated under different subtitles.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

FREN 690. Thesis **3-6 Units**

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

FREN 699. Final Research Project **3 Units**

Prerequisite(s): 15 hours of graduate work.

Description: Production of a research paper on a French or francophone literary or cultural topic supervised by a French faculty member.

Note: Required of all French MA students.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Geography (GEOG)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

GEOG 500. Globalization Seminar **3 Units**

Prerequisite(s): GEOG 300 or permission of instructor.

Description: A discussion-based course that focuses on current events, global economies, and cultural and environmental issues resulting from globalization.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

GEOG 510. Urbanism in the Global South: Cities and Space **3 Units**

Term Typically Offered: Occasionally Offered

Description: This course is a reading-based seminar. We learn about processes and practices within the Latin American and African city from a spatial, cultural, economic and political perspective.

Note: Cross-listed with LALS 510 and UPA 652.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

GEOG 520. Geography and Nutrition Among African and African-American Populations **3 Units**

Prerequisite(s): Consent of instructor.

Description: Comparison of geographical conditions, food culture, technology and socioeconomic factors among Africans and African-Americans affecting health and nutrition.

Note: Previously cross-listed with PAS 560.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

GEOG 521. Medical Geography **3 Units**

Prerequisite(s): Faculty consent.

Description: Introduction to concepts, methods and tools used to investigate geographic aspects of health and disease. Application of concepts and methods through analysis of health, population and environmental data.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

GEOG 522. GIS and Public Health **3 Units**

Term Typically Offered: Occasionally Offered

Prerequisite(s): Consent of instructor.

Description: Application of tools and methods of analysis in geographic information systems (GIS) to public health. Use of ArcGIS software to manage and analyze health, census and spatial data.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

GEOG 524. Food and Race **3 Units**

Description: This course will serve as a critical analysis of the intersection between race and food/agriculture. Topics covered include: 1) production, preparation and consumption patterns; 2) food production during slavery and sharecropping; 3) modern day agricultural labor; 4) food and health; 5) food and borders; and 6) food and national identity.

Note: Cross-listed with PAS 605.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

<p>GEOG 525. Measuring Sustainability: Our Human Planet 3 Units</p> <p>Term Typically Offered: Spring Odd Years</p> <p>Description: This course will facilitate student understanding of the United Nations Sustainable Development Goals in a spatially-explicit manner by introducing how Earth Observation data is being used to monitor and measure the SDG indicators.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>GEOG 536. Sustainable Transportation 3 Units</p> <p>Term Typically Offered: Occasionally Offered</p> <p>Prerequisite(s): GEOG 200 or permission of instructor.</p> <p>Description: The course looks into the problems of developing sustainable transportation systems. We will examine the environmental and human problems associated with transportation; including climate change, air quality, consumption of non-renewable resources, safety, congestion and social equity. We will also explore possible solutions to these problems, including pricing, planning, policy, technology and education.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>GEOG 528. Planning, History and Issues 3 Units</p> <p>Prerequisite(s): GEOG 328.</p> <p>Description: The history of planning and contemporary issues with an emphasis on role of planning, zoning and law.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>GEOG 540. Geography and Human-Environment Interactions 3 Units</p> <p>Description: The study of interactions between humans and the environment is inherently interdisciplinary and multi-scaler, two of the hallmarks of contemporary geographic research. Students taking this course will be exposed to the theoretical underpinnings of both social and ecological aspects of research. Through in-class discussions of both seminal and contemporary peer-reviewed literature, students will be expected to engage in an interdisciplinary exploration of how studies of human-environment interactions have evolved from disciplinary roots into the large, complex and transdisciplinary projects commonly funded today and expected in the future.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>GEOG 529. Geography of Urban Issues 3 Units</p> <p>Term Typically Offered: Occasionally Offered</p> <p>Prerequisite(s): GEOG 328, GEOG 558 or comparable Urban Geography and GIS course.</p> <p>Description: Advanced urban geography course with unique geographic perspective for integration of socioeconomic problems in America's metropolitan areas.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>GEOG 545. Unoccupied Aerial Systems and Geospatial Applications 3 Units</p> <p>Term Typically Offered: Spring Odd Years</p> <p>Description: This course introduces unmanned aerial system (UAS) technology, application and the underlying principles of remote sensing and photogrammetry that inform the utilization of UAS data in geographical/environmental research.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>GEOG 530. Transportation Geography 3 Units</p> <p>Term Typically Offered: Occasionally Offered</p> <p>Prerequisite(s): GEOG 200 or consent of instructor.</p> <p>Description: An analysis of distribution and transportation systems as functional entities capable of introducing and reacting to change within the economic region.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>GEOG 548. Special Topics in Urban Analysis Applications in GIS 3 Units</p> <p>Prerequisite(s): GEOG 357 or GEOG 558.</p> <p>Description: Introduction to the application of GIS by local governments, non-profit agencies and other urban-related groups.</p> <p>Note: May be repeated if topics vary.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>GEOG 531. GIS & Urban Demographic Analysis 3 Units</p> <p>Term Typically Offered: Fall Only</p> <p>Prerequisite(s): GIS knowledge or concurrent tutorial.</p> <p>Description: Demographic analysis through the use of GIS technology. Emphasis placed on metropolitan area characteristics including population change, segregation, ethnic settlement, social and economic stratification and commuting.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>GEOG 549. Special Topics in Environmental Analysis Applications in GIS 3 Units</p> <p>Description: Introduction to the application of GIS to environmental problem solving.</p> <p>Note: May be repeated if topics vary.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>GEOG 535. GIS and Retail Site Analysis 3 Units</p> <p>Term Typically Offered: Fall Only</p> <p>Prerequisite(s): GIS knowledge or concurrent tutorial.</p> <p>Description: Retail site analysis through use of GIS technology. Emphasis placed on market demand and supply characteristics. Physical site analysis, demographics, and competitive environment will be examined.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	

<p>GEOG 555. Remote Sensing Term Typically Offered: Fall Only Fee: An additional \$80.00 is charged for this course. Description: This course provides an introduction to the theory and application of remote sensing data with weekly lab reports for hands-on-experience in the acquisition and utilization of remotely-sensed data in geographical/environmental research. This course prepares for GEOG 556. Prior completion of GEOS 200, GEOS 350, or GEOS 301, or PHYS 111 or equivalent is recommended, but not required. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>	<p>GEOG 590. Special Topics Description: Investigation of topics not offered in regular courses. Topic will be announced in Schedule of Courses. Note: Offered as needed. Note: May be repeated for different topics up to a limit of 12 hours.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>
<p>GEOG 556. Advanced Remote Sensing Prerequisite(s): GEOG 555 or consent of instructor. Fee: An additional \$80.00 is charged for this course. Description: Application of advanced techniques involved in the collection of digital imagery data from aircraft and spacecraft instruments. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>	<p>GEOG 599. Directed Readings in Geography Prerequisite(s): Advanced courses in geography or related fields; permission of major department. Description: Supervised readings centered around a specific region or topical field for advanced work. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>1-4 Units</p>
<p>GEOG 558. Introduction to Geographic Information Systems Term Typically Offered: Fall, Spring, Summer Description: Introduction to geographic information systems using ArcGIS software, management of relational databases, and manipulation and graphical output of digital geo-spatial data. Note: May not be taken for credit if credit has been earned in GEOG 357 or GEOG 557.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>	<p>GEOG 600. History and Philosophy of Geography Description: An explanation of the history of geographic thought and the paradigms that have shaped geography since the late nineteenth century. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>
<p>GEOG 559. Advanced Geographic Information Systems Prerequisite(s): GEOG 558. Description: Application of advanced GIS concepts to real-world projects. An emphasis will be placed on the development of a digital spatial database. Note: Graduate students must arrange for an additional project for graduate credit.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>	<p>GEOG 620. Geography & Nutrition Among African and African-American Populations Description: An in-depth examination of the nutritional status of Africans, African Americans and persons of African descent. The course will focus on comparison of epidemiological transition, political economy of nutrition, politics of food welfare programs, food aid, over-nutrition (obesity), under-nutrition and dietary-related diseases among African Americans, Africans and persons including blacks in the Diaspora. Note: Cross-listed with PAS 660.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>
<p>GEOG 561. Urban Environmental Quality Prerequisite(s): Consent of instructor. Description: A study of environmental aspects of urban areas and analysis of inter- and intra-city variations in environmental quality. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>	<p>GEOG 628. Planning History and Issues Prerequisite(s): Consent of instructor. Description: The history of planning and contemporary issues with a special emphasis on the role of planners, zoning and law. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>
<p>GEOG 583. Spatial and Non-Spatial Database Management Term Typically Offered: Occasionally Offered Prerequisite(s): GEOG 357 or GEOG 558. Description: Provides students with "hands-on" experience in development, management and integration of spatial and non-spatial databases, using GIS and database management software. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>	<p>GEOG 631. Urban Demography Prerequisite(s): Graduate standing. Description: Spatial analysis of the distribution, characteristics, growth, and change of the population of a metropolitan area. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>

GEOG 635. Real Estate Market Analysis 3 Units

Prerequisite(s): GEOG 327 or Urban Economics or consent of the instructor.

Description: Covers concepts, methodologies and analytical tools used in urban real estate market analysis, with a particular emphasis on site selection using GIS applications.

Note: Cross-listed with PLAN 614.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

GEOG 640. Approaches & Methods in Applied Geography 3 Units

Description: Examination of concepts and methods used by applied geographers.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

GEOG 641. Research Design and Proposal Development in Applied Geography 3 Units

Prerequisite(s): GEOG 600, GEOG 656, GEOG 660.

Description: Provides students with the background needed to design a research study and develop a research proposal and culminates in development of thesis proposal.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

GEOG 656. Spatial Statistics 3 Units

Prerequisite(s): Statistics course.

Description: The analysis of spatial patterns and processes through the use of spatially-based statistics.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

GEOG 657. Geographic Information Systems 3 Units

Prerequisite(s): Consent of instructor.

Description: Application of GIS to real world projects. An emphasis will be placed on the development of a digital spatial database.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

GEOG 660. Qualitative Methods in Applied Geography 3 Units

Description: An examination of the philosophical underpinnings of the qualitative approach with practical experience in conducting qualitative research.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

GEOG 685. Introduction to Programming for GIS and Spatial Data Analysis for Graduate Students 3 Units

Description: There are two primary goals for this course. First, students will learn introductory computer programming concepts and features. Students will deconstruct examples from a variety of programming and scripting languages (primarily Python, R, VBA, and IDL), learning how to identify common logic, flow control and syntactic features. Students will learn the purpose of these structures and how to start using the programming and scripting environments of common statistics, geographic information systems (GIS) and remote sensing (RS) platforms.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

GEOG 690. Special Topics 1-3 Units

Description: Investigation of topics not offered in regular courses. Topic will be announced in Schedule of Courses. Offered as needed.

Note: May be repeated for different topics up to a limit of 12 hours.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

GEOG 691. Research and Independent Study 1-5 Units

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

GEOG 698. Thesis 1-6 Units

Prerequisite(s): Permission of instructor.

Description: Reading, research, and writing of thesis under the supervision of a faculty member.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

German (GER)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

GER 500. German Study Abroad **1-15 Units**

Prerequisite(s): Membership in a University of Louisville Language Study Abroad Program or a program approved by the department.

Description: Credit awarded upon demonstration of successful completion of program undertaken with prior approval of the department, including a paper or project and an oral or written examination in the language and culture, administered under the supervision of a faculty member.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

GER 599. Special Topics **3 Units**

Term Typically Offered: Occasionally Offered

Prerequisite(s): Permission of instructor.

Description: Topics of a unique or specialized nature in German language, literature or culture.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Graduate Interdisciplinary (GS)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

GS 500. Summer Undergraduate Research and Creative Activity **0 Units**

Term Typically Offered: Summer Only

Description: This course is to register students who are participating in 10-week undergraduate summer research programs.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

GS 601. Academic Communication in English **1-3 Units**

Description: Classes and a range of interactive activities are designed to help international graduate students gain confidence in both academic and conversational English in authentic settings and contexts. Course outcomes include that students will acquire a sophisticated vocabulary and facility with idiomatic language; improve pronunciation, improve understanding of English in academic and nonacademic contexts, improve ability to discuss academic and non-academic topics, current events, and cultural issues; be able to give short presentations and execute small public speaking tasks with greater fluency, accuracy, and confidence.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

GS 611. Seminar: Cultural Resource Management **3 Units**

Description: Cultural Resource Management Seminar.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

GS 612. Cultural Resource Management: Field Methods **3 Units**

Description: Field Methods in Cultural Resource Management.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

GS 650. Directed Readings: Cultural Resource Management **3 Units**

Description: Directed Readings on the topic of Cultural Resource Management.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

GS 683. College Teaching **3 Units**

Description: Analysis of the elements of effective college teaching; observation and evaluation of teaching; opportunities for microteaching; and investigation of rights and responsibilities of faculty members.

Note: Cross-listed with ELFH 683.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

GS 699. Interdisciplinary Research **1-12 Units**

Prerequisite(s): Major in Interdisciplinary Studies.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

GS 700. Administrative Enrollment **0 Units**

Description: Administrative Enrollment

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

GS 799. Doctoral Exam Prep **0 Units**

Grading Basis: Pass/Fail

Description: Students preparing for qualifying/comprehensive exams require special permission from both the director of the program of study and the Dean of SIGS to enroll in the course. Counts as full-time just as enrollment in candidacy counts as full time; students who are enrolled in this course are expected to be studying and preparing full time for their exams, just as students enrolled in candidacy are expected to be working on their research and dissertation full-time.

Note: 0-hour course; cannot be repeated more than two times; permission of program director and Dean of SIGS required; course is considered full-time and may not be taken with more than one additional 3-hour course.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Health and Sport Sciences (HSS)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

HSS 500. Neuromechanics of Human Performance **3 Units**

Term Typically Offered: Fall, Spring

Prerequisite(s): HSS 387; HSS 394, and Consent of Instructor.

Description: This course provides a foundation for the interaction of the nervous system, musculoskeletal system, and the control of human performance.

Note: Cross-listed with EXP 607.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HSS 501. Stress and Tension Control **3 Units**

Term Typically Offered: Occasionally Offered

Prerequisite(s): HSS 202 or equivalent.

Description: A study of physiological, sociological, and psychological stresses and their underlying mechanisms of action. Emphasis on modification of stress via developed proficiency in relaxation techniques.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HSS 503. Obesity: Causes, Control **3 Units**

Prerequisite(s): HSS 202 or equivalent.

Description: A study of the physiological, psychological, and sociological factors in the development and modification of obesity. Laboratory experiences in the assessment of obesity will be provided. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HSS 504. Physical Activity and Public Health **3 Units**

Term Typically Offered: Fall, Spring

Description: Students will examine individual, social, organizational, community, environmental, and policy factors that serve as facilitators and barriers to the promotion of physical activity and public health. This course is designed to provide students with the knowledge, skills, and abilities to conduct physical activity and public health needs assessments; to plan, implement, evaluate, lead, and manage physical activity and public health interventions, initiatives, and programs; to conduct physical activity and public health research; and to communicate and advocate for physical activity and public health promotion.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HSS 505. Environmental Physiology **3 Units**

Term Typically Offered: Spring, Summer

Prerequisite(s): HSS 486 Advanced Exercise Physiology The study of the physiological adaptations to acute and chronic challenges imposed by the environment.

Description: Topics will focus on how different physiological systems respond to various environmental stressors, including heat, cold, and high altitude.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HSS 506. Athlete Monitoring and Data Management **3 Units**

Term Typically Offered: Fall, Spring

Prerequisite(s): Graduate Standing or Consent of Instructor.

Description: Basic Data Management will be taught including data collection, entry, and management in both XCEL and R Programs. Students will learn data collection techniques for Global Positioning Systems (GPS), Force Plate, and Velocity-Based Training forms of athlete monitoring. By the end of the course, students will have strong skills in analyzing monitoring data, visualization of data into meaningful charts, and be proficient in the ability to interpret results into comprehensive reports for coaches and the sports performance team.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- HSS 507. Senior Seminar in Exercise Physiology** 3 Units
Term Typically Offered: Occasionally Offered
Prerequisite(s): HSS 387 and HSS 394; 90+ hours; and permission of instructor.
Description: Critical and comprehensive examination of well-defined topics related to exercise physiology that are not studied in regular courses. Topics will be announced in schedule of courses. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HSS 530. Nutrition and Athletic Performance** 3 Units
Prerequisite(s): HSS 302 and HSS 303; or consent of instructor.
Description: Principles of nutrition with special emphasis on nutrient and energy needs of athletes of optimal performance. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HSS 564. Women's Health Issues** 3 Units
Description: This course will identify a broad range of health issues that can be unique to women or of special importance to women throughout the world. The course will examine the roles women play as both providers and consumers of health care nationally and internationally. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HSS 565. Nutrition for Children and Adolescents** 3 Units
Description: Nutritional needs during childhood are covered with emphasis on diet evaluation, menu planning and disease prevention. Nutrition units will be developed using the curriculum planning map. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HSS 567. Healthy Sexuality and AIDS Education** 3 Units
Description: A study of the basic competencies required for AIDS/STD education and prevention within the framework of healthy sexual functioning. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HSS 575. Administration of Physical Education Program and Athletics** 3 Units
Description: Administration of the total physical education program on the secondary school level, including units on budget, staff, facilities, programs, equipment, public relations, and evaluation. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HSS 589. Prevention and Care of Athletic Injuries II** 3 Units
Prerequisite(s): HSS 389 or equivalent or consent of instructor.
Description: Focuses on basic anatomy and its relationship in sports-induced injuries. Provides framework for adapting prevention, evaluation, management and rehabilitation techniques to aid in the treatment of athletic injuries. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HSS 597. Special Topics in Health and Sport Science** 3 Units
Term Typically Offered: Occasionally Offered
Prerequisite(s): Consent of instructor.
Description: Examination of well-defined topics not studied in regular courses. Topics will be announced in Schedule of Courses. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HSS 598. Independent Study in Health and Sport Science** 1-3 Units
Description: Opportunity for the student, under the supervision of a sponsoring faculty member, to pursue individualized study related to research or practice that is not included in regular courses in the curriculum. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HSS 601. Philosophy of Sport and Physical Education** 3 Units
Description: Study of sport from various philosophical positions. Relation of theories and thoughts about what constitutes sport to particular time periods. Offered as needed. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HSS 602. Instructional Technology in Health and Sport Sciences** 3 Units
Description: The course is designed to develop students' technology skills in order to support their activities in K-12 classrooms and other health and wellness settings. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HSS 604. Research Methods in HSS** 3 Units
Prerequisite(s): HSS 377.
Description: Techniques used in developing the research project. Development of outline for action research project. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HSS 605. Teaching and Learning for Elementary Physical Education** 4 Units
Description: Philosophy, objectives, curriculum and methods of teaching physical education to elementary students. Must be taken prior to student teaching. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HSS 606. Teaching and Learning for Secondary Physical Education** 4 Units
Description: Philosophy, objectives, curriculum and methods of teaching physical education to secondary students. Content-area literacy strategies for physical education will be covered. Must be taken prior to student teaching. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HSS 607. Methods of Supervision in Physical Education 3 Units

Description: Covers various models of supervision. Several systematic observational data collection systems will be used to develop skills for supervision in physical education.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HSS 608. Curriculum: An Achievement Based Approach 3 Units

Prerequisite(s): Admission to MAT in Physical Education Program.

Description: Presents a variety of curricular approaches to physical education along with activities to help the teacher deliver the content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HSS 609. TEACHING AND LEARNING FOR HEALTH EDUCATION 4 Units

Term Typically Offered: Fall Only

Prerequisite(s): Admission to the MAT.

Description: This course is designed to cover planning, implementation and evaluation of health education for middle and high school students. This course must be taken prior to student teaching.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HSS 610. Experiential Outdoor Education Leadership 3 Units

Prerequisite(s): Admission to MAT in Physical Education Program.

Description: Teaches necessary skills to lead outdoor experiential education programs.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HSS 611. Seminar in Student Teaching in Health and Physical Education 3 Units

Prerequisite(s): Admission to MAT in Health Physical Education P-12 Program.

Corequisite(s): HSS 612, HSS 613 and HSS 615.

Description: Designed as analysis of student teaching activities for the purpose of improving instructional competence, developing professionalism and reflective teaching skills, and understanding the learner within the instructional context. Each graduate student must complete an action research project during student teaching experience.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HSS 612. Student Teaching: Elementary Physical Education 4 Units

Prerequisite(s): Admission to MAT in Physical Education Program.

Corequisite(s): HSS 611.

Description: Provides supervised observation, participation and teaching in physical education at the elementary and secondary school levels.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HSS 613. Student Teaching: Middle/Secondary Physical Education 4 Units

Prerequisite(s): Admission to MAT in Physical Education Program.

Corequisite(s): HSS 611.

Description: Provides supervised observation, participation and teaching in physical education at the elementary and secondary school level.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HSS 614. Action Research Project 3 Units

Prerequisite(s): Admission to MAT in Physical Education Program.

Corequisite(s): HSS 611 and HSS 612.

Description: Each graduate student must complete an action research project during the student teaching experience.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HSS 615. Student Teaching: Health Education 4 Units

Description: Five weeks of supervised observation, participation, and teaching health education in middle and high schools. Must be taken concurrently with HSS 612 and HSS 613.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HSS 618. Diverse Populations in Physical Activity and Health 3 Units

Description: The study of social and cultural system of diverse groups, related to physical activity and health.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HSS 619. Practicum: Psychomotor Assessment of Dysfunctions in Adapted Physical Activity 3 Units

Description: Administration of tests of psychomotor functioning; interpretation of findings; writing the educational diagnosis; participation in multidisciplinary settings.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HSS 620. Instructional Design in Adapted Physical Activity 3 Units

Prerequisite(s): Background in physical education and/or special education, or consent of instructor.

Description: Designed to provide knowledge and understanding which will enable students to plan and conduct diversified programs of developmental activities, games, sports, and rhythms suited to the interests, capabilities, and limitations of typical students.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HSS 621. Diagnostic/Assessment in Adapted Physical Activity 3 Units

Description: Instructional intervention applied to the physical education setting; emphasis on design, implementation and evaluation of assessment tools and procedures in programs for the disabled.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- HSS 625. Instructional Leadership in Physical Education 3 Units**
Description: A critical examination of the current knowledge base and best practices in K-12 physical education instruction, programming, assessment and professional development.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HSS 629. Introduction to Health Consultation 3 Units**
Prerequisite(s): HSS 501 and HSS 503.
Description: Study of the basic skills required for health behavior change using a health counseling approach with emphasis on the development of skills needed to design and facilitate health counseling programs.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HSS 630. Nutrition and Athletic Performance 3 Units**
Prerequisite(s): College nutrition course or consent of instructor.
Description: Principles of nutrition with special emphasis on nutrient and energy needs of athletes for optimal performance.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HSS 631. Leadership in Health Promotion 3 Units**
Description: Analysis of administrative and organizational factors of health education and promotion from within the program, within the organization, and between organizations. Emphasis will be placed on policy making, administration, and functional issues such as collaboration and consultation at the organizational level.
Note: Cross-listed with HSS 531.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HSS 649. Psychological Aspects of Physical Education and Sport 3 Units**
Description: Analysis of the interaction among personality, motor ability, group dynamics, and environment in physical education and sports performance.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HSS 650. Personality and Social Development in Sport 3 Units**
Description: Systematic study of man's behavior in sport in relation to his social environment. Emphasis on the relationship between physical activity and interpersonal competence, attitudes, personality and aggression.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HSS 655. Current Trends and Studies in Health and Sport Sciences. 3 Units**
Description: Examination of current literature, research and trends in HSS.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HSS 659. Motor Control and Learning: Lab 3 Units**
Description: Experiments in motor learning that promote the use of basic apparatus and practical applications of research.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HSS 660. Motor Control & Learning 3 Units**
Description: Analysis and critical review of literature on selected topics relating to motor control and learning. Emphasis on research in the area of motor learning.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HSS 663. Sexuality Education 3 Units**
Description: Survey of the dynamics of family life and parenting skills. Scope of family life education, methods, source materials and current issues.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HSS 669. Administering Health Promotion and Disease Prevention Programs 3 Units**
Prerequisite(s): A year of sport management or consent of instructor.
Description: Special problems in administration of health promotion and disease prevention programs in a variety of community organizations. Program planning and organization; financing and budgeting; measuring program effectiveness; integration of health promotion and disease prevention programs and strategies with existing healthcare delivery systems.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HSS 675. Health Promotion and Disease Prevention at the Individual Level 3 Units**
Description: Techniques for identifying patterns of health-negative behaviors and life-style patterns on the part of an individual and health-negative circumstances in an individual's immediate environment. Development, implementation, and evaluation of person-focused changed strategies designed to eliminate, offset, and/or minimize the effects of health-negative behaviors and microenvironmental factors.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HSS 676. Community Health Promotion and Disease Prevention 3 Units**
Description: Analytic techniques for identifying health-negative factors in the organizational and community setting; developing, implementing, and evaluating strategic plans and programs for health promotion and disease prevention at the organizational and community level.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HSS 684. Program Planning in Health Education and Promotion 3 Units**
Description: Effective design, implementation, and evaluation of health instruction within the school and community setting. Emphasis on the development of sequential learning opportunities designed to meet individual and societal health needs and interests.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HSS 690. Seminar in Comparative Analysis 3 Units

Prerequisite(s): At least one graduate methods course.
Description: Qualitative Comparative Analysis is a method of doing cross-case analysis with a specific focus on the influence of context as it relates to health and prevention.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HSS 692. Cooperative Internship/Practicum 1-3 Units

Prerequisite(s): Completed 21 hours toward degree; completed 6 hours of HSS courses.

Description: Supervised practical work experience in an organization or business related to the student's academic field, area of specialization, or career interest.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HSS 697. Special Topics in Health and Sport Sciences 1-3 Units

Description: Examination of one or more selected topics in the study of Health and Sport Sciences.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HSS 699. Directed Readings in Health and Sport Sciences 1-3 Units

Description: Supervised readings and written project relating to a specific research topic in health.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HSS 789. Advanced Research Design 3 Units

Term Typically Offered: Summer Only

Prerequisite(s): LEAD 701, and either LEAD 600 or EDAP 639, or permission of instructor.

Description: Discussion of quantitative research methods and their application to the design of a study. Emphasis on designs for causal inferences about the effects of an intervention on outcomes variables, especially quasi-experimental designs.

Note: Cross-listed with ECPY 789, EDAP 789, and LEAD 789.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Healthcare Administration (HADM)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific

fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

HADM 624. Management Accounting and Cost Analysis for Healthcare 1.5 Units

Description: Study of accounting and financial management procedures and techniques in the healthcare industry. Examines accounting problems unique to the healthcare industry. Applies general accounting analysis and management accounting techniques to healthcare settings. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HADM 625. Healthcare Quality and Operations Management 1.5 Units

Description: Reviews the field of operations management relating to the healthcare market. Examines the relationship between operations research and the management of complex healthcare delivery organizations. Focuses on formulating competitive strategies in operation management decision areas including system design, quality measurement, and productivity analysis.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HADM 626. Healthcare Marketing 1.5 Units

Description: Focuses on the application of marketing concepts in healthcare organizations, specifically hospital, insurance, and physician markets. Application of marketing concepts such as market segmentation planning, positioning and product mix.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HADM 627. Management of Health Services Organizations 1.5 Units

Description: A systematic study of the roles of health services managers and the organizational and environmental context within which they work. An analysis of healthcare organizations with emphasis on management structures.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HADM 628. Medical Informatics 1.5 Units

Description: Surveys the use of information systems in healthcare, emphasizing strategies useful in system development and acquisition. Topics include: history of healthcare information systems; applications of information technology to healthcare delivery; how to manage information technology; and information technology as an enabling technology.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HADM 629. Healthcare Finance 1.5 Units

Prerequisite(s): FIN 500 or HADM 625.

Description: Applied techniques that enable organizations to efficiently manage their financial resources in the unique healthcare setting. Topics include financial analysis, strategic financial planning, capital project analysis, capital structure considerations, and working capital management.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HADM 680. Special Topics in Healthcare 1-3 Units

Description: Advanced study in one or more selected topics or issues related to the study of healthcare administration.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HADM 698. Research Seminar in Healthcare Administration 1-6 Units

Prerequisite(s): MBA 663 (or HADM 620) and permission of program head.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

History (HIST)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

HIST 501. Independent Study 3 Units

Prerequisite(s): Minimum grade point average of 3.0 overall; minimum grade point average of 3.5 in the department, and at least 18 semester hours credit in the department.

Description: Opportunity for the student, under the supervision of a sponsoring faculty member, to pursue individualized study related to research or practice that is not included in regular courses in the curriculum.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HIST 502. Independent Study 3 Units

Prerequisite(s): Minimum grade point average of 3.0 overall; minimum grade point average of 3.5 in the department, and at least 18 semester hours credit in the department.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HIST 503. Advanced Studies in History 3 Units

Term Typically Offered: Occasionally Offered

Prerequisite(s): Consent of instructor.

Description: Selected topics in history that cross traditional geographic or chronological boundaries.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HIST 504. Research Seminar in the Americas - WR, CUE 3 Units

Term Typically Offered: Fall, Spring

Prerequisite(s): 60 credit hours completed and HIST 304 or permission of the instructor.

Description: This culminating undergraduate seminar explores topics in the history of the Americas. Topics will vary by semester and instructor. This course may be repeated twice for credit if different topics are taken.

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HIST 505. Research Seminar in World History - CUE, WR 3 Units

Term Typically Offered: Fall, Spring

Prerequisite(s): 60 credit hours completed and HIST 304 or permission of the instructor.

Description: This culminating undergraduate seminar explores topics in world history outside of the Americas. Topics will vary by semester and instructor. This course may be repeated twice for credit if different topics are taken.

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HIST 508. American Environmental History - CUE, WR 3 Units

Description: Relationship between economic development and environmental change, focusing on America, pre-colonial to present.

Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HIST 510. Studies in American History 3 Units

Description: Intensive study of particular topic, to be announced in course schedule.

Note: May be repeated under different subtitles.

Note: Junior standing is recommended.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HIST 511. History of the Old South - CUE, WR 3 Units

Description: Economic life, society, and government in the southern states from colonial times to the Civil War.

Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HIST 513. U.S. Social Justice Movements of the 20th Century 3 Units

Term Typically Offered: Fall, Spring

Prerequisite(s): Junior standing.

Description: Course will begin with abolitionism, then concentrate on social justice upsurges of the 20th century, with emphasis on women in the civil rights and Black liberation movements. (Social Sciences)

Note: Cross-listed with WGST 513, PAS 513, SCHG 513, WGST 613.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HIST 519. Gilded Age and Progressive Era United States, 1877-1929 - WR 3 Units

Description: An intensive study of the social, economic, political and intellectual aspects of American History from the end of Reconstruction to the beginning of the Great Depression.

Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HIST 521. Colonial America to 1765 - WR, CUE 3 Units

Prerequisite(s): 60 credit hours completed.

Description: History of North America, focusing on the British Colonies, beginning with the first native Americans, to the end of the Seven Years War.

Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HIST 522. The American Revolution and the Confederation - WR, CUE 3 Units

Prerequisite(s): 60 credit hours completed.

Description: An intensive study of the American Revolution and of the background of the Constitution.

Note: Approved for the Arts and Sciences upper-level requirement in written Communication (WR).

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HIST 528. Recent American History, 1929-1945 - CUE, WR 3 Units

Prerequisite(s): 60 credit hours completed.

Description: An intensive study of the economics, policies, and social and intellectual developments of the Great Depression and World War II years in the United States.

Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HIST 529. Recent American History, 1945 to Present - WR, CUE 3 Units

Prerequisite(s): 60 credit hours completed.

Description: An intensive study of the economics, politics, and social and intellectual developments of the modern period in the United States.

Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HIST 530. History of Radio - WR, CUE 3 Units

Term Typically Offered: Spring Odd Years

Description: This course explores the history of radio broadcasting from its beginnings to the present, with a focus on the way radio both reflected and shaped the political, cultural, technological, and economic history of the twentieth century. The primary focus is on radio in the United States, but the radio in other national and regional contexts is also considered. While the course devotes most of its attention to radio's so-called 'golden age' from the 1920s to the 1940s, there is also ample discussion of radio during the television and internet eras.

Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).

Note: It is recommended that students have completed HIST 304 before taking this course.

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HIST 540. Advanced Studies in History - WR, CUE 3 Units

Prerequisite(s): 60 credit hours completed.

Description: Advanced study of a special topic; meets established guidelines for WR courses; writing and rewriting of papers throughout the term.

Note: Junior standing is recommended.

Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HIST 542. Studies in Graeco-Roman History - WR, CUE 3 Units

Prerequisite(s): 60 credit hours completed.

Description: Topics to be chosen by instructor (e.g., the Ancient Historians).

Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HIST 550. Studies in Ancient History - CUE, WR 3 Units

Prerequisite(s): 60 credit hours completed.

Description: In-depth examination of special topics in ancient history.

Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HIST 551. Studies in Medieval History - CUE, WR 3 Units

Prerequisite(s): 60 credit hours completed.

Description: Intensive work in selected periods of medieval history (e.g., High Middle Ages, Europe in the fourteenth and fifteenth centuries).

Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HIST 579. History of European Ideas: Selected Topics - WR, CUE 3 Units

Prerequisite(s): 60 credit hours completed.

Description: Selected topics on thinkers in the arts and sciences from one or more generations of European thought between the age of Charlemagne and the present. Includes the influence of ideas on their immediate society as well as on European culture and history.

Note: Topics will be announced in the Schedule of Courses.

Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HIST 582. Contemporary Europe 1945-Present - WR, CUE 3 Units

Description: History of Europe from the postwar era to the present.

Note: Approved for the Arts and Sciences upper-level requirement in written communication.

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HIST 584. Women in East Asian History 3 Units

Description: The history of women in China from ancient times to the twentieth century, with comparisons to women's experiences in Japan, Korea, and Vietnam.

Note: Cross-listed with WGST 584.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HIST 589. History of American Sexualities - WR 3 Units

Description: Focuses on sexual behaviors and meanings in America from the Colonial period to the late twentieth century, and how sexual meanings impact on people's identities, choices, and social positions. Also concerns the interaction of gender, race, and class.

Note: HIST 211 and HIST 212 is recommended.

Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).

Note: Credit may not be earned for this course and WGST 532.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HIST 590. Studies in African History - WR, CUE 3 Units

Prerequisite(s): Junior standing or faculty consent.

Description: Intensive study of a particular topic chosen by the instructor (e.g., slavery and the slave trade, traditional kingdoms).

Note: Cross-listed with PAS 590.

Note: Junior standing and completion of 9 hours of HIST and/or PAS are recommended.

Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HIST 594. Studies in Middle Eastern History - WR 3 Units

Description: Selected topics in Middle Eastern history and societies.

Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HIST 595. Principles of Cultural History - WR 3 Units

Description: The study of major systematic views of the development of Western culture.

Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).

Note: Credit may not be received for this course and HUM 595.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HIST 597. Introduction to Public History 3 Units

Description: Introduction to nature, history, and methods of public history. Emphasis on relationship of historical scholarship to nonacademic applications.

Note: Credit may not be earned for both HIST 597 and HIST 697.

Note: Faculty consent is recommended.

Note: This course is cross-listed with HIST 697 and HUM 671.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HIST 599. Oral History - WR, CUE 3 Units

Prerequisite(s): 60 credit hours completed.

Description: A study of the nature and development of oral sources in history, the creation and evaluation of them, and their application to research and teaching.

Note: Faculty consent is recommended.

Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HIST 601. Directed Study 3 Units

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HIST 602. Directed Study 3 Units

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HIST 603. Thesis 3-6 Units

Description: Thesis hours.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HIST 605. Research Methods and Materials 3 Units

Prerequisite(s): Graduate students only.

Description: Techniques of historical research, analysis, organization, and writing; documentation, historiography; use of research libraries, manuscript depositories and electronic resources. Experience in analysis, research, writing, and criticism.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HIST 607. Oral History 3 Units

Description: An introduction to the method and theory of oral history.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

<p>HIST 608. Practicum in Public History 3 Units Prerequisite(s): A minimum GPA of 3.0 overall and in History. Description: Supervised experience in a public history setting. Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>HIST 641. Seminar in Modern World History 3 Units Description: Graduate readings course in a topic or geographic area of world history. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>HIST 610. Introduction to Historic Preservation 3 Units Description: An introduction to historic preservation. Includes history and theory of historic preservation, law, government and preservation, strategies for conserving historic resources, and local initiatives. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>HIST 650. Seminar in Ancient History 3 Units Description: In-depth examination of a topic in ancient history. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>HIST 611. Studies in American History 3 Units For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>HIST 651. Studies in Medieval History 3 Units For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>HIST 612. Studies in American History 3 Units For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>HIST 662. Seminar in Early Modern European History 3 Units Description: In-depth examination of a topic in early modern European history (late 15th-18th c.). For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>HIST 618. Practicum in Public History II 3 Units Term Typically Offered: Fall, Spring, Summer Prerequisite(s): Good standing in history graduate program; permission of instructor. Description: An independent work experience in a public history setting. This course is reserved for MA students majoring in public history and taking their second internship requirement. Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>HIST 682. Studies in Modern European History 3 Units For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>HIST 621. Seminar in American History 3 Units Description: In-depth examination of a topic in American history. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>HIST 683. Seminar in Modern European History 3 Units Description: In-depth examination of a topic in modern European history (after 1800). For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>HIST 622. Seminar in American History 3 Units Description: In-depth examination of a topic in American history. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>HIST 690. Studies in Middle Eastern History 3 Units Description: Graduate studies in Middle Eastern history. Lecture, student papers and oral presentations. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>HIST 629. Studies in Military History 3 Units Description: Advanced reading in the fundamental works of military history. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>HIST 697. Introduction to Public History 3 Units Description: Introduction to methods and theory in the field of public history. Note: Credit may not be earned for both HIST 597 and HIST 697. Note: Faculty consent is recommended. Note: This course is cross-listed with HIST 597 and HUM 671.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>

Humanities (HUM)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that

they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

HUM 500. Honors Thesis in Humanities - WR 3 Units

Prerequisite(s): Junior standing; admission to Divisional Honors Program.

Description: An intensive examination of a topical area in Humanities undertaken with a designated faculty director.

Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 501. Independent Study 1-3 Units

Prerequisite(s): Minimum grade-point average of 3.0 overall; minimum grade point average of 3.5 in the department; at least 18 hours credit in the department; consent of Division chair.

Description: Individualized study under the supervision of a sponsoring faculty member that is related to research or practice that is not included in regular courses in the curriculum.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 502. Independent Study 1-3 Units

Prerequisite(s): Minimum grade-point average of 3.0 overall; minimum grade point average of 3.5 in the department, and at least 18 hours credit in the department.

Description: Consent of Division chair.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 505. Humanities Study Abroad - WR 3-6 Units

Term Typically Offered: Occasionally Offered

Prerequisite(s): Participation in the University of Louisville study abroad program or a program approved by the Department of Comparative Humanities.

Description: Credit awarded upon demonstration of successful completion of program, including a paper or project and an oral or written examination administered under the supervision of a faculty member.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 509. Interdisciplinary Approaches: Arts and Humanities - WR, CUE 3 Units

Prerequisite(s): Junior standing; majors only.

Description: Methods and theories in interdisciplinary thinking and research, emphasizing 1) the interrelationships of the disciplines, 2) the importance of synthesizing art, theatre, literature, music, philosophy, and religion in a cultural context, and 3) the critical examination of issues arising from fields outside the Humanities that have significant impact on and synergy with the Humanities.

Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).

Note: Credit may not be earned for both HUM 509 and HUM 609.

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 510. Methods and Theories in the Study of Religion - CUE, WR 3 Units

Prerequisite(s): Completion of 90 hours and permission of instructor.

Description: . A survey of major theories and methodologies in the academic study of religion from a historical perspective.

Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).

Note: Credit may not be earned for both HUM 510 and HUM 610.

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 511. Topics in the Interpretation of Sacred Texts 3 Units

Prerequisite(s): Junior standing.

Description: Study in depth of sacred texts and commentaries selected from the major religions of the world: Hebrew Bible, New Testament, Qur'an, Vedas, Bhagavad Gita, and Buddhist sutras.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 512. Topics in Contemporary Religious Thought 3 Units

Prerequisite(s): Junior standing.

Description: In-depth study of selected contemporary writers from major world religions.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 513. Topics in Comparative Religions 3 Units

Prerequisite(s): Junior standing.

Description: A critical study of similarities and differences in ideas and attitudes toward significant themes in world religions.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 514. Perspectives on Religious Coexistence and Conflict 3 Units

Prerequisite(s): Junior standing.

Description: Through interdisciplinary methodological and theoretical frames of analysis, exemplary cases of global, historical interreligious encounters will be explored.

Note: Credit may not be earned for both HUM 514 and HUM 614.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 515. Topics in Gender and the Humanities 3 Units

Prerequisite(s): Junior Standing.

Description: Specialized topics in Gender and the Humanities will be explored through advanced, interdisciplinary methodological and/or theoretical frames.

Note: Credit may not be earned for both HUM 515 and HUM 615.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 516. Topics in the Histories of Religion 3 Units

Prerequisite(s): Junior Standing.

Description: Advanced study of selected histories of individual religious traditions and/or interaction between religious traditions in different historical contexts.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 518. Arabs & Jews in Israeli & Palestinian Literature & Cinema 3 Units

Prerequisite(s): ENGL 101 and ENGL 102.

Description: Students explore the nexus of Israeli and Palestinian literature and history from the 1948 war to the present, exploring issues of empathy with the other, the commemoration of personal and collective trauma and dispossession, and the construction of peoplehood and national identity.

Note: Cross-listed with HUM 618.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 524. Special Topics in Film Study 3 Units

Prerequisite(s): Junior standing.

Description: An in-depth study on a specific topic to be announced in the Schedule of Courses.

Note: May be repeated up to three times for different topics.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 541. Feminism and Science Fiction 3 Units

Term Typically Offered: Occasionally Offered

Description: This class will examine the science fiction genre through the lens of gender and feminism. The course will develop students' critical reading, thinking, writing and presentation skills. Reading works of science fiction with and against classic readings in feminist theory, students will develop an understanding of the ways writers, particularly women writers, have worked within the genre to explore issues related to gender, race, class, and sexuality. Students will be asked to consider the ways the science fiction writers have participated in on-going dialogues within larger culture, within the SF community, and within feminism, related to gender roles, gender and sexual identity, and hegemonic social structures.

Note: Cross-listed with WGST 541.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 550. Internship in Arts and Humanities 3 Units

Prerequisite(s): Consent of chair of Humanities or undergraduate advisor.

Description: An individually arranged internship that combines volunteer work experience with an Arts or Humanities organization or agency with a related academic project.

Note: Course cannot be repeated for academic credit toward the degree.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 555. Independent Reading 2-3 Units

Prerequisite(s): Honors standing, junior standing, consent of division chair.

Description: Readings in cultural history; oral and written reports.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 561. Selected Topics 3 Units

Prerequisite(s): Junior standing.

Description: Content to be indicated in the Schedule of Courses.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 562. Selected Topics 3 Units

Prerequisite(s): Junior standing.

Description: Content to be indicated in the Schedule of Courses.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 581. Dante 3 Units

Prerequisite(s): Junior standing.

Description: Study of Dante's life and major works, and the social, political, and cultural milieu which affected his literary career.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 590. ST: Interdisciplinary Perspectives on the Humanities - WR 3 Units

Term Typically Offered: Fall, Spring, Summer

Description: Interdisciplinary topics to be announced in the Schedule of Courses. May be repeated up to three times under different topics.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 595. Principles of Cultural History - WR 3 Units

Prerequisite(s): Completion of 75 undergraduate hours.

Description: The study of major systematic views of the development on Western culture.

Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).

Note: Credit may not be received for this course and HIST 595.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 608. Queer Performance 3 Units

Term Typically Offered: Occasionally Offered

Description: What constitutes queer performance? Is queer who you are or what you do? Is sexuality all we mean by queer? What are the historical, aesthetic, and political aspects of queer performance? Integral to our theoretical discussions will be questions of practice and production: Where is queer performance staged and how is it received? How is it produced, for whom, by whom, and with what funds? Is queer inherently or even necessarily radical? Within rigid Western notions of gender, the "Queer Performer," is a gender outlaw; an individual who pushed at the edges of gender, forcing us to recognize that gender has little to do with our biological sex. Their performances of their gender(s), race(s), and/or sexuality(ies) challenges our prevailing notions of what it means to be Queer and what it means to perform identity. This course will examine the artistic and aesthetic performances of various Queer Performers to foster an understanding and appreciation of the rich diversity of the forms of performance styles and practitioners that might be called "lesbian," "gay," "transgender," and "queer," among others. Secondly, it will motivate students to examine the broad social, political, religious, and cultural contexts in which queer performance takes place. Lastly, this course will allow students to contemplate what it means to be a spectator of performance through a queer perspective, regardless of one's identity, or sexual orientation.

Note: Cross-listed with WGST 508 and WGST 608.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 609. Interdisciplinary Theory: Arts and Humanities 3 Units

Prerequisite(s): Graduate standing.

Description: Methods and theories in interdisciplinary thinking and research emphasizing 1) the interrelationships of the disciplines; 2) the importance of synthesizing art, theatre, literature, music, philosophy, and religion in a cultural context; and 3) the critical examination of issues arising from fields outside the Humanities that have significant impact on the synergy with the Humanities.

Note: Credit may not be earned for both HUM 509 and HUM 609.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 610. Methods and Theories in the Study of Religion 3 Units

Prerequisite(s): Graduate standing.

Description: A survey of major theories and methodologies in the academic study of religion from a historical perspective.

Note: Credit may not be earned for both HUM 510 and HUM 610.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 611. Topics in the Interpretation of Sacred Texts 3 Units

Prerequisite(s): Graduate standing.

Description: In-depth study of sacred texts and commentaries selected from the major religions of the world: Hebrew Bible, New Testament, Qur'an, Vedas, Bhagavad Gita, and Buddhist sutras.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 612. Topics in Contemporary Religious Thought 3 Units

Prerequisite(s): Graduate standing.

Description: In-depth study of selected contemporary writers from major world religions.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 613. Topics in Comparative Religions 3 Units

Prerequisite(s): Graduate standing.

Description: A critical study of similarities and differences in ideas and attitudes toward significant themes in world religions.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 614. Perspectives on Religious Coexistence and Conflict 3 Units

Prerequisite(s): Graduate standing.

Description: Through interdisciplinary methodological and theoretical frames of analysis, exemplary cases of global, historical interreligious encounters will be explored.

Note: Credit may not be earned for both HUM 514 and HUM 614.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 615. Topics in Gender and the Humanities 3 Units

Prerequisite(s): Graduate standing.

Description: Specialized topics in Gender and the Humanities will be explored through advanced interdisciplinary methodological and/or theoretical frames.

Note: Credit may not be earned for both HUM 515 and HUM 615.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- HUM 616. Topics in the Histories of Religion** 3 Units
Prerequisite(s): Graduate standing.
Description: Advanced study of selected histories of individual religious traditions and/or interaction between religious traditions in different historical contexts
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HUM 618. Arabs and Jews in Israeli & Palestinian Literature & Cinema** 3 Units
Prerequisite(s): ENGL 101 and ENGL 102.
Description: Students explore the nexus of Israeli and Palestinian literature and history from the 1948 war to the present, exploring issues of empathy with the other, the commemoration of personal and collective trauma and dispossession, and the construction of peoplehood and national identity.
Note: Cross-listed with HUM 518.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HUM 624. Special Topics in Film Study** 3 Units
Prerequisite(s): Graduate standing.
Description: An in-depth study on a specific topic to be announced in the Schedule of Courses.
Note: May be repeated up to three times for different topics.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HUM 635. Interdisciplinary Theory of Repulsion and Disgust** 3 Units
Prerequisite(s): Graduate standing.
Description: This course explores the role of the emotion of disgust in human cultural history through an investigation of its treatment in a range of disciplines: psychology and psychoanalysis, health studies, law, anthropology, religious studies, history, cultural studies, philosophy - aesthetics and phenomenology, literature and visual art. Students are encouraged to engage in research that complements their own areas of specialization.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HUM 636. Introduction to Public Humanities** 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): Graduate standing.
Description: Introductory course in Public Humanities critically exploring notions of the individual, freedom, community, and public engagement. Required for MA concentration in Humanities and Public Humanities.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HUM 637. American Thought and Culture** 3 Units
Prerequisite(s): Graduate standing.
Description: Introduction to history of ideas in terms of twentieth-century American thought and culture, with an emphasis on community values and the arts.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HUM 640. Graduate Reading Knowledge** 3 Units
Grading Basis: Pass/Fail
Prerequisite(s): Graduate standing or consent of chair.
Description: Intensive language course, designed for graduate students who are preparing for language reading examinations. Provides reading knowledge of a foreign language by focusing on fundamentals and translation.
Note: Cross-listed with M L 640.
Note: The credits may not be used as part of the graduate program.
Note: May be repeated up to 3 times for different languages.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HUM 641. Feminism and Science Fiction** 3 Units
Term Typically Offered: Occasionally Offered
Description: This class will examine the science fiction genre through the lens of gender and feminism. The course will develop students' critical reading, thinking, writing and presentation skills. Reading works of science fiction with and against classic readings in feminist theory, students will develop an understanding of the ways writers, particularly women writers, have worked within the genre to explore issues related to gender, race, class, and sexuality. Students will be asked to consider the ways the science fiction writers have participated in ongoing dialogues within larger culture, within the SF community, and within feminism, related to gender roles, gender and sexual identity, and hegemonic social structures.
Note: Cross-listed with WGST 641.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HUM 645. Thesis Guidance** 1-6 Units
Prerequisite(s): Approval of chair.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HUM 650. Graduate Internship** 3-6 Units
Prerequisite(s): Approval of chair or graduate advisor.
Description: Enrollment limited to students pursuing the MA concentration in Humanities and Civic Leadership. An individually arranged internship, combining a volunteer work experience in an Arts/ Humanities organization or agency with a related academic project.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- HUM 651. Independent Study** **3 Units**
Prerequisite(s): Approval of chair or graduate advisor.
Description: A research project directed by a member of the division faculty involving independent investigation, interpretation, and application, culminating in an academic research paper or directed study project report.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HUM 652. Independent Study** **3 Units**
Prerequisite(s): Approval of chair or graduate advisor.
Description: A research project directed by a member of the division faculty involving independent investigation, interpretation, and application, culminating in an academic research paper or directed study project report.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HUM 653. Doctoral Project I** **3 Units**
Prerequisite(s): Graduate standing.
Description: A series of exercises leading to the completion of four book reviews suitable for publication in journals in the student's field. The project is directed by a faculty member working with the student individually.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HUM 654. Doctoral Project II** **1-3 Units**
Prerequisite(s): Graduate standing.
Description: A series of exercises leading to the completion of an article suitable for a publication in the student's field. The project is directed by a faculty member working with the student individually.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HUM 655. Directed Study Project** **3 Units**
Prerequisite(s): Graduate standing and approval of the chair or graduate advisor.
Description: A directed study project involving investigation, interpretation, and application culminating in a non-thesis alternative.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HUM 660. Proseminar: Introduction to Doctoral Study** **3 Units**
Prerequisite(s): Graduate standing, doctoral students only.
Description: An overview of Humanities doctoral studies, from basic doctoral and post-doctoral procedures (seminar and conference papers, journal and book publications, the dissertation, the academic job market, jobs for PhDs beyond academe, and more) through an introduction to the general types of advanced modern and contemporary theory students are likely to encounter in courses that follow.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HUM 661. Historical Perspectives on Arts & Culture I** **3 Units**
Prerequisite(s): Graduate standing.
Description: Introduction to interdisciplinary critical analysis of the arts and humanities in their historical context providing a foundation for close examination of individual works representative of specific periods.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HUM 662. Historical Perspectives on Arts & Culture II** **3 Units**
Prerequisite(s): Graduate standing.
Description: Introduction to interdisciplinary critical analysis of the arts and humanities in their historical context providing a foundation for close examination of individual works representative of specific periods.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HUM 663. Global Perspectives on Arts & Culture** **3 Units**
Prerequisite(s): Graduate standing.
Description: Advanced exploration of contributions to thought and the arts from those sectors of global society often overlooked: indigenous peoples and peoples of the conceptual East and South. Rather than progressing through historical periods, the course materials are arranged analytically, by theme, such as "Difference," "Empire," "Migration," and "Adaptation".
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HUM 671. Introduction to Public History** **3 Units**
Term Typically Offered: Fall Only
Description: Introduction to nature, history, and methods of public history. Emphasis on relationship of historical scholarship to nonacademic applications.
Note: Faculty consent is recommended.
Note: Cross-listed with HIST 597 and HIST 697.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HUM 672. Interdisciplinary Seminar** **3 Units**
Prerequisite(s): Graduate standing.
Description: Advanced interdisciplinary research and analysis of selected issues in the Arts and Humanities. Content to be indicated in the Schedule of Courses.
Note: May be repeated up to three times.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- HUM 673. Topics in Cultural Theory** **3 Units**
Prerequisite(s): Graduate standing.
Description: Exploration of advanced theory regarding the formation and maintenance of, and issues in, culture from a social perspective.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 674. Topics in Aesthetic Theory 3 Units

Prerequisite(s): Graduate standing.

Description: Exploration of advanced theory regarding the formation and maintenance of, and issues in, aesthetics and aesthetic approaches to culture.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 681. Topics in Aesthetics and Creativity 3 Units

Prerequisite(s): Graduate standing.

Description: Topics to be co-listed with selected departmental offerings.

Note: May be repeated up to a maximum of five times.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 682. Topics in Studies in Culture 3 Units

Prerequisite(s): Graduate standing.

Description: Topics to be co-listed with selected departmental offerings.

Note: May be repeated up to a maximum of five times.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 683. Exercises in Interdisciplinary Research 3 Units

Prerequisite(s): Graduate standing.

Description: Intensive workshop on the pursuit of research between divergent disciplines, with coverage of theories and methodologies of such work and an individual project drawn from the students' own areas of interest.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 689. Reading for Comprehensive Examinations 3 Units

Grading Basis: Pass/Fail

Prerequisite(s): Restricted to students who are completing or have completed course work and are preparing for exams.

Description: Directed reading on topics of student's comprehensive exams; reading lists are negotiated between student and directors of examination areas.

Note: May not be repeated for credit.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 699. Interdisciplinary Capstone Symposium 3 Units

Prerequisite(s): Graduate standing.

Description: Symposium for candidates completing their content course work during the current academic year.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

HUM 700. Dissertation Research 1-9 Units

Prerequisite(s): Graduate standing and approval of chair or graduate advisor.

Description: Dissertation research

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Industrial Engineering (IE)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

IE 515. Operations Research Methods 3 Units

Term Typically Offered: Fall Only

Prerequisite(s): ENGR 307 or MATH 407 Formulation and solution of basic models in operations research.

Description: Topics to be covered include applications of linear, integer and nonlinear programming; transportation and assignment problems, and network flows models.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

IE 516. Stochastic Operations Research 3 Units

Term Typically Offered: Spring Only

Prerequisite(s): IE 360 or equivalent.

Description: A selection of the probabilistic topics of operations research are included: queuing, renewal and Markov processes, simulation, decision analysis.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

IE 525. Project Management 3 Units

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): Admission in IE or EM program or instructor permission.

Description: Use of CPM, PERT, precedence diagramming, resource allocation heuristics, and other techniques for planning, managing, and controlling engineering projects involving research and development, production, maintenance, and construction. Computer procedures and codes for analyzing complex project networks will be covered.

Note: Cross-listed with EM 525.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- IE 540. Robots and Manufacturing Automation** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): IE 360.
Description: Computer aided manufacturing; robot programming, implementation, application, and computer control; research trends; social impacts.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IE 541. Simulation** 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): IE 240, IE 250, and IE 360.
Description: The use of discrete event simulation to analyze systems. Topics include Monte Carlo techniques, sampling from and identifying stochastic distributions, estimating performance measures from simulation outputs, validation methods, and SIMIO simulation language.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IE 560. Probability and Statistics for Engineers** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): ENGR 102 OR (Calc I AND graduate status).
Description: Engineering applications using probability, random variables, distribution functions, confidence intervals, estimation and hypothesis testing.
Note: Students cannot receive credit for both IE 360 and IE 560.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IE 561. Developing Decision Support Systems with Excel** 3 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): IE 250.
Description: This course teaches the fundamentals of computer programming using Excel's macro language, Visual Basic for Applications (VBA), as the language of instruction. The course starts by teaching students to simplify and extend code generated by Excel's macro recorder and then builds on that base toward developing applications that analyze information and enhance decision making. This course also provides an introduction to the concepts and methods of Decision Science, which involves the application of mathematical modeling and analysis to management problems. It also provides a foundation for modeling with VBA in Excel.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IE 563. Experimental Design in Engineering** 3 Units
Term Typically Offered: Spring, Summer
Prerequisite(s): IE 360 OR IE 560.
Description: Design of engineering experiments and projects using theory of least squares, analysis of variance, randomized blocks, factorial experiments, nested designs, split plot designs and logistic regression techniques. Covers a combination of analysis by hand and using Minitab statistical software. Students may not obtain credit for both IE 563 and ME 611; or for IE 563 and EM 661.
Note: Cross-listed with CSE 563.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IE 580. Introduction to Human Factors Engineering and Ergonomics** 3 Units
Term Typically Offered: Fall Only
Description: The main goal of this course is to introduce students to the study of human cognitive and physical abilities and limitations, and application of that knowledge to engineering design. This course will demonstrate how the application of the human factors and ergonomics principles can improve the design of systems involving the interaction of humans with tools, technology, and the work environment.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IE 581. Advanced Topics in Human Factors Engineering** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): IE 580.
Description: The main goal of this course is to learn and apply advanced methods in human factors engineering, as well as newer models, theories, and frameworks related to the field.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IE 585. Usability Engineering** 3 Units
Term Typically Offered: Spring Only
Description: This course exposes students to the constructs of usability, usefulness, user-centered design, and user-experience (UX) and their relation to engineering design. The course covers an interactive evaluation-centered user experience (UX) lifecycle as a template intended to be instantiated in many different ways to match the constraints of a particular development project. The UX lifecycle, sketching, conceptual design, and formative UX evaluation.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IE 590. Special Topics in Industrial Engineering** 1-6 Units
Term Typically Offered: Fall, Spring, Summer
Description: A theoretical and/or experimental investigation of an industrial engineering design topic.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IE 600. Additive Manufacturing Processes** 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): IE 320 or Graduate Standing.
Description: This course introduces students to additive manufacturing, also known as rapid prototyping or 3D printing, processes. An overview of all additive manufacturing processes is provided. Projects are used to develop in-depth knowledge in key applications of additive manufacturing. Design project gives students an opportunity to apply their knowledge to the design and/or re-design of a component. Students cannot receive credit for both IE 600 and IE 400.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- IE 601. Additive Manufacturing Structure Design** 3 Units
Description: This course focuses on the overview of design issues in additive manufacturing (AM), including the design of structures, materials and processes. The students are expected to gain in-depth understanding of the design issues with current AM technologies. Hands-on projects will be assigned that gives the students the opportunity of understanding the design issues and applying the knowledge to the design of functional parts and assemblies.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IE 602. Graduate Internship in Industrial Engineering** 1 Unit
Grading Basis: Pass/Fail
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Admission to Graduate Study, Permission of Department Chair, and Permission of Director of Career Services.
Description: Supervised professional experience in industry at the graduate level. This course provides the structure and focus for the graduate intern field assignment to ensure that the assignment is appropriate and consistent with the intern's graduate course of study and professional development. May be repeated for credit.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IE 610. Foundations of Optimization I** 3 Units
Prerequisite(s): IE 515.
Description: Formulation and solution of applicable optimization models for linear, integer, and network problems. Efficient algorithmic methods and use of computer modeling languages and systems.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IE 611. Discrete Optimization** 3 Units
Prerequisite(s): IE 515.
Description: A study of the techniques and applications of discrete optimization, especially as related to integer and dynamic programming.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IE 614. Foundations of Optimization II** 3 Units
Prerequisite(s): ENGR 330 and IE 610.
Description: Formulation and solution of applicable optimization models for nonlinear, stochastic programming, robust optimization and convex problems. Efficient algorithmic methods and use of computer modeling languages and systems.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IE 615. Exact and Heuristic Algorithms for Optimization** 3 Units
Term Typically Offered: Fall Odd Years
Prerequisite(s): CSE 120 (or equivalent previous permission of the instructor) and IE 515 (or basic knowledge of linear programming, duality theory and integer programming).
Description: This course is a survey of the most common search methods for optimization problems. We will focus on exact methods (including: Exhaustive Search, Branch and Bound, Column Generation, Decomposition methods), and on heuristic methods (including, Random search, Greedy Search, Local Search, Simulated Annealing (SA), Greedy Randomized Adaptive Search (GRASP), Genetic Algorithms (GA)). Both combinatorial and continuous optimization problems will be considered, with emphasis on combinatorics.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IE 619. Advanced Manufacturing Systems** 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): Previous course preparation in the areas of manufacturing process principles and industrial digital automation control is required.
Description: This course focuses on providing a more comprehensive exposure of science, engineering and practice associated with the modern manufacturing engineering. A broad range of topics, including manufacturing engineering, industrial automation, design for manufacturing, product concept design and prototyping, industrial sensing, internet of things, data analytics, statistics and additive manufacturing. This course does not attempt to establish a rigorous theoretical knowledge base for all the covered topic areas, but instead focuses on establishing the connections among the different topic areas for real-world application scenarios. The course utilizes project-based learning as the primary tool for knowledge learning and hands-on practice. Throughout the course, 5-6 labs/projects are anticipated, all requiring team works and structured reporting. Assignments such as individual homework will be employed as additional learning tools for necessary knowledge for solving manufacturing problems. Note: Students cannot receive credit for both IE 419 and IE 619
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IE 621. Facility Location and Layout** 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): IE 240.
Description: Design and layout of industrial facilities, facility location, space requirement, flow charts, relationships diagrams, material handling, quantitative layout techniques, production line balancing, and computer programs for layout planning.
Note: Cross-listed with IE 421.
Note: Students cannot receive credit for both IE 621 and IE 421.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- IE 625. Production and Inventory Control** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): IE 240 and IE 360.
Description: Topics include the context of inventory management and production planning decisions, economic order quantities, heuristics and models for probabilistic and time-varying demand patterns, coordinated replenishment systems, and aggregate planning.
Note: Students cannot receive credit for both IE 425 and IE 625.
Note: Cross-listed with IE 425.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IE 629. Quality Control** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): This course is only available for those who have not taken IE430.
Description: Previous course preparation in the areas of engineering statistics is required and approved by instructor. Developing an effective total quality control (TQC) system: integrating the quality development, maintenance, and improvement efforts of an organization; control charts, process capability, value engineering, product liability prevention, and computer control.
Note: Students cannot receive credit for both IE 629 and IE 430.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IE 630. Advanced Production Systems Design** 3 Units
Prerequisite(s): IE 421, IE 425, IE 430.
Description: This course is organized around the principles of Lean Manufacturing Engineering. Topics include lean manufacturing, including value, value stream, flow, pull and continuous improvement. Improvement and efficiency are facilitated through a study of factory dynamics, the influence of variability, and "Push and Pull" production systems.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IE 631. Advanced Quality Control** 3 Units
Description: Advanced techniques for quality improvement and process control are investigated; these include advanced techniques of SPC, trouble shooting and diagnostics and Taguchi methods of experimental design.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IE 634. Case Studies in Production and Industrial Engineering** 3 Units
Prerequisite(s): IE 425, IE 515, IE 541.
Description: Case studies illustrate the application of industrial engineering techniques to the design of production systems, the control of construction projects, and health care delivery systems.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IE 640. Applied Systems Analysis** 3 Units
Prerequisite(s): IE 360, IE 370, IE 515.
Description: Problem formulation, data collection, alternative design generation, design evaluation, specification, and implementation for large scale systems.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IE 642. Statistical Methodology in Simulation** 3 Units
Prerequisite(s): IE 360 and IE 541.
Description: Discrete simulation modeling, input probability distributions, random variate generators, output data analysis, validation, variance reduction, experimental design and optimization.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IE 643. Analysis for Decision Making** 3 Units
Prerequisite(s): IE 360 and IE 515.
Description: The role of decision analysis in design; techniques for multicriteria decision analysis; systematic creativity in design.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IE 650. Material Flow Systems Design** 3 Units
Prerequisite(s): IE 515.
Description: Material handling and equipment concepts; computerized plant layout; problem formulation; requirements definition; queuing; location analysis; conveyor theory; simulation; developing and evaluating alternative systems; systems implementation.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IE 655. Supply Chain Engineering** 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): IE 425 or IE 625.
Description: This course is designed to offer a balanced coverage on concept survey, analytics and modeling for operations and engineering in supply chain and logistics systems. Emphasis will be on analysis of strategic, tactical and operational supply chain problems including inventory decisions, revenue operations & modeling, distribution & network design, supply contracts and coordination among supply chain partners. Other related topics to be covered include various critical concepts and strategies such as risk pooling, information sharing, and the role of information systems in supply chain engineering.
Note: Students cannot receive credit for both IE 655 and IE 455.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IE 657. Models for Design and Analysis of Logistical Systems** 3 Units
Prerequisite(s): IE 425, IE 515.
Description: This modeling oriented course for the design, analysis and operation of logistical systems includes topics such as inventory control, transportation, distribution network design, and supply chain management. Both deterministic as well as stochastic models are studied.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- IE 660. Reliability and Maintainability** 3 Units
Prerequisite(s): IE 360.
Description: Design, development, and test techniques required to assure the reliability and maintainability of new systems. Design of maintenance programs for new and existing systems.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IE 662. Predictive Analytics for Decision Making I** 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): IE 560 (Probability and Statistics) or similar course.
Description: This course will prepare students with various predictive analytics methods for manufacturing, healthcare, etc., which will be illustrated in examples. Different data types from real-world examples will be shown. Subsequently, it will be demonstrated how the predictive analytics methods can be used for better decision making. The methods will be implemented in non-programming based standard software such as Matlab, Excel, and Minitab.
Note: Students cannot receive credit for both IE 662 and IE 462.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IE 663. Predictive Analytics for Decision Making II** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): IE 462 or IE 662 or similar; Experience with Python; IE 560 (Prob&Stats) or similar course.
Description: This course provides an introduction to several classical and state-of-the-art machine learning methods and their applications for engineers. Fundamentals of linear model and shallow neural networks, multilayer perceptrons, and deep neural networks will be covered. Modern convolutional neural networks (CNN, including AlexNet, NiN, GoogleNet, ResNet, DenseNet), recurrent neural networks (RNN, including GRU, LSTM, Bi-LSTM, Transformer), and optimization techniques will be discussed with engineering examples implemented in Python.
Note: Students cannot receive credit for both IE 663 and IE 463.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IE 670. Advanced Engineering Economy** 3 Units
Prerequisite(s): IE 370.
Description: Inflation; cost of capital; revenue requirements; uncertainty and risk; propagation of errors; Hillier's results; simulation; capital budgeting.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IE 682. Quality of Care and Patient Safety** 3 Units
Term Typically Offered: Fall Only
Description: This course provides students an overview of the healthcare system and the different types of healthcare delivery, as well as factors that determine quality of care. This course also exposes students to tenets of patient safety from a human factors engineering perspective. Students will learn models of patient safety and incident analysis tools, including Root Cause Analysis (RCA) and Healthcare Failure Mode and Effects Analysis (HFMEA).
Note: Students cannot receive credit for both IE 682 and IE 482.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IE 684. Health IT and Clinician Support** 3 Units
Term Typically Offered: Spring Only
Description: This course provides students an overview of various types of health information technology (IT) systems, as well as strategies, methods, and tools used to support the work and health of clinicians. This course also exposes students to applied tools and guidelines of the design and evaluation of health IT systems. Students will learn to use software to prototype high-fidelity, interactive user interfaces, and to conduct human factors evaluation on health IT systems based on the FDA guidelines. Documentation of such design and evaluation process will also be practiced with the semester project.
Note: Students cannot receive credit for both IE 684 and IE 484.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IE 690. Master of Science Thesis in Industrial Engineering** 1-6 Units
Grading Basis: Pass/Fail
Prerequisite(s): Department Chair permission required.
Description: Research on MS thesis project. Grade shall be deferred by the major professor until evaluation of the thesis by the student's committee. Grade on pass-fail basis by the examining committee.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IE 693. Independent Study in Industrial Engineering** 1-12 Units
Description: Opportunity for the student, under the supervision of a sponsoring faculty member, to pursue individualized study related to research or practice that is not included in regular courses in the curriculum.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IE 694. Advanced Topics in IE** 1-6 Units
Prerequisite(s): Consent of instructor.
Description: An advanced course in Industrial Engineering topics not covered by regularly scheduled courses.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

IE 695. PhD Seminar **1 Unit**

Grading Basis: Pass/Fail

Term Typically Offered: Fall, Spring

Prerequisite(s): consent of advisor This course is a series of seminars covering topics related to Industrial Engineering (IE).

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

IE 697. MEng Thesis in Industrial Engineering **1-8 Units**

Description: A candidate for the Master of Engineering degree, specializing in the field of industrial engineering, is required to perform a study, design, or investigation under the direction of a faculty member. A written thesis is required to be presented orally and submitted to the faculty for approval.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

IE 699. Industrial Engineering Master's Degree Project **3 Units**

Prerequisite(s): Instructor permission required.

Description: The Industrial Engineering MEng or MS student carries out an engineering project under the supervision of a faculty mentor, prepares an acceptable written report, and presents a seminar on the project.

Note: Cross-listed with EM 699.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

IE 700. Dissertation Research in Industrial Engineering **1-18 Units**

Grading Basis: Pass/Fail

Prerequisite(s): Department Chair permission required.

Description: Research on dissertation project. Grade will be deferred by the major professor until evaluation of the dissertation by the student's committee. Graded on a Pass/Fail basis by the examining committee.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Integrative Master of Business Administration (IMBA)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

IMBA 600. IMBA-Entrepreneurial Thinking **0 Units**

Description: IMBA-Entrepreneurial Thinking

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

IMBA 611. Accounting **1.5 Units**

Prerequisite(s): Admission to the IMBA program.

Description: The format, understanding and interaction of elements of financial statements, effects of business transactions, accounting cycle and understanding of accounting areas, including tax, audit managerial accounting, etc.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

IMBA 612. Economics of Strategy **3 Units**

Prerequisite(s): Enrollment in IMBA program.

Description: This course explores how various economic concepts and tools are used in strategy. Topics include the horizontal and vertical boundaries of the firm, market structure and competition, and strategic positioning.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

IMBA 613. Finance **1.5 Units**

Prerequisite(s): Admission to the IMBA program.

Description: Introduction to financial concepts. Topics include the time value of money, analysis of risk and return, valuation of stocks and bonds and related concepts.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

IMBA 614. Marketing **1.5 Units**

Prerequisite(s): Admission to the IMBA program.

Description: Examines the concepts and principles involved in marketing analysis and implementation of marketing strategy in consumer, business to business, and service organizations.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

IMBA 615. Opportunity Discovery **1.5 Units**

Prerequisite(s): Admission to the IMBA program.

Description: This course acquaints students with the dynamic changes in our economic system and the business opportunities fostered by these changes. The course consists of readings, discussion, and exploration of the opportunity discovery process.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

IMBA 620. Leadership **1.5 Units**

Prerequisite(s): Enrollment in IMBA program.

Description: Theories of influence, leader behaviors, situation, fellowship, work teams, and transformational leadership. Practical development of self-knowledge, self-confidence and choosing to lead.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

IMBA 621. Venture Launch I Term Typically Offered: Fall Only Prerequisite(s): Enrollment in the IMBA program; IMBA 615. Description: This experiential course introduces Lean LaunchPad and Value Proposition Canvas. Student teams identify an initial entrepreneurial concept, and use techniques of customer discovery to get out of the classroom and talk to users in order to validate product-market fit. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	1.5 Units	IMBA 632. Venture Finance Term Typically Offered: Spring Only Prerequisite(s): Enrollment in the IMBA program; IMBA 622. Description: By focusing on entrepreneurship from the investor's perspective, this course teaches funding strategies with a particular focus on equity investments. Students will build on material learned in previous courses and culminate with a written business plan, complete with a finance model, and a presentation to a panel of venture investors. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	1.5 Units
IMBA 622. Venture Strategic Analysis Term Typically Offered: Fall Only Prerequisite(s): Enrollment in the IMBA program; IMBA 615. Description: Strategic analysis consists of analyzing information from the internal and external environments to recognize and assess organizations strengths, weaknesses, opportunities & threats. Strategic analysis in existing firms and new ventures is compared and contrasted. Student teams will conduct and present an industry and competitive analysis of their new venture opportunity. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	1.5 Units	IMBA 634. Financial Strategy Prerequisite(s): Admission to IMBA program. Description: The microeconomics, markets, and financial strategies of the firm. Topics include market structure, pricing, revenue forecasting, cash flows, capital budgeting and structure decisions, agency, risk management. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	3 Units
IMBA 624. Organizational Behavior Prerequisite(s): Enrollment in IMBA program. Description: Concepts and techniques of individuals and groups including personality, motivation, power and politics, decision-making, group dynamics, job satisfaction, cultural influences and organizational development. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	1.5 Units	IMBA 644. Information Technology Strategy Prerequisite(s): Admission in the IMBA program. Description: Exploration of information technology concepts and tools as used in strategy. Emphasis on assessing information technology tools for competitiveness in a digital economy. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	1.5 Units
IMBA 626. Team Dynamics I Prerequisite(s): Admission to the IMBA program. Description: This course introduces and reinforces successful team processes as well as skills necessary for team success as an individual and as a colleague on a work team. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	1.5 Units	IMBA 646. Operations Management Prerequisite(s): Admission to IMBA program. Description: Exploration of the major concepts and issues in the field of operations management. Topics include standard terms, basic models, and new concepts to describe service and manufacturing delivery systems. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	1.5 Units
IMBA 630. Project Management Prerequisite(s): Enrollment in IMBA program. Description: This course is to help students plan appropriately, think critically and document a project and to provide instruction and practice in critical thinking in regards to project management. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	1.5 Units	IMBA 652. Venture Accelerator I Prerequisite(s): Enrollment in the IMBA program. Description: Support for the development and growth of early stage teams through coverage of advanced entrepreneurship topics, mentoring by venture experts, identification of and application for non-dilutive seed funding, and connections with business mentors. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	1.5-3 Units
IMBA 631. Venture Launch II Term Typically Offered: Fall, Spring Prerequisite(s): Enrollment in the IMBA program; IMBA 621. Description: This experiential course builds on earlier courses by expanding Lean LaunchPad methodology and introducing the Business Model Canvas. Student teams continue to get out of the classroom and talk with individuals representing all components of their product/service value chain in order to validate all components of their Business Model Canvas. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	1.5 Units	IMBA 654. Venture Accelerator II Term Typically Offered: Fall Only Prerequisite(s): Enrollment in the IMBA program; IMBA 652. Description: Support for the development and growth of early stage teams through coverage of advanced entrepreneurship topics, mentoring by venture experts, identification of an application for non-dilutive seed funding, and connections with business mentors. Opportunity to participate in the regional and national new venture competitions. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	1.5-3 Units

- IMBA 656. Managerial Accounting** 1.5 Units
Term Typically Offered: Fall Only
Prerequisite(s): Admission to the IMBA program and permission of instructor.
Description: This course covers managerial accounting methods and techniques and how they are used to assist organizations to achieve their strategic objectives. Managerial accounting topics include product costing, activity-based costing, planning and controlling costs, budgeting, standard cost systems, new production philosophies, and analytical techniques for decision making.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IMBA 657. Venture Sales Management** 1.5 Units
Prerequisite(s): Enrollment in the IMBA program.
Description: Coverage of the fundamental topics and subject matter related to the business and practice of selling in a startup venture environment.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IMBA 658. Brand Building** 1.5 Units
Prerequisite(s): Enrollment in IMBA program.
Description: This course is intended for those interested in learning how brands are managed and employed as strategic assets. In addition to those pursuing a career in marketing, the course may be of interest to those contemplating careers in consulting.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IMBA 660. Corporate Entrepreneurship** 1.5 Units
Prerequisite(s): Admission to IMBA program.
Description: This course introduces entrepreneurship in the corporate setting and how it differs from the activities of the individual entrepreneur. Course activities include the development of a team model to support entrepreneurial activities in an established organization.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IMBA 662. Corporate and Global Strategy** 1.5 Units
Term Typically Offered: Spring Only
Prerequisite(s): Enrollment in the IMBA program.
Description: Corporate and global strategy consists of top management decision-making regarding business, corporate, and global strategies as well as issues influencing the implementation of those strategies.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IMBA 664. Venture Accelerator III** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): Enrollment in the IMBA program; IMBA 654.
Description: Support for the development and growth of early stage teams through coverage of advanced entrepreneurship topics, mentoring by venture experts, identification of an application for non-dilutive seed funding, and connections with business mentors. Opportunity to participate in the regional and national new venture competitions.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IMBA 668. Business Consulting** 3 Units
Prerequisite(s): Admission in IMBA program and permission of instructor.
Description: Assist a start-up or existing business in addressing key business needs or problems with a focus on growth opportunities.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IMBA 680. Special Topics** 1-6 Units
Prerequisite(s): Admission in IMBA program and permission of instructor.
Description: An advanced study of one or more selected topics related to business, including a single or combination of business subjects such as management, accountancy or finance.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IMBA 698. IMBA Independent Study** 1-3 Units
Prerequisite(s): Admission in IMBA program and permission of associate dean for master's programs.
Description: Students will work independently on a program of study and/or research approved and supervised by a member of the faculty.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- IMBA 699. IMBA Internship** 1 Unit
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Admission in IMBA program and permission of IMBA Director or Dean, College of Business.
Description: Students will work with a selected organization and apply expertise learned in the IMBA program to a significant research problem or project.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Latin American and Latino Studies (LALS)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

LALS 510. Urbanism in the Global South: Cities and Space 3 Units**Term Typically Offered:** Occasionally Offered**Description:** This course is a reading-based seminar. We learn about processes and practices within the Latin American and African city from a spatial, cultural, economic and political perspective.**Note:** Cross-listed with GEOG 510 and UPA 652.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LALS 680. Issues in Latin American and Latino Studies 3 Units**Prerequisite(s):** Students must be accepted into the UofL Graduate School.**Description:** This course provides an overview of significant historical, political, cultural, and social issues that shape the national identity of Spanish-speaking nations, and those concerning Latinos in the United States, and addresses the challenges they face today.**Note:** Formerly LAS 680.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LALS 681. Latin American Latino Studies Graduate Internship 3 Units**Description:** LALS Graduate Internships provide students the opportunity to enhance their understanding of Latin America by volunteering 80 hours for an organization that serves the Hispanic community in Louisville or abroad.**Note:** Formerly LAS 681.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Linguistics (LING)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

LING 503. Syntax 3 Units**Term Typically Offered:** Fall Even Years**Prerequisite(s):** LING 325 or LING 327 or graduate standing.**Description:** Critical review of recent and current theoretical approaches to syntax and semantics. Focus on revisions of Chomsky's extended standard theory and emerging theories. Will survey contributions made by other approaches.**Note:** Cross-listed with LING 603.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LING 506. Historical and Comparative Linguistics 3 Units**Term Typically Offered:** Spring Odd Years**Prerequisite(s):** LING 325 or LING 327 or graduate standing.**Description:** A historical study of phonological, morphological, and semantic changes in language through the comparative method and internal reconstruction; recent trends in diachronic linguistics.**Note:** Cross-listed with LING 606.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LING 507. Morphology 3 Units**Term Typically Offered:** Spring Even Years**Prerequisite(s):** LING 325 or ENGL 325 or equivalent.**Description:** In Linguistics, Morphology focuses on the ways that words are related to meaning or grammatical function may also show similarities in their form. These similarities are seen especially in how the parts of words are put together (roots, prefixes, suffixes), but Morphology also considers many other marking systems found across the world's languages.**Note:** Cross-listed with LING 607.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LING 510. Phonetics and Phonology 3 Units**Term Typically Offered:** Fall Odd Years**Prerequisite(s):** LING 325 or LING 327 or graduate standing.**Description:** An introduction to phonetics and phonological theory; study of nature and organization of sound language.**Note:** Cross-listed with LING 610.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LING 522. Structure of Modern English 3 Units**Term Typically Offered:** Occasionally Offered**Prerequisite(s):** Junior standing; ENGL 102 or ENGL 105.**Description:** Examination of the structure of modern English language; emphasis on grammatical terminology and systems of classification. Students collect and analyze linguistic examples, spoken and written. Recommended for prospective English teachers.**Note:** Cross-listed with ENGL 522.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LING 523. History of the English Language 3 Units

Prerequisite(s): Junior standing; ENGL 102 or ENGL 105.
Description: The evolution of modern English in terms of social, historical, and linguistic forces which molded it. Emphases include: Indo-European origins, Germanic sources and Latin, French, and Danish influences; structural and lexical change; development of dialect differences; colonial spread of English; role of English in technology; emergence of World Englishes.
Note: Cross-listed with ENGL 523.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LING 524. Psycholinguistics 3 Units

Term Typically Offered: Spring Only
Prerequisite(s): PSYC 307 or ENGL 325 or LING 325 or LING 518.
Description: Psychological aspects of language and their significance for analysis and understanding of cognitive and social processes.
Note: Cross-listed with PSYC 524.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LING 535. Topics in Applied Linguistics 3 Units

Prerequisite(s): (Undergraduates) LING 325 or ENGL 325; Junior standing.
Description: This course will focus on one aspect of applied linguistics. Topics may include discourse analysis, ESL teaching, language change, gender and language, or other relevant topics in applied linguistics.
Note: May be repeated up to a maximum of three times on different topics.
Note: Cross-listed with ENGL 535.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LING 570. Language and Social Identity 3 Units

Description: An introduction to the social systems and language varieties found across societies. Additionally, students will objectively explore both linguistic and social norms.
Note: Cross-listed with ENGL 570.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LING 590. Special Topics in Linguistics 3 Units

Prerequisite(s): Junior standing.
Description: Intensive investigation of selected topics in current linguistic theory or practice.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LING 600. Independent Study 3 Units

Prerequisite(s): 12 graduate hours in Linguistics and consent of chair.
Description: Guided independent in-depth study of a topic in linguistic theory or practice.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LING 603. Syntax 3 Units

Term Typically Offered: Fall Even Years
Prerequisite(s): LING 325 or LING 327 or graduate standing.
Description: Critical review of recent and current theoretical approaches to syntax and semantics. Focus on revisions of Chomsky's extended standard theory and emerging theories. Will survey contributions made by other approaches.
Note: Cross-listed with LING 503.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LING 606. Historical and Comparative Linguistics 3 Units

Term Typically Offered: Spring Odd Years
Prerequisite(s): LING 325 or LING 327 or graduate standing.
Description: A historical study of phonological, morphological, and semantic changes in language through the comparative method and internal reconstruction; recent trends in diachronic linguistics.
Note: Cross-listed with LING 506.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LING 607. Morphology 3 Units

Term Typically Offered: Spring Even Years
Description: In Linguistics, Morphology focuses on the ways that words are related to meaning or grammatical function may also show similarities in their form. These similarities are seen especially in how the parts of words are put together (roots, prefixes, suffixes), but Morphology also considers many other marking systems found across the world's languages.
Note: Cross-listed with LING 507.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LING 610. Phonetics and Phonology 3 Units

Term Typically Offered: Fall Odd Years
Prerequisite(s): LING 325 or LING 327 or graduate standing.
Description: An introduction to phonetics and phonological theory; study of nature and organization of sound language.
Note: Cross-listed with LING 510.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LING 620. Special Topics in Linguistics 3 Units

Prerequisite(s): LING 325 or LING 327 or graduate standing.
Description: Intensive investigation of selected topics in current linguistic theory or practice.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LING 621. Sociolinguistics**3 Units****Prerequisite(s):** LING 325 or LING 327 or graduate standing.**Description:** The nature of language in social context, presented within the theoretical framework of generative grammar.**Note:** Cross-listed with ENGL 621.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LING 624. Language and Cognition**3 Units****Prerequisite(s):** LING 325 or LING 327 or graduate standing.**Description:** Examination of the theory and research on the relationship between fundamental processes of cognition and linguistics processes, e.g., organization of thought, memory, discourse, and text.**Note:** Cross-listed with PSYC 624.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LING 630. Language and Culture**3 Units****Prerequisite(s):** LING 325 or LING 327 or graduate standing.**Description:** Introduction to the study of language and speaking as part of daily social life, viewed from an ethnographic perspective.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LING 640. Linguistic Anthropology**3 Units****Prerequisite(s):** LING 325 or LING 327 or graduate standing.**Description:** This course provides an introduction to the field of linguistic anthropology. Topics include: the semiotic properties of human language; principles of linguistic and cultural categorization; language use in social interaction; markers of social identity and relationship; registers of social conduct; the textual organization of discourse; the role of discourse in the formulation of norms, and the institutionalization of modes of conduct.**Note:** Cross-listed with ANTH 640.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LING 641. Recent Philosophy of Language**3 Units****Prerequisite(s):** LING 325 or LING 327 or graduate standing.**Description:** Intensive study of current theory and research in the philosophy of language.**Note:** Cross-listed PHIL 641.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

LING 690. Seminar in Linguistics**3 Units****Prerequisite(s):** Graduate standing.**Description:** Selected topics in applied or theoretical linguistics.**Note:** Cross-listed with ENGL 682.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Management (MGMT)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any

given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

MGMT 500. Introduction to Administrative and Organizational Behavior.**3 Units****Description:** Introduction to administrative and organizational behavior.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MGMT 601. The Business Environment**3 Units****Description:** Examines the interactions between organizations and their demographic, legal, technological, social, political, and ethical environments. The major object is to construct a conceptual framework suited to helping managers develop policies and programs that will bring their organizations into congruence with the societies they must serve. The environment of multinational business is also discussed.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MGMT 607. Advanced Business Statistics**3 Units****Prerequisite(s):** MGMT 501 and matrix algebra.**Description:** Four major statistical techniques, analysis of variance, linear regression, multiple regression, and forecasting, will be studied in detail, plus other special topics as time permits. Within each topic attention will be given to the model and its assumptions, the analysis, and applications to business problems. Packaged computer programs will be relied on to facilitate the analysis.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MGMT 615. Seminar in Quantitative Methods**3 Units****Prerequisite(s):** MGMT 501.**Description:** Mathematical modeling building for the quantitative analysis and optimization of business decisions. Advanced applications in the areas of inventory control, production scheduling, mathematical programming, simulation, and queuing theory and related topics. Not regularly offered.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MGMT 620. Human Resources Management 3 Units

Description: This course provides an opportunity for students to develop comprehensive understanding of personnel practices and policies. The main objective is to learn how to develop optimum personnel programs within the business organization. Actual cases are studied, giving the student a realistic understanding of the methods and techniques used in administering a sound personnel.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MGMT 630. Labor-Management Relations 3 Units

Description: A study of labor-management issues with emphasis on (1) the organizing stage, (2) problems in the shop, (3) problems at the bargaining table, (4) labor relations and public policy, and (5) an examination of labor relations overseas. These issues are examined through the intensive analysis of factual descriptions. Students are provided with the opportunity to participate in role playing, prepare arguments, and make decisions.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MGMT 640. Organizational Change and Development 3 Units

Prerequisite(s): MGMT 600 or MBA 610.

Description: Examination of theories and methods utilized to promote purposeful change in organizational systems and processes. Emphasis placed on organizational development for improving organizational effectiveness. Topics will include team building and survey feedback.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MGMT 650. Organizational Structure and Design 3 Units

Prerequisite(s): MGMT 600 or MBA 610.

Description: Examination of concepts concerning the structures and processes utilized by organizations in managing internal systems and environmental interactions. Topics include information systems, organizational design, and strategic planning as they impact organizational effectiveness.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MGMT 684. Managing Creativity and Innovation 3 Units

Description: A broad overview of innovation, and the managerial decisions that affect innovation performance. Places innovation in its social, economic, technological, and political context.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MGMT 687. New Venture Finance 3 Units

Prerequisite(s): MGMT 685 or IMBA 622.

Description: Organization and presentation of financing plans for new ventures; securing financial support.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MGMT 689. New Venture Implementation 6 Units

Prerequisite(s): Successful completion of all IMBA modules and enrollment.

Description: Current enrollment in Integrative Global Strategy and Lifelong Learning II. Exploration of topics necessary for the successful implementation of new venture opportunities upon completion of a new venture plan.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Managerial Analytics

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

ANLY 610. Database 1.5 Units

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): (MBA 631 or ANLY 631) or (MBA 602 and MBA 651).

Description: The course introduces issues, principles, and technologies used in managing organizational data. It covers concepts and skills for developing, accessing, and administering data related technologies with a strong focus in developing relational data models, relational databases, and formulating and executing complex queries. It also discusses the role of data management technologies and practices in an organizational setting and how such technologies and practices affect business strategy, business processes, and organizational structure. This course has a strong hands-on component. The course will make extensive use of a leading relational database management software and structured query language (SQL).

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ANLY 615. Artificial Intelligence 1.5 Units**Term Typically Offered:** Fall, Spring, Summer**Prerequisite(s):** ANLY 610.

Description: This course introduces the fundamental concepts, techniques, technologies, and practices of AI. Hands-on experiences in design and implementation are provided in meaningful business contexts. In addition you will be introduced to a leading data mining tool such as SAS Enterprise Miner. Homework is expected after each class session. Such work will build on the concepts and skills introduced in class. You will use a leading machine learning platform such as SAS Enterprise Miner to finish class work and assignments.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ANLY 620. Advanced Business Analytics 1.5 Units**Term Typically Offered:** Fall, Spring, Summer**Prerequisite(s):** (MBA 631 or ANLY 631) or (MBA 602 and MBA 651).

Description: The volume of data generated every day continues to grow exponentially. Being able to mine the available data for information is now a fundamental skill sought by organizations. This course challenges and teaches students how to use powerful statistical tools (e.g., SAS and SPSS) to handle data that comes in a variety of forms and sizes in more complex, less structured business situations. Students will participate in extensive hands-on work solving realistic business problems. This course may guide students with handling advanced regression analysis that deals with real-life models and interaction variables, time series analysis, and topics such as path modeling. After taking this course, students should: (1) Approach business problems data-analytically; (2) Think systematically whether and how data can help make better-informed decisions; (3) Be able to interact competently with business analytical tools; and (4) Have a hands-on experience mining data. A review of necessary statistical concepts will be provided as needed.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ANLY 625. Spreadsheet Modeling for Analytics 1.5 Units**Term Typically Offered:** Fall, Spring, Summer

Description: This course introduces decision-support modeling using spreadsheets, including what-if analytics, goal-seeking, one and two-way data tables, and tools to solve optimization problems. The course explores a library of functions to manipulate data, visual presentation of data, and data organization skills. Students in this course should have an understanding of cell referencing, file manipulation, importing/exporting data, and the basic time-value of money financial concepts. Students will demonstrate mastery of the material through hands-on projects and skills assessments. The primary tool used in the course is Microsoft Excel.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ANLY 630. Blockchain 1.5 Units**Term Typically Offered:** Fall, Spring, Summer**Prerequisite(s):** (MBA 631 or ANLY 631) or (MBA 602 and MBA 651).

Description: The purpose of this course is to explore Blockchain concepts and how to apply them in a wide range of real business scenarios and explore unique, challenge-based business scenarios using design-thinking methodology.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ANLY 631. Introduction to Statistics and Data Analytics 3 Units**Term Typically Offered:** Fall, Spring, Summer

Description: The course will cover the fundamental topics and subject matter related to statistics up through multiple regression modeling. A strong emphasis will be placed on how to use statistics. This will be accomplished through student analysis of real-world data sets in various assignments.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ANLY 635. Storytelling with Data 1.5 Units**Term Typically Offered:** Fall, Spring, Summer**Prerequisite(s):** (MBA 631 and ANLY 631) or (MBA 602 and MBA 651).

Description: This course is a data visualization and business presentations course specifically designed for professionals in the field of business analytics. Throughout the course, you will develop an ability to organize, visualize, and present data driven messages that are professional, clear, concise, and persuasive. You will enhance your ability to communicate with and about data in multiple business and professional contexts: Formal individual presentations, team-based presentations, and informal one-on-one and small group interactions. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Marketing (MKT)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

MKT 525. Distribution Management 3 Units

Description: Examines the flow of goods and related information from sources of supply to sources of demand with primary emphasis on inventory management, warehousing, transportation, customer service, and network configuration.

Note: This course does not fulfill credit for MBA.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MKT 527. Logistics Management **3 Units**

Prerequisite(s): MKT 525 and ACCT 526.

Description: Examines skills required for effective logistics management including leadership, contracts, and decision-making.

Note: This course does not fulfill credit for MBA.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MKT 610. Consumer Behavior **3 Units**

Prerequisite(s): MKT 600 or MBA 640.

Description: Information from the behavioral and quantitative sciences which relates to consumer behavior. Presents economic, psychological, communications, and cultural information, and research findings which attempt to describe the morphology and structure of consumer behavior.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MKT 612. Supply Chain Management **3 Units**

Prerequisite(s): MKT 600 or MBA 640.

Description: Examines the integration of business processes from end users to original suppliers. E-logistics and purchasing issues are discussed along with the integration of information and product/service flows that add value to customers.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MKT 620. Marketing Research **3 Units**

Prerequisite(s): MKT 600 or MBA 640.

Description: An application of qualitative and quantitative information relevant to marketing decisions in the organization. Topics include: research design, collection of primary and secondary data, using statistical packages, and employing scanner data and web based techniques for meeting marketing information needs.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MKT 630. Sales Management **3 Units**

Prerequisite(s): MKT 600 or MBA 640.

Description: A managerial decision approach involving sales planning, and sales operations in the contemporary context of rapid digital communication within the supply chain. Topics include territory management, sales forecasting, relationship building, motivation, recruitment, compensation, and ethical issues.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MKT 670. Global Marketing **3 Units**

Prerequisite(s): MKT 600 or MBA 640.

Description: A managerial approach that centers on the needs of contemporary organizations to identify, understand, and serve global markets. Topics include global research, cultural environments, global sourcing, world customers, pricing, competition, and the evolving political, legal, technological, and social environments of world trade.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MKT 680. Special Topics in Marketing **1-3 Units**

Prerequisite(s): MKT 600 or MBA 640.

Description: An advanced study of one or more selected topics or issues related to the study of Marketing.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MKT 698. Research Seminar in Marketing **1-3 Units**

Prerequisite(s): One 600-level Marketing course and permission of departmental chair.

Description: Graduate-level Marketing research seminars. Topics vary.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Master of Accountancy (MAC)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

MAC 600. Master of Accountancy **0 Units**

Description: Master of Accountancy

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MAC 610. Commercial Law for Professional Accountants **3 Units**

Prerequisite(s): Admittance to the Master of Science in Accountancy and Analytics program.

Description: Covers the legal environment of the professional accountant, including business organizations, government regulations and legal liability.

Note: Cross-listed with CLAW 610.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MAC 620. Advanced Audit and Assurance Services **3 Units**

Prerequisite(s): Admission to the Master of Accountancy program.

Description: Advanced study of the theory and practice of audit and assurance services, including case studies.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- MAC 622. Advanced Accounting Information Systems** 3 Units
Prerequisite(s): Admission to the Master of Accountancy program.
Description: Study of the design, implementation, documentation and audit of accounting information systems. Emphasis is placed on internal controls the design of audit trails.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MAC 624. Corporate Taxation** 1.5 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Admission to the Master of Accountancy program.
Description: The course studies the taxation of corporations, focusing on U.S. taxation. Research tools will be introduced in the course.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MAC 626. Advanced Corporate Financial Reporting** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Admission to the Master of Accountancy program.
Description: This course studies consolidation accounting and related issues for complex corporate organizations.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MAC 628. Professional Research Tools and Techniques** 3 Units
Prerequisite(s): Admission to the Master of Accountancy program.
Description: This course examines the use of professional research tools to resolve complex issues related to financial accounting and reporting, assurance services, and taxation. Students will gain practical experience using research tools widely used in practice by professional accountants.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MAC 630. Ethical Judgment and Decision Making** 1.5 Units
Prerequisite(s): Admission to the Master of Accountancy program.
Description: This course examines ethical judgment and decision making in the context of professional accounting practice. Ethical issues and techniques for dealing with those issues will be examined.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MAC 632. Leadership** 1.5 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Admission to the Master of Accountancy program.
Description: This course examines theories of leadership and the practice of leadership in professional accounting and business.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MAC 634. User Perspectives on Financial Reporting** 1.5 Units
Prerequisite(s): Admission to the Master of Accountancy program.
Description: This course examines financial statements from a user perspective, and the implications of that perspective on preparers and auditors.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MAC 636. Current Topics in Audit and Financial Reporting** 1.5 Units
Prerequisite(s): Admission to the Master of Accountancy program.
Description: This course studies current topics with implications for financial accounting and reporting, and auditing.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MAC 638. Data Analytics for Professional Accountants** 3 Units
Prerequisite(s): Admission to the Master of Accountancy program.
Description: This course examines data analytics of large and unstructured sources of data, and the implications of big data for auditors, preparers, and users of financial reports.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MAC 640. CPA Preparation and Review AUD** 1 Unit
Grading Basis: Pass/Fail
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Admission to the Master of Accountancy program.
Description: This course used the Becker CPA Review course to prepare for the Audit section of the CPA exam.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MAC 642. CPA Exam Preparation REG** 1 Unit
Grading Basis: Pass/Fail
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Admission to the Master of Accountancy program.
Description: This course uses the Becker CPA Review course to prepare for the Regulation section of the CPA exam.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MAC 644. CPA Exam Preparation BEC** 1 Unit
Grading Basis: Pass/Fail
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Admission to the Master of Accountancy program.
Description: This course uses the Becker CPA Review course to prepare for the Business Environment and Concepts section of the CPA exam.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MAC 646. CPA Preparation and Review FAR** 1 Unit
Grading Basis: Pass/Fail
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Admission to the Masters of Accountancy program.
Description: This course uses the Becker CPA Review course to prepare for the Financial Accounting and Reporting section of the CPA exam.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- MAC 648. Statistics for Auditors** 1.5 Units
Prerequisite(s): Admission to the Master of Accountancy program.
Description: Data organization and presentation, descriptive statistics, common probability distributions and sampling distributions, regression and inferential statistics, such as confidence intervals and tests of significance.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MAC 650. White Collar Crime** 3 Units
Prerequisite(s): Admission to the Master of Accountancy program.
Description: This course focuses on the concept, theoretical explanations, the extent and nature of various types of white collar and occupational crime in both public and private sectors.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MAC 660. Financial Statement Analysis** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Admission to the Master of Accountancy program.
Description: This course studies the use of financial information (primarily from financial statements) in understanding a business entity and developing expectations of future performance. Techniques of business valuation are studied.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MAC 662. Data Analysis with Excel** 1.5 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Admission to the Master of Accountancy program.
Description: This course introduces data analytics with a focus of utilizing Excel software.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MAC 664. Advanced Business Analytics** 1.5 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Admission to the Master of Accountancy program.
Description: This course builds on the introduction to Business Analytics course by introducing more advanced topics in analytics. This course challenges and teaches students how to use powerful statistical tools (e.g., SmartPLS, SAS, and SPSS) to handle data that come in a variety of forms, sizes in more complex, less structured business situations.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MAC 668. Statistical Analysis** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Admission to the Master of Accountancy program.
Description: Introduces advanced statistical analysis tools and techniques.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MAC 670. Managerial Communication** 1.5 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Admission to the Master of Accountancy program.
Description: Study of tools and techniques for all forms of communication used in business and the accounting profession.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MAC 672. Design Thinking** 1.5 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Admission to the Master of Accountancy program.
Description: This course will study the fundamentals of design thinking. Finding solutions to "wicked" problems will be studied, as will repeatable processes for innovation and creative alternatives to traditional brainstorming.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MAC 674. Storytelling With Data** 1.5 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Admission to the Master of Accountancy program.
Description: This course is a data visualization and business presentations course specifically designed for professionals in accountancy. Student develop the ability to organize, visualize, and present data-driven messages that are professional, clear, concise, and persuasive.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MAC 676. Global Learning** 1.5 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Admission to the Master of Accountancy program.
Description: This course involves the study of international business, international trade, and global cultures. Students self-select between participating in an international trip or studying course topics in an online, non-travel format.
Note: Cross-listed with MBA 623.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MAC 678. Cybersecurity Tools and Solutions** 1.5 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Admission to the Master of Accountancy program.
Description: This course introduces tools and solutions used in protecting organizations and systems from the growing threats from cybercrime.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MAC 680. Capstone Project I** 1.5 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Admission to the Master of Accountancy program.
Description: The first of two courses designed to provide a team-based experience in identifying, planning, initiating and completing a significant project within a business entity.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MAC 682. Capstone Project II 1.5 Units

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): Admission to the Master of Accountancy program.

Description: The second of two courses designed to provide a team-based experience in identifying, planning, initiating and completing a significant project within a business entity.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MAC 696. Internship in Accounting 1-3 Units

Term Typically Offered: Fall, Spring, Summer

Description: The experience will provide the student the opportunity to work with a selected organization. The student will apply expertise learned in the MAC Core courses to a significant research problem or project. The student will write a synopsis of the work experience detailing the application of knowledge to the project and the outcomes achieved.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MAC 699. MAC Internship 3 Units

Prerequisite(s): Must be enrolled in the Master of Accountancy program; approval of the Director of the School of Accountancy.

Description: The experience will provide the student the opportunity to work with a selected organization in an accounting function. The student will apply expertise learned in the MAC program and their undergraduate program to assigned duties. The student will write a synopsis of the work experience detailing the application of knowledge to the assignment and the outcomes achieved.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Master of Business Administration (MBA)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

MBA 600. MBA Program 0 Units

Description: MBA Program

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MBA 601. Strategic Analysis 1.5 Units

Description: Strategic analysis consists of analyzing information from the internal and external environments to recognize and assess organizational strengths, weaknesses, opportunities & threats.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MBA 602. Decision Analysis 1.5 Units

Description: Data organization and presentation, descriptive statistics, common probability distributions and sampling distributions, regression and inferential statistics, such as confidence intervals and test of significance.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MBA 603. Organizational Behavior 1.5 Units

Description: Concepts and techniques of individual and groups including personality, motivation, power and politics, decision-making, group dynamics, job satisfaction, cultural influences and organizational development.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MBA 604. Economics I 1.5 Units

Description: Application of supply and demand, elasticity, costs to the goals of the firm. Emphasis is on economies of scale, asymmetric information and marginal analysis.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MBA 605. Managerial Economics 3 Units

Prerequisite(s): ECON 500 (or ECON 201 and 202); ACCT 500 (or ACCT 201); FIN 500 (or FIN 301); MGMT 201.

Description: This course will apply economic concepts to decisions affecting a firm's profit. Topics may include supply and demand, elasticity and market power, competition, pricing strategies, boundaries of the firm, economics of scale and scope, make versus buy decisions, transaction costs, information, game theory, entry and exit strategies, and competitive analysis.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MBA 606. Leadership 1.5 Units

Description: Theories of influence, leader behaviors, situation, followership, work teams and transformational leadership. Practical development of self-knowledge, self-confidence and choosing to lead.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

<p>MBA 607. Economics II 1.5 Units Description: Examines the influence of market structure, pricing, dynamic pricing strategy, strategic commitment and firm entry and exit on organizational profits. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MBA 614. Operations Management 1.5 Units Description: Application of operations strategies and decisions, including process selection, capacity planning, lead time management and process improvement. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MBA 608. Technology Management 1.5 Units Description: Emphasis on technology management as a tool for innovation, exploration and application of the relationships among business strategy, business processes and technology of adoption and use. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MBA 615. Business Valuation & Analysis 3 Units Prerequisite(s): ECON 500 (or ECON 201 and 202); ACCT 500 (or ACCT 201); FIN 500 (or FIN 301); MGMT 201. Description: The course will familiarize students with financial statements to assist in evaluating past, current, and future firm performance. Topics may include financial statement and ratio analysis, articulation of financial statements on a pro forma basis, and alternative firm valuation models. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MBA 609. Financial Accounting 1.5 Units Description: Fundamental principles of accounting needed by the manager. Topics include the assumptions of accounting, recording and reporting transactions and interpretation of data for decision-making purposes. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MBA 616. Finance II 1.5 Units Description: Examines the capital investment decision-making process, cost of capital, financing (capital structure) decisions and related topics. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MBA 610. Organizational Behavior & Human Resource Management 3 Units Prerequisite(s): ECON 500 (or ECON 201 and 202); ACCT 500 (or ACCT 201); FIN 500 (or FIN 301); MGMT 201. Description: The learning objective is to understand intra-organizational concepts that influence individual behavior and human resource management. Topics may include motivation, job satisfaction, agency theory, decision-making, group dynamics, recruitment strategies, compensation training, and performance evaluation. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MBA 617. Marketing I 1.5 Units Description: Introduction to, and application of, the fundamentals of marketing management. Topics include consumer and business decision-making, segmentation, positioning and pricing decisions. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MBA 611. Managerial Accounting I 1.5 Units Description: The use of accounting information to support managerial decision-making and business planning. Topics include cost-volume-profit analysis, budgeting and direct costing versus absorption costing. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MBA 618. Finance III 1.5 Units Description: Examines working capital management, financing with derivatives, risk management, complex financial decision-making and other topics. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MBA 612. Finance I 1.5 Units Description: Introduction to financial concepts. Topics include the time value of money, analysis of risk and return, valuation of stocks and bonds and related concepts. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MBA 619. Marketing II 1.5 Units Description: Introduction to, and application of, the fundamentals of supply chain management. Topics include inventory management, transportation, customer service, warehousing, network design and integrated analysis. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MBA 613. Managerial Accounting II 1.5 Units Description: The use of accounting information in business planning, performance evaluation, integrating activity-based costing and the theory of constraints to guide business decisions. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MBA 620. Global Economics 3 Units Prerequisite(s): MBA 605 and MBA 610. Description: The course objective is to familiarize students with the macroeconomic foundations of the global economy. Topics may include monetary and fiscal policy in an open economy, output determination, trade flows, exchange rates, technology transfer, immigration, emerging markets, and trade blocs. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>

- MBA 621. Global Business** 1.5 Units
Description: Foundations of the global economy, current trends in the global business environment and issues facing international organizations.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MBA 622. Project Management** 1.5 Units
Description: Project management methodologies and utilization from a business management perspective. Relevant knowledge and skills including project initiation, planning, execution, reporting, controls and termination.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MBA 623. Global Learning** 1.5 Units
Prerequisite(s): Admission to the Master of Business Administration program.
Description: This course involves the study of international business, international trade, and global cultures. Students self-select between participating in an international trip or studying course topics in an online, non-travel format.
Note: Cross-listed with MAC 676.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MBA 624. Strategic Management** 1.5 Units
Description: Strategic management consists of top management decision-making regarding business, corporate & international strategies, as well as issues influencing the implementation of those strategies.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MBA 625. Managerial Accounting** 3 Units
Description: The course is devoted to structuring accounting information for use by managers in making decisions. Topics may include cost-volume-profit analysis, product costing, capital budgeting, activity-based costing, theory of constraints, balanced scorecard, and economic value added.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MBA 626. Applied Microeconomics for Business** 3 Units
Description: This course will apply economic concepts to decisions affecting a firm's profit. Topics may include topics such as supply and demand, elasticity and market power, competition, pricing strategies, boundaries of the firm, economies of scale and scope, make versus buy decisions, transaction costs, information asymmetry, entry and exit strategies, and competitive analysis.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MBA 628. Financial Accounting** 3 Units
Description: Accounting is the language of business. This course studies how firms collect important information & report it to outside parties (investors & creditors, primarily). Another course in the MBA program studies the collection/reporting of information within a firm, this course will examine the process of collecting/recording/summarizing data about the effects of transactions and events on the firm. The primary objective of this class is to develop the ability to read, understand, and (most importantly) interpret financial statements & related materials. If you have prior accounting experience, either through education or work, keep in mind this course is intended a range of MBA students, including those with no prior exposure to accounting.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MBA 630. Operations: Design and Analysis** 3 Units
Description: The course introduces standard terminology, basic models, and new concepts of operations management as applied to manufacturing and service firms. Topics may include systems planning, product quality and process capability, capacity planning, facility location and layout, material management, scheduling and process improvement.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MBA 631. Introduction to Statistics and Data Analytics** 3 Units
Description: This course will cover the fundamental topics and subject matter related to statistics up through multiple regression modeling. A strong emphasis will be placed on how to use statistics. This will be accomplished through student analysis of real world data sets during class periods and in the homework assignment.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MBA 632. Strategic Managerial Communication** 3 Units
Description: This course combines theoretical and application-based approaches to equip executive and management professionals with communicative competencies and skills needed to succeed in business. The course focuses on the intellectual tools needed to assume leadership positions and effectively communicate and influence others in professional contexts. Students will build upon proven competencies and constituent frameworks to improve their written and oral communication. Students will also develop an advanced understanding of instrumental, relational, and identity goals in communicative situations to enhance their message around diverse receivers and conditions.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MBA 635. Contemporary Financial Management** 3 Units
Description: The Contemporary Financial Management course will examine tools and concepts in financial management, focusing on the concerns and methods of analysis employed by corporate financial managers. Topics include time value of money mathematics, net present value (NPV) and internal rate of return (IRR); basic stock and bond valuation; capital budgeting decisions and project evaluation; the principals of risk and return; the use of asset pricing models to estimate the cost of capital; and the determination of a firm's weighted average cost of capital (WACC).
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

<p>MBA 640. Marketing Management 3 Units Description: This will cover the fundamental topic and subject matter related to marketing management. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MBA 648. Managerial Communications II 0.5 Units Prerequisite(s): Admission to MBA program. Description: Course objective to improve the quality/effectiveness/efficiency of managerial communication abilities. Using interactive exercises in addition to lecture, course will cover oral and written skills essential for managers/leadership team members in communicating with a hostile group, leading meetings/groups, listening, serving/contributing in a team-oriented atmosphere, etc. In-class exercises will be evaluated with feedback provided by instructor and classmates. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MBA 641. Professional Development Module-Team Building 0.5 Units Prerequisite(s): Enrollment in Professional MBA program. Description: Various professional development topics such as Communications, Negotiation & Conflict Resolution, Creativity, Team-Building, Governance, Planning and Introduction to Regional Industries. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MBA 649. Professional Development Module-Inclusive Leadership 0.5 Units Term Typically Offered: Fall, Spring, Summer Prerequisite(s): Admission into the MBA program. Description: Upon completion of the course, students should possess a greater understanding of the connection between leadership/workforce inclusiveness in the business environment. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MBA 642. Communications 0.5 Units Prerequisite(s): Admission to MBA program. Description: Course objective to improve the quality/effectiveness/efficiency of managerial communication (verbal/written/listening) skills. Identify and address many barriers/challenges encountered in organizational settings; explore theoretical and practical solutions. In-class exercises will be evaluated with feedback provided by instructor and classmates. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MBA 650. Global Business 3 Units Prerequisite(s): MBA 635 and MBA 640. Description: The course will familiarize students with international finance and global business environment. Topics may include international financial markets, multinational corporations, overseas expansion, organization of international business, global management, marketing, and R&D, and the economic, political, and moral issues associated with globalization. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MBA 643. Professional Development Module III 0.5 Units Prerequisite(s): Enrollment in MBA program. Description: Various professional development topics such as communications, negotiation & conflict resolution, creativity, team-building, governance, planning and introduction to regional industries. Note: May be repeated for credit. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MBA 651. Introduction to Business Analytics 1.5 Units Term Typically Offered: Fall, Spring, Summer Prerequisite(s): Admission to MBA degree program and MBA 602. Description: Much of this data are usually meaningless until they are analyzed for trends, patterns, relationships, and other useful information. Organizations are increasingly interested in employees that have the knowledge, skill, and experience in systematically analyzing a wide-variety of data using advanced statistical tools to improve decision-making. This course provides a hands-on learning experience using powerful statistical tools that can be leveraged to work with structured data and generate business knowledge. A review of necessary statistical concepts will be provided as needed. Extensive use of a leading statistical tool such as SAS and SPSS is expected. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MBA 644. Professional Development Module-Business Etiquette 0.5 Units For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MBA 655. Strategic Management 3 Units Description: The MBA capstone course is broad in scope and integrative of all required courses. The focus is on the strategic analysis, formulation, and implementation issues facing top management. Topics may include competition, core competencies, gaining and sustaining a competitive advantage at the business, corporate, and international levels, and corporate governance, structure, and entrepreneurship. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MBA 645. Leadership & Ethics 3 Units Prerequisite(s): MBA 620, MBA 625, and MBA 630. Description: Theory and application of leadership and ethical issues including leadership as influence process, followership, developing effective leader behaviors, stewardship affirming ethical organizational culture. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MBA 646. The Economics of Health and Medical Care 3 Units Prerequisite(s): MBA 635, MBA 640, and MBA 645. Description: Applied economics in the health service sector and service delivery models of managed care systems. Evaluate models of care and service, considering efficiency, insurance, incentives, quality, and supply and demand. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>

- MBA 656. Leadership and Organizational Behavior** 3 Units
Description: Organizations and individuals are filled with potential that they never achieve. In this course you will develop knowledge and skills for managing and for leading that will help you begin to unleash that potential, and will give the tools to continue learning how to unleash this potential after the course is over. For managing, I will cover topics such as organizational design, team design, job design, reward systems, hiring, firing, and employee assessment and development. For leading, I will cover topics such as organizational entropy, organizational culture, transformation, moral insight, ambitious virtues, purpose, integrity, empathy, learning, inspiration, and change.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MBA 660. Executive Effectiveness and Influence** 3 Units
Prerequisite(s): MBA 635 and MBA 640.
Description: Provides an experiential approach to leadership effectiveness. Discussions focus on classical and contemporary readings. Special emphasis is placed upon communication skills, self-knowledge, critical and creative thinking, and ethical issues in leadership.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MBA 661. Developing Entrepreneurial Competency** 3 Units
Prerequisite(s): MBA 635, MBA 640, and MBA 645.
Description: Skills building approach to improving effectiveness in making discoveries that maximize one's profit and minimize risk. Discussions focus on a variety of classic and contemporary readings. Experimental activities build self-knowledge and development of information processing and decision-making skills
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MBA 662. Consulting to Entrepreneurial Organizations** 3 Units
Prerequisite(s): MBA 635, MBA 640, and MBA 645.
Description: Assist an existing small to medium sized enterprise in addressing some key business needs or problems with a focus upon growth opportunities.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MBA 663. Introduction to the Business of Healthcare Systems** 3 Units
Prerequisite(s): MBA 635, MBA 640, and MBA 645.
Description: Examines topics from various business areas. Possible topics include cost-benefit analysis, managed care issues, information systems and medical informatics; cost concepts and decision making; product costing and accounting systems; operations management-TQM; and healthcare marketing.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MBA 664. Healthcare Policy** 3 Units
Prerequisite(s): MBA 635, MBA 640, and MBA 645.
Description: Elucidates theories of public policy and applies them to health issues. The course covers the evolution of healthcare and discusses policy options. Major issues of health delivery and finance are also covered within this context.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MBA 665. The Free Enterprise System: Ethics, Governance, and Regulation** 3 Units
Prerequisite(s): MBA 635, MBA 640, and MBA 645.
Description: An examination of the checks and balances and interaction between corporate shareholders, boards of directors, the CEO, investment bankers, federal and state regulators, and the political and judicial system.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MBA 667. Healthcare Law** 3 Units
Prerequisite(s): MBA 635, MBA 640, and MBA 645.
Description: Covers the legal aspects of healthcare. This includes the structure of the judicial system, legal procedures, torts, criminal aspects, contracts and corporate liability. Other legal aspects include malpractice, patient rights and the nature of the nursing profession.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MBA 668. Information Technology Management in a Digital Economy** 3 Units
Description: Provides students with an understanding of the effects of the digital environment on business models and how firms have to adapt to be competitive in a digital economy. Focuses on the management of technology in such an environment, with emphasis on management activities (e.g., planning, organizing, coordinating, assimilating new technologies, evaluating information technology investments, etc.) that will enable firms to make the most effective use of their information technology resources.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MBA 670. Capstone Project I** 1.5 Units
Description: The first of two courses designed to provide a team-based experience in identifying , planning, initiating and completing a significant project within a business entity.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MBA 671. Capstone Project II** 1.5 Units
Description: The second of two courses designed to provide a team-based experience in identifying, planning, initiating and completing a significant project within a business entity.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

<p>MBA 675. Operations Management 3 Units Term Typically Offered: Fall, Spring, Summer Description: This course will cover the fundamental topics and subject matter related to marketing management. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MBA 690. MBA Fundamentals 3 Units Grading Basis: Pass/Fail Term Typically Offered: Summer Only Prerequisite(s): Admission to the College of Business (Global) MBA degree program. Description: Course is designed to introduce students to the fundamentals of business in the areas of team building, marketing, finance and quantitative methods. Course will utilize a combination of various student engagement activities including lectures, group discussions, active team-building challenges, completion of online refresher modules, and pre-course assignments. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MBA 676. Managerial Finance 3 Units Term Typically Offered: Fall, Spring, Summer Prerequisite(s): Appropriate standing in the MBA program. Description: This course examines tools and concepts in financial management, focusing on the concerns and methods of analysis employed by corporate financial managers. Topics include time value of money mathematics, net present value (NPV) and internal rate of return (IRR); basic stock and bond valuation; capital budgeting decisions and project evaluation; the principals of risk and return; the use of asset pricing models to estimate the cost of capital; and the determination of a firm's weighted average cost of capital (WACC). For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MBA 695. PDM-Crisis Management 0.25-0.5 Units Prerequisite(s): Must be enrolled in MBA degree program. Description: A crisis can strike organizations at any time. Whether the organization is crippled or is able to bounce back depends heavily on how well the crisis is managed. This course will expose students to the basics of crisis management: crisis planning, stakeholder analysis, and crisis response strategies. Course will feature a range of crisis activities including team and individual tasks. Note: Range of activities will vary depending on classroom contact hours.</p>
<p>MBA 677. Marketing and Distribution Management 3 Units Term Typically Offered: Fall, Spring, Summer Prerequisite(s): Acceptance into the Global MBA program. Description: This course will cover the fundamental topics and subject matter related to marketing management. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>Note: The whole-day session (7 classroom hours) will be valued at 1/2 credit; the one-half-day session (3 1/2 classroom hours) will be valued at 1/4 credit.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MBA 678. International Market Development 3 Units Term Typically Offered: Fall, Spring, Summer Prerequisite(s): Appropriate standing in MBA program. Description: The course objective is to familiarize students with the key aspects and challenges of the global business environment. The course will review the main principles of international trade and investment; discuss the impact of global competition on the US economy and business. Students will be encouraged to conduct independent analyses of global markets, focusing on opportunities for US-based firms. Each student will have to complete a currency speculation/hedging project. If time allows, guest speakers with relevant experience in global trade and investment will be invited to talk to the class. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MBA 696. PDM-Negotiation 0.25-0.5 Units Prerequisite(s): Must be enrolled in MBA degree program. Description: The purpose of this PDM course is to learn about Negotiations and how to become effective negotiators. It focuses on both concepts and skills, alternating between class discussions and increasingly complex negotiation exercises. Note: Range of activities will vary depending on classroom contact hours.</p>
<p>MBA 680. Special Topics in Business 1-6 Units Prerequisite(s): MBA 635, MBA 640, and MBA 645. Description: An advanced study of one or more selected topics or issues related to the study of business. Topics or issues could be from a single business discipline such as management or from a combination of business disciplines, such as accountancy and finance. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>Note: The whole-day session (7 classroom hours) will be valued at 1/2 credit; the one-half-day session (3 1/2 classroom hours) will be valued at 1/4 credit.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
	<p>MBA 698. Independent Study 0.5-3 Units Prerequisite(s): MBA 645. Description: An advanced independent study of one or more related topics or issues related to the study of business. Topics or issues could be from a single business discipline such as management or from a combination of business disciplines, such as accountancy and finance. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>

MBA 699. MBA Internship**1-6 Units****Prerequisite(s):** 24 credit hours at the 600 level or above; approval of MBA Director or Dean, College of Business.**Description:** The experience will provide the student the opportunity to work with a selected organization. The student will apply expertise learned in the MBA Core courses to a significant research problem or project. The student will write a synopsis of the work experience detailing the application of knowledge to the project and the outcomes achieved.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Master of Engineering Residency (MENG)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

MENG 600. Master of Engineering Residency**0 Units****Grading Basis:** Credit/No Credit

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Master's Candidacy (MAST)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

MAST 600. Master's Degree Candidacy**0 Units****Grading Basis:** Pass/Fail**Prerequisite(s):** Completion of all course work, qualifying exams, required research credit hours and other co-curricular requirements.**Description:** Students who are enrolled in degree candidacy are considered full-time students. While in Degree Candidacy, it is the responsibility of both student and mentor to maintain contact to ensure continuous progress towards the completion of the degree.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Materials and Energy Science and Engineering

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

MESE 600. Energy Science and Engineering**3 Units****Term Typically Offered:** Fall, Spring**Description:** This course presents an overview of global challenges associated with energy/environment nexus, energy demand, generation and storage. In particular, the course will cover fundamentals of thermodynamics, physics, chemistry and kinetics as applied to various energy technologies. The topics will include thermodynamic efficiency, state of the art, challenges associated with size and for each of the energy systems and their impact on environment and sustainability. Topics on energy conversion will include all renewable forms of electricity and fuel generation, their storage and transportation. Topics will also include advanced fossil fuel R&D, carbon dioxide capture and utilization and renewable fuels.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- MESE 601. Materials Science and Engineering** 3 Units
Term Typically Offered: Fall, Spring
Description: Provides a background in materials for students coming from various majors in engineering and science. The course will review fundamental crystal structures, structure, bonding relations and defects in crystals. Thermodynamics of solids, phase diagrams, structure-property relationships, microstructure control, lattice dynamics and fundamental electrical, magnetic and optical properties.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MESE 603. Fundamentals of electrical, optical and thermal properties of solid materials** 3 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): MESE 601 or Permission by Instructor
Prerequisites or corequisites: MESE 600
This course is intended to introduce the fundamentals of electrical, optical and thermal properties of materials along with relevant characterization methods.
Description: Students will gain a comprehensive understanding of key concepts, including semiconductor fundamentals (band structure, work function, Fermi energy, effective mass, etc.), semiconductor statistics, doping (carrier concentrations, Fermi-Dirac distribution, and equilibrium properties), transport phenomena (drift, diffusion, ambipolar effects, and hot electron phenomena), carrier dynamics (recombination and generation processes, lifetime, and mobility), thermal properties (heat capacity, thermal conductivity), and optical properties (absorption and emission, reflection, refraction). The course also includes selected other important topics such as magnetic properties, superconductivity, ion-conductivity, and semiconductor devices. Additionally, students will be introduced to computational techniques and predictions in materials science.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MESE 610. Materials Characterization: Microscopy & Diffraction** 3 Units
Term Typically Offered: Summer Only
Prerequisite(s): MESE 601.
Description: This course provides graduate students fundamental understanding of some of the most important material's characterization techniques. Special focus is placed on fundamental aspects and practical applications of electron microscopy and diffraction methods to phase identification and structure determination for crystalline material. Following this course, students will (1) learn and understand fundamental concepts of materials structure, with the emphasis on crystals structure, (2) understand fundamentals of electron microscopy and diffraction techniques, and (3) apply theoretical methods and software tools to analyze and interpret various types of microscopic and diffraction data.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MESE 612. Photovoltaics and Solar Fuels** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): MESE 600, MESE 601.
Description: This course develops the fundamentals of semiconductor physics specific to solar energy and uses these key concepts to understand solar cell behavior. The various photovoltaic technologies, including both commercial and research-stage approaches, are described in detail. In addition, electrochemical and catalysis concepts are introduced and integrated with semiconductor behavior to understand the myriad criteria necessary to leverage solar energy in electrochemical fuel production processes such as water-splitting via artificial photosynthesis.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MESE 614. Biomass Processing and Biofuels** 3 Units
Prerequisite(s): MESE 600 or permission of instructor.
Description: Manufacturing of bio-based products (materials, chemicals and energy produced using sustainable resources such as agricultural biomass) offers socio-economic and environmental benefits. In order to be a part of this emerging bioeconomy, it is essential to learn the fundamental skills of managing biorenewable resources for the effective development of the rapidly evolving bioenergy and biofuels industries. This multi-disciplinary course for senior level undergraduates and all graduate students integrates the biorenewable knowledge base of academic disciplines that include agriculture, chemistry, engineering, environmental sciences, and economics to provide a student with a broader perspective on biomass conversion to bioproducts.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MESE 616. Energy Storage Systems** 3 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): ME 440.
Description: This course will cover functional knowledge of various energy storage modes with emphasis on electrochemical energy storage. It will introduce the fundamental principles of different energy storage systems such as mechanical energy storage, thermal energy storage, chemical energy storage, and electrochemical energy storage. The practical applications for each energy storage system will be discussed. This course will also focus on the chemistry and materials science behind these energy storage systems. In addition, the basis performance analysis of different types of batteries will be introduced and compared.
Note: Cross-listed with ME 572.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MESE 619. Industrial Catalysis** 3 Units
Term Typically Offered: Fall, Spring
Description: This course will teach scientific and technological concepts involved with industrial catalysis in many chemical processing applications. In addition to catalytic reaction mechanisms, the course will also teach industrial catalyst production methods and testing.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MESE 622. Roll to Roll Processing 3 Units**Term Typically Offered:** Fall Only

Description: Continuous manufacturing through roll-to-roll processes has been a staple within several industries over the past century including film, newspaper and other traditional low cost high volume products. As the renewable industry begins to scale, roll-to-roll processes can play an extremely important role in reducing costs at high volumes. This course will explore the roll-to-roll manufacturing processes through fundamental engineering principals including economics, heat and mass transfer, thermodynamics and materials. The course will consider the manufacturing of solar modules, batteries and fuel cell membranes. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MESE 640. Entrepreneurship in Renewable Energy 3 Units**Term Typically Offered:** Fall Only**Prerequisite(s):** MESE 600; MESE 618; or ECE 531.

Description: The renewables market will continue to grow as the world seeks and finds cleaner and more sustainable techniques to produce energy. This product-based course guides student teams through the ideation to prototype development to test the commercial relevance of renewable energy products. At the end of the course each student team will have developed a prototype design supported by a business plan. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MESE 642. Techno-Economic Analysis and Energy Policy 3 Units**Term Typically Offered:** Fall Only**Prerequisite(s):** MESE 600 or instructor approval.

Description: While many novel scientific ideas are being explored for renewable energy generation and energy storage, a successful technology will require more than a proof-of-concept and an efficient prototype. This course will introduce methods for conducting a techno-economic analysis on an energy technology, determining the levelized cost of product over the facility lifetime, and modeling a sensitivity analysis to determine key performance metrics required to reach possible profitability. The development and current status of energy policies will be addressed as well and incorporated to inform ideal markets for a prospective energy technology. Student teams will conduct their own project analysis as the core component of their grade for the course. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MESE 644. Smart Manufacturing 3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** MESE 600, MESE 601.

Description: Smart Manufacturing are systems that are "fully-integrated, collaborative manufacturing systems that respond in real time to meet changing demands and conditions in the factory, in the supply network, and in customer needs" (NIST). This directed reading and project-based course will address the key principles of Smart manufacturing with an emphasis on Energy efficiency, sustainability, and advanced sensors and control systems.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MESE 690. Master's Project 3 Units**Term Typically Offered:** Fall, Spring, Summer**Prerequisite(s):** MESE 600, MESE 601.

Description: Students enrolled in this course will engage in an engineering project or research activity and produce a report that demonstrates both mastery of the subject matter and a high level of communication skills. Oral presentation of the report is required. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Mathematics (MATH)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

MATH 501. Introduction to Analysis I - CUE 3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** MATH 301, MATH 311 and MATH 325.

Description: Foundations of the real number system, sequences and series, topology of the line, continuity, differentiation of functions of one variable.

Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MATH 502. Introduction to Analysis II 3 Units**Term Typically Offered:** Spring Only**Prerequisite(s):** MATH 501.

Description: Riemann integration on the line, sequences and series of functions, uniform convergence, metric spaces.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

<p>MATH 505. Introduction to Partial Differential Equations 3 Units Term Typically Offered: Fall, Summer Prerequisite(s): MATH 301 and MATH 405 or PHYS 350. Description: Techniques for solving standard heat, wave, and potential equations, including discussion of Fourier analysis techniques. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MATH 522. Modern Algebra II 3 Units Term Typically Offered: Spring Only Prerequisite(s): MATH 521. Description: Continuation in greater depth of topics introduced in MATH 521; introduction to theory of ideals, field extensions, and abstract vector spaces. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MATH 507. Fourier Analysis 3 Units Term Typically Offered: Spring Only Prerequisite(s): MATH 301 and MATH 405. Description: Introduction to Fourier series and transforms. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MATH 535. Modeling I 3 Units Prerequisite(s): MATH 325 or MATH 405 or equivalent. Description: Introduction to mathematical modeling of discrete and continuous dynamical systems. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MATH 511. Complex Analysis I 3 Units Term Typically Offered: Occasionally Offered Prerequisite(s): MATH 301 or ENGR 201; MATH 311; MATH 325 or ENGR 330. Description: Geometry of the complex plane, analytic and meromorphic functions, linear fractional transformations. Cauchy's Theorem and the Residue Theorem. Emphasizes computational aspects of the course topics. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MATH 536. Modeling II 3 Units Prerequisite(s): MATH 535. Description: Advanced mathematical modeling of discrete and continuous dynamical systems. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MATH 512. Complex Analysis II 3 Units Prerequisite(s): MATH 511. Description: A continuation of MATH 511, including deeper properties of analytic, meromorphic, harmonic functions and conformal mappings. Emphasizes theoretical aspects of the course topics. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MATH 545. Introduction to Fractal Geometry 3 Units Prerequisite(s): MATH 301 and MATH 325; MATH 501 recommended. Description: Recursively defined sets and self-similarity; metric spaces and iterated function systems; topological, fractal, and Hausdorff dimensions. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MATH 520. Theory of Numbers 3 Units Prerequisite(s): MATH 206 or ENGR 102; MATH 311; MATH 325 or consent of instructor. Description: A study of the integers and their divisibility properties. Particular emphasis on the theory of congruencies, partitions, prime numbers, Diophantine analysis and quadratic residues. Note: Credit may be applied towards the MAT but not toward any other graduate degree in mathematics.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MATH 550. Advanced Euclidean Geometry 3 Units Term Typically Offered: Occasionally Offered Prerequisite(s): A year of high school geometry; MATH 206 or ENGR 102; MATH 311; MATH 325 or consent of instructor. Description: Theory of Euclidean geometry contrasted with non-Euclidean from both the axiomatic and algebraic approach. Of special value to secondary teachers. Note: Credit may be applied toward the MAT but not toward any other graduate degree in mathematics.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MATH 521. Modern Algebra I - CUE 3 Units Term Typically Offered: Fall, Spring Prerequisite(s): MATH 206 or ENGR 102; and MATH 311; and MATH 325; or consent of instructor. Description: An introduction to the theory of groups, rings, integral domains, and fields. Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MATH 551. Geometry 3 Units Term Typically Offered: Spring Only Prerequisite(s): MATH 206 or ENGR 102; MATH 311; MATH 325 or consent of instructor. Description: Study of projective spaces, transformations and invariants. Introduction to related geometries, such as affine, elliptic, and hyperbolic. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>

<p>MATH 561. Probability Term Typically Offered: Fall, Spring Prerequisite(s): MATH 301. Description: Probability spaces, probability distributions, moments, moment-generating functions, independence, transformation of variables, sampling distributions, laws of large numbers, central limit theorem, applications. Note: Credit will not be granted for both MATH 561 and IE 360.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>	<p>MATH 573. Actuarial Models I Term Typically Offered: Occasionally Offered Prerequisite(s): MATH 570; MATH 372 or MATH 572. Description: This course covers the material for the Society of Actuaries Exam MFE, Actuarial Models-Financial Economics (also CAS Exam 3F). The syllabus for Exam MFE develops the student's knowledge of the theoretical basis of financial models and the application of those models to insurance and other financial risks. A thorough knowledge of calculus, probability and interest theory is assumed. In addition, for Exam MFE/3F, students are assumed to be familiar with derivative securities (introductory material). Note: Knowledge of risk management at the level of MATH 570 is assumed.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>
<p>MATH 562. Mathematical Statistics Prerequisite(s): MATH 561. Description: Random samples and statistics, point estimation, sufficiency and completeness, confidence regions, classical theory of hypothesis testing, linear regression, nonclassical procedures. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>	<p>MATH 574. Actuarial Models II Prerequisite(s): MATH 573. Description: It further develops knowledge of the theoretical basis of actuarial models and the application of those models to insurance and other financial risks. Note: Continuation of MATH 573.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>
<p>MATH 564. Probability Models Prerequisite(s): MATH 561. Description: Finite probability models, Markov chains, renewal and reliability theory, Brownian motion, stochastic differential equations. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>	<p>MATH 581. Introduction to Graph Theory Term Typically Offered: Fall Only Prerequisite(s): MATH 206 or ENGR 102; MATH 311; MATH 325 or consent of instructor. Description: Provides an overview of graph theory. Topics include blocks, trees, connectivity, Hamiltonian and Eulerian graphs; topological problems, matrices and groups. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>
<p>MATH 568. Mathematical Models in Molecular Biology Prerequisite(s): MATH 205 or instructor consent. Description: Introduction to probability models for representations of biochemical networks. Markov Processes. Stochastic simulation. Chemical and biochemical kinetics. Gillespie algorithm. Applications to intra-cellular kinetics. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>	<p>MATH 587. Discrete Mathematics for MAT students Prerequisite(s): MATH 206 or ENGR 102; MATH 325. Description: Topics include: Pigeon-hole principle, counting techniques, binominal coefficients, generating functions, stirling and catalan numbers, permutations and graphs. Note: Does not count towards the mathematics major or minor. Note: Credit may be applied toward the MAT degree but not towards any other graduate degree in mathematics. Note: Credit not allowed for both MATH 387 and MATH 587.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>
<p>MATH 570. Foundations of Actuarial Science Prerequisite(s): MATH 561. Description: Fundamental mathematical tools for quantitatively assessing risk. Application of these tools to problems encountered in actuarial science is emphasized. Covers the material of Examination 1 of the Society of Actuaries and Casualty Actuarial Society. Note: Credit may not be applied toward a graduate degree in mathematics.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>	<p>MATH 590. History of Mathematics - WR Prerequisite(s): 500-level course in math (except MATH 560). Description: Mathematical history from Mesopotamia to present. Emphasis on doing mathematics, identifying the growth of mathematical concepts and studying prominent mathematicians. Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>

<p>MATH 591. Selected Topics in Mathematics 1-3 Units Prerequisite(s): Announced in Schedule of Courses. Description: An examination of one or more topics in mathematics not usually treated in a regularly offered course. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MATH 612. Complex Variables II 3 Units Prerequisite(s): MATH 611. Description: Including deeper properties of the space of meromorphic functions, harmonic functions and conformal mappings. Note: Continuation of MATH 611. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MATH 601. Real Analysis I 3 Units Prerequisite(s): MATH 502. Description: Basic set theory and real topology, Lebesgue measure and integration on the real line, differentiation of integrals, $L(p)$ spaces. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MATH 621. Algebra I 3 Units Prerequisite(s): MATH 522. Description: Advanced theory of Groups, Rings, Integral Domains and Fields. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MATH 602. Real Analysis II 3 Units Prerequisite(s): MATH 601. Description: Elementary Hilbert space theory, abstract measure spaces and integration, product spaces. Applications to other areas. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MATH 622. Algebra II 3 Units Prerequisite(s): MATH 621. Description: Including Polynomial Rings, Modules, Vector Spaces, Structure of Fields, Galois Theory, Advanced Linear Algebra. Note: A continuation of MATH 621. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MATH 605. Functional Equations I 3 Units Prerequisite(s): MATH 601. Description: Introduction to the theory and application of functional equations in several variables, including Cauchy equations, d'Alembert equation, quadratic functionals. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MATH 631. Group Theory 3 Units Prerequisite(s): MATH 522. Description: Abstract Groups, Homomorphisms, Permutation Groups, Abelian Groups, Simple Groups, Sylow Theory, Series, Extensions. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MATH 606. Functional Equations II 3 Units Prerequisite(s): MATH 605 or consent of department. Description: It extends further the theory of functional equations to applications in various branches of mathematics, information theory, and the natural and social sciences. Note: Continuation of MATH 605. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MATH 633. Rings and Ideals 3 Units Prerequisite(s): MATH 522. Description: Ideals and Homomorphisms, Prime Ideals and the Prime Radical, Rings of Endomorphisms, the Jacobson Radical. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MATH 607. Seminar on Applied Analysis 3 Units Prerequisite(s): MATH 605 or consent of department. Description: Advanced topics in applied analysis. Topics will be determined by the research interests of the students and those of the instructor. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MATH 635. Mathematical Modeling I 3 Units Prerequisite(s): MATH 325, MATH 405 or equivalent. Description: Introduction to mathematical modeling of continuous and discrete dynamical systems. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MATH 611. Complex Variables I 3 Units Prerequisite(s): MATH 502. Description: Geometry of the complex plane and complex analysis. Topics include analytic and meromorphic functions, linear fractional transformations, Cauchy's Theorem and the Residue Theorem. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MATH 636. Mathematical Modeling II 3 Units Prerequisite(s): MATH 635. Description: Advanced mathematical modeling of discrete and continuous dynamical systems. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>

<p>MATH 641. Topology I Prerequisite(s): MATH 502 or MATH 541. Description: Continuous functions, connectedness, compactness, countability, separation, metrizability, and completeness in the context of topological spaces. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>	<p>MATH 670. Introduction to the Stochastic Calculus Prerequisite(s): MATH 660 or consent of the department. Description: Levy Process, local martingale, stochastic integrals, quadratic variation, Ito's formula, existence and uniqueness of stochastic differential equation. Applications to financial engineering, no arbitrage and martingale measure, Black-Scholes model, edging. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>
<p>MATH 642. Topology II Prerequisite(s): MATH 641. Description: Introduction to algebraic topology, including the Fundamental Group and Covering Spaces. Note: A continuation of MATH 641.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>	<p>MATH 673. Actuarial Models I Prerequisite(s): MATH 570 and MATH 572. Description: Theoretical basis of actuarial models and the application of those models to insurance and other financial risks. The following specific models are introduced: Contingent Payment Models, Survival Models, Frequency and Severity Models, Compound Distribution Models, Stochastic Process Models, Ruin Models. Together with its continuation, MATH 674, covers the material on the Examination 3 of the Society of Actuaries and the Casualty Actuarial Society. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>
<p>MATH 663. Theory of Probability I Prerequisite(s): MATH 501 and MATH 561 or consent of department. Description: Advanced topics in probability theory such as probability measures, random variables, laws of large numbers, large deviations, expected values, and distributions. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>	<p>MATH 674. Actuarial Models II Prerequisite(s): MATH 673. Description: It further develops knowledge of the theoretical basis of actuarial models and the application of those models to insurance and other financial risks. The following specific models are introduced: Contingent Payment Models, Survival Models, Frequency and Severity Models, Compound Distribution Models, Stochastic Process Models, Ruin Models. Together with its predecessor, Mathematics 673, covers material on the Examination 3 of the Society of Actuaries and the Casualty Actuarial Society. Note: Continuation of Math MATH 673.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>
<p>MATH 664. Theory of Probability II Prerequisite(s): MATH 663 or consent of department. Description: Advanced topics in probability theory such as types of convergence, central limit theorems, conditional probabilities and expectations, stochastic processes, martingales, and Brownian motion. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>	<p>MATH 676. Actuarial Modeling I Prerequisite(s): MATH 673 and MATH 674. Description: Approximately half of the material on the Society of Actuaries/Casualty Actuarial Society examination 4, Actuarial Modeling. Topics include: statistical analysis of simulated data, statistical validation techniques, actuarial credibility, empirical estimation, loss distributions, and introduction to estimation of survival functions. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>
<p>MATH 667. Statistical Inference Prerequisite(s): MATH 561 or consent of department. Description: Advanced topics in mathematical statistics such as sampling distributions, exponential families, sufficiency, point and interval estimation, likelihood-based inference, hypothesis testing, Bayesian inference, statistical decision theory, and asymptotic theory. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>	<p>MATH 677. Actuarial Modeling II Prerequisite(s): MATH 676. Description: The rest of the material on the Society of Actuaries/Casualty Actuarial Society examination 4, Actuarial Modeling. Topics: Estimation of survival and hazard function. Regression analysis. Multiple regression. Regression in actuarial modeling. Time series models. Properties of stochastic time series. Estimating and forecasting with time-series models. Actuarial modeling with time series. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>
<p>MATH 668. Linear Statistical Modeling Prerequisite(s): MATH 667 or consent of department. Description: This course covers linear and related models including a discussion of fixed, mixed, and random effects models as well as regression and ANOVA models. The discussion will include estimation, hypothesis testing, confidence intervals, model fitting, and model diagnostics. Violations of the assumptions of the linear model will be examined. Statistical software will be used frequently. A strong background in linear algebra is needed. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>		

<p>MATH 681. Combinatorics and Graph Theory I 3 Units Prerequisite(s): MATH 521, or MATH 580, or MATH 581, or consent of department. Description: Fundamental topics in Graph Theory and Combinatorics through Ramsey theory and Polya's theorem respectively. Motivation will be through appropriate applications. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MATH 693. Seminar in Teaching Mathematics 2 Units Prerequisite(s): Must be admitted to a graduate program in the Department of Mathematics and consent of instructor. Description: Topics in teaching mathematics to college students. Note: Does not count as part of the 18-hour minimum in mathematics for the MA in Mathematics. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MATH 682. Combinatorics and Graph Theory II 3 Units Prerequisite(s): MATH 681. Description: Fundamental topics in Graph Theory and Combinatorics through Ramsey theory and Polya's theorem respectively. Motivation will be through appropriate applications. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MATH 694. Graduate Internship 1-6 Units Description: Students participating in a graduate internship must be registered for this course. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MATH 683. Advanced Combinatorics and Graph Theory I 3 Units Prerequisite(s): MATH 681. Description: Advanced topics in Combinatorics and Graph Theory, including finite planes, coding theory, combinatorial optimization, groups, graphs, and graphs on manifolds. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MATH 695. Thesis Guidance 1-6 Units For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MATH 684. Advanced Combinatorics and Graph Theory II 3 Units Prerequisite(s): MATH 681 and MATH 682. Description: Course extends the study of advanced topics in Combinatorics and Graph Theory, including Extremal Graph Theory and Algebraic Combinatorics. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MATH 696. Computer in Teaching Science and Mathematics 3 Units Prerequisite(s): One year of teaching experience or consent of instructor (no previous computer experience needed). Description: Introductory programming and use of computers in a wide range of topics in secondary school science and mathematics. Note: Does not count as part of 15-hour minimum in 600-level mathematics courses for the MA in Mathematics. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MATH 687. Seminar on Discrete Mathematics 3 Units Prerequisite(s): MATH 683 or consent of department. Description: Advanced topics in discrete mathematics. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MATH 699. Seminar 1-12 Units Description: Topics vary. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MATH 690. An Overview of Mathematics 3 Units Prerequisite(s): Undergraduate mathematics major or at least four mathematics courses in the graduate program or consent of instructor. Description: History of mathematics, survey of the major content areas of modern mathematics, discernment of current directions in various mathematical fields. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MATH 700. Doctoral Research 1-6 Units Grading Basis: Pass/Fail Prerequisite(s): Student must have passed all qualifying examinations and have a dissertation committee. Description: Research while enrolled for a doctoral degree under the direction of faculty members. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MATH 691. Independent Study 3 Units For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MATH 710. Doctoral Dissertation 1-6 Units Grading Basis: Pass/Fail Prerequisite(s): Previous enrollment in MATH 700. Description: Dissertation writing under the direction of the major professor. Note: Grade to be deferred until evaluation of the dissertation by the student's committee. Note: Graded pass-fail, depending on the evaluation by the student's committee. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>

Mathematics for Education (MTED)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

MTED 591. Topics in Mathematics for In-Service Teachers 3 Units

Prerequisite(s): MATH 152 or permission of department.

Description: Course is intended for professional development of in-service mathematics teachers and will typically be taught off campus. Mathematical topics will be mixed with strategies for presenting them to students and with applications and technology as needed.

Note: Course does not count toward any degree in the College of Arts & Sciences.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

Mechanical Engineering (ME)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

ME 510. Thermal Design of Internal Combustion Engines 3 Units

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): ME 310.

Description: Thermodynamics and fluid mechanics of internal combustion engine design. Combustion stoichiometry, thermochemistry, and properties of working fluids. Ideal and real engine cycles. Fluid flow processes, combustion processes, pollutant formation and control. Engine operating characteristics.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

ME 512. Finite Element Methods for Mechanical Design I 3 Units

Term Typically Offered: Occasionally Offered

Prerequisite(s): ME 422.

Description: Matrix analysis of static and dynamic structural systems and steady-state heat transfer. Computer aided design of trusses, frames, plane stress structures, as well as one- and two-dimensional thermal systems including conduction and convection.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

ME 513. Energy Conversion 3 Units

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): ME 310.

Description: A study of nuclear and fossil-fueled steam generators, plus internal combustion prime movers and alternate energy sources. A computerized design project will be required.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

ME 521. Mechanical Vibrations 3 Units

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): ME 422.

Description: The theory of vibrating mechanical systems. Modeling of lumped parameter and distributed parameter systems. Free and forced vibration. Damping. Periodic and transient motion. Concept of normal modes. Multiple degree-of-freedom systems. Design applications.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

ME 523. Intermediate Dynamics 3 Units

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): ME 206.

Description: Extension of the concepts in introductory dynamics (ME 206) to three dimensional motion. This includes the kinematics of multiple, rotating reference frames, and Newtonian vector mechanics for particles and rigid bodies (Euler's equations). Lagrangian analytical methods. Stability of motion.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

- ME 526. Vehicle Dynamics and Handling** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): ME 380.
Description: Design of passenger and commercial vehicles for optimal dynamic performance with a focus on architecture layout, characterization of critical subsystems, and CAE-based kinematic and kinetic modeling.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 532. Experimental Stress Analysis** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): ME 323, ME 414 and ME 415 or graduate standing in Mechanical Engineering.
Fee: An additional \$30.00 is charged for this course.
Description: Fundamentals of experimental stress analysis. Brittle coating methods, photoelastic coating and electrical strain gage techniques, strain measurements under static and dynamic loading.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 534. Experimental Vibrations** 3 Units
Term Typically Offered: Summer Odd Years
Prerequisite(s): ME 435.
Description: Experimental techniques for identifying the modal parameters of mechanical and structural systems. Review of multiple degree-of-freedom vibration modeling and analysis. Measurement of frequency response functions. Excitation techniques, instrumentation, Fourier analysis and signal processing. Acoustical modal analysis. Experiments on real mechanical and structural systems.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 535. Control System Design** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): ME 435.
Description: Basic concepts and principles of feedback control systems. Formulation of linear control problems by classical methods. Analysis and synthesis techniques as used in the design of automatic, dynamic control systems. Study of transient and steady state response, use of time and frequency domain concepts. System performance specifications. Design applications.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 536. Applied Stress Analysis** 3 Units
Description: The course is designed to review basic concepts in structural mechanics, formulate analytical solutions to elastic problems, and understand finite element analysis procedures for mechanical engineering problems.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 540. Microfluidics** 3 Units
Term Typically Offered: Fall Only
Description: Introduction to the basic theory and practical applications of microfluidics. Topics include fluid mechanics at small scales, fabrication of microfluidic devices, methods of inducing and controlling flow, and techniques to measure fluid properties.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 542. Gas Turbines** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): ME 310 and ME 401.
Description: Theory and design of various types of gas turbine engines used for power and propulsion. Thermodynamic cycle analysis; design basics of turbomachinery, nozzles, diffusers and combustion chambers; engine performance analysis.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 544. Design of Fluid Power Systems** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): ME 380 and ME 401.
Description: Design methodology of hydraulic circuits and fluid power components. Study of rotary/linear actuators, hydrostatic transmissions, temperature control, contamination control, pneumatics, valves, and control components. Applied design projects and laboratory modules are required.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 547. Design Methods** 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): ME 422.
Description: This course uses broad based engineering knowledge to meld equation driven principles with customer and business driven needs/requirements. The product development process is used to design a mechanical or electro-mechanical product. Topics include: concurrent engineering, project management, voice of customer, quality function deployment, concept generation, concept selection, concept embodiment, robust design methods, design failure mode and effects analysis, design validation plan & report design for X, and value/cost analysis.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 549. Geometric Dimensioning and Tolerancing** 3 Units
Description: Introduction to the terms, rules, symbols, and concepts of GD&T as prescribed in the ASME Y14.5-2009 Standard, plus application of the GD&T. The class includes a comparison of GD&T to coordinate tolerancing; Rules #1 and #2; form and orientation controls; tolerance of position; runout and profile controls. It also introduces measuring using a coordinate measuring machine and PolyWorks
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- ME 551. Materials for Additive Manufacturing** 3 Units
Description: This course will explore polymeric and particulate materials in the context of processes and applications associated with additive manufacturing, popularly referred to as 3D printing. Metals, ceramics, polymers and composites can all be processed using additive manufacturing technologies. This course will guide students to undertake self-directed studies from popular, commercial and refereed research publications contributing to insights on materials-processing-design interactions in additive manufacturing.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 553. Design-To-Manufacture Digital Tools** 3 Units
Description: Successful product design involves correctly answering three inter-related questions: (1) What does the product look like? (2) What will the product be made out of? (3) How will the product be made? The three considerations based on material properties, component shapes, and processing methods offer many opportunities but impose several constraints that affect decision making in manufacturing. This online course will synthesize the learning from foundational engineering courses in materials, design and manufacturing and enable the student to undertake design challenges using the CES EduPack software to skillfully navigate the material-shape-process space.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 555. Introduction to Micro and Nanotechnology** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): CHE 253 or equivalent; Senior or Graduate standing in an engineering program.
Description: Design, fabrication and application of micro- and nano-electro-mechanical systems (MEMS/NEMS). Scaling laws governing micro-and nanoscale physics. Use of MEMS/NEMS devices in electronics, as sensors, and for medical applications.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 556. Micro/Nano Energy Systems** 3 Units
Prerequisite(s): ME 310 or Graduate standing.
Description: Introduction to different micro- and nanoscale energy conversion technologies - their basic principle, design considerations, fabrication, and operation. Topics include mechanical energy harvesting mechanisms such as piezoelectric and electrostatic, thermal energy harvesting systems such as thermoelectric and pyroelectric, and solid-state cooling technologies such as electrocaloric and magnetocaloric.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 559. Process Physics & Material Science in Advanced Manufacturing** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): ME 323 and ME 381.
Description: Materials processing lies at the core of advanced manufacturing. It is through understanding and innovations in materials processing, true progress in manufacturing development can be reached. Topics include mechanical, thermal, electrochemical, acoustic, optical energy-based material processing physics, physical metallurgy, phase transformation, solidification, heat and mass transfer, dislocation mechanics in the context of manufacturing.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 562. Composite Materials** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): ME 422.
Description: Overview of composite materials, stress/strain analysis of a polymer matrix fiber-reinforced composite ply, classical lamination theory, failure criteria, design approaches, manufacturing methods, and applications for structural polymeric composites.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 565. Advanced Engineering Mathematics I** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): ENGR 201 or ENGR 205 or equivalent.
Description: Formulation and solution of mathematical models for mechanical engineering problems leading to ordinary and partial differential equations. Transform solution methods and linear algebra concepts, including real and complex-domain eigenvalue problem solutions.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 566. Advanced Engineering Mathematics II** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): ME 565 or equivalent.
Description: Analysis of engineering systems and phenomena yielding complex domain models and solutions. Power series, Taylor series, and Laurent series. Complex analysis and potential theory. Numerical analysis for complex domain systems. Introduction to optimization and linear programming.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 570. Sustainable Energy Systems** 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): ME 310 and ME 311.
Description: Analysis and design of sustainable energy systems, and exploration of concepts such as carbon capture storage for making fossil energy systems more environmentally acceptable.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- ME 572. Energy Storage Systems** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): ME 440 or graduate standing in Mechanical Engineering.
Description: Study of the principles and analysis of energy systems. Introduction to energy storage systems and their applications; thermal and mechanical energy storage, storage of organic fuels, hydrogen, and electrochemical energy.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 573. Electric and Hybrid Vehicles** 3 Units
Prerequisite(s): By course: ME 310.
Description: By topic: Refrigeration and Heat Pump Systems, Reaction Mixture and Combustion, Chemical and Phase Equilibrium. By course: ME440. By topic: Heat Exchanger Design, Forced Convection. Introduction to the knowledge for the design, analysis, and development of electric, hybrid vehicles, and their components. Topics include the operation principle of electric cars, motors and power electronics in an electric car, battery, and relevant charging technologies.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 575. Special Topics in Mechanical Engineering** 1-4 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Faculty consent.
Description: A special topics course in mechanical engineering topics not covered by regularly scheduled courses.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 580. Air Pollution Control** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): CHEM 202, ME 310 or equivalent.
Description: Origin and fate of air pollutants, combustion and pollutant formation processes, control of emissions of gaseous and particulate pollutants and design of various pollution control devices.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 585. Design and Energy Analysis of Consumer Appliances** 4.5 Units
Description: Application of classical, computational, and experimental methods and analysis to the design of mechanical and energy systems. Topics include material impacts on design, structural component design, and design and analysis of thermal fluid, and acoustic systems.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 588. Independent Study in Mechanical Engineering** 1-4 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Faculty consent.
Description: A theoretical or experimental investigation of a problem area related to mechanical engineering.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 595. Measurement, Reliability, and Thermal Design of Electromechanical Systems** 4.5 Units
Prerequisite(s): ME 585.
Description: Application of classical, computational, and experimental methods and analyses to the design of electromechanical systems. Topics include reliability and failure analysis, measurement and control of electromechanical systems, and analysis and design optimization of thermal systems.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 602. Graduate Internship in Mechanical Engineering** 2 Units
Grading Basis: Pass/Fail
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Admission to Graduate Study, Permission of Department Chair, and Permission of Director of Career Services.
Description: Supervised professional experience in industry at the graduate level. This course provides the structure and focus for the graduate intern field assignment to ensure that the assignment is appropriate and consistent with the intern's graduate course of study and professional development. Not to be counted towards meeting the requirements for a degree. May be repeated for credit.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 606. Continuum Mechanics** 3 Units
Prerequisite(s): Graduate standing, ME 311 and ME 323.
Description: Emphasizes the basic principles of continuum mechanics and the central role these principles play in the formulation of the fundamental equations of fluids and solid mechanics.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 610. Data Acquisition and Signal Analysis** 3 Units
Prerequisite(s): Graduate/Graduate Professional standing in Mechanical Engineering or instructor permission.
Description: Implementation of PC-based data acquisition systems for dynamic signal analysis. The LabView graphical programming language will be used to design virtual instruments for data collection and signal analysis.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 611. Introduction to Experimental Statistical Design** 3 Units
Term Typically Offered: Summer Only
Prerequisite(s): ME 414.
Description: Experimental Statistical Design based on experimental principles including randomization, replication, blocking, and parametric versus non-parametric assumptions. Associated topics include factorial designs, statistical assumptions, regression and software package use. The course is open to students in Mechanical Engineering graduate programs; but is not open to students with credit for IE 563.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- ME 612. Finite Element Methods for Mechanical Design II** 3 Units
Prerequisite(s): ME 512.
Description: Use of general purpose software for practical structural, thermal, and fluid design applications, including nonlinear and transient effects. Advanced modeling techniques, and analysis guideline with emphasis on interpretation of results.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 614. Heating, Ventilating, and Air Conditioning** 3 Units
Prerequisite(s): ME 440.
Description: Psychometric principles. Detailed calculation of heat losses and heat gain for both heating and cooling of buildings. Basic concepts of refrigeration. Design of actual systems and selection of equipment. Automatic controls. Codes and standards. A design project will be required.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 615. Pattern Recognition and Learning Algorithms** 3 Units
Description: In this class students will learn how to use concepts of Machine Learning to identify patterns in related engineering applications. Concepts related to Regression, Classification, Clustering, and Time-Series Forecast will be discussed, alongside topics related to different learning approaches as Supervised Learning, Unsupervised Learning, and Reinforcement Learning. Case studies related to different engineering applications will be presented throughout the course.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 618. Heat Exchanger Design** 3 Units
Prerequisite(s): ME 401 and ME 440.
Description: Thermal and hydraulic design of heat exchangers. Selection and optimum design of heat exchangers. Cost and construction of heat exchangers.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 620. Advanced Mechanics of Solids** 3 Units
Prerequisite(s): ME 432 or equivalent.
Description: Analysis of stress and strain. Topics include failure theories, unsymmetric bending, curved beams, shear center, torsion, beams on elastic foundations, beams with combined axial and lateral loads, thick-wall cylinders, rotating disc, introduction to elastic stability.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 621. Noise and Vibration Control** 3 Units
Prerequisite(s): ME 422 and ME 414.
Description: Practical aspects of noise and vibration control are studied. Methods for measuring and analyzing noise and vibration. Methods for selecting design criteria. Methods for quieting a product.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 625. Mechanical Design of Internal Combustion Engines** 3 Units
Prerequisite(s): ME 310, ME 380, and ME 442, or equivalents.
Description: Principles and procedures for the mechanical design of internal combustion engine components and systems for strength, endurance, and optimal performance. Design projects and computer applications are emphasized.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 626. Vehicle Body Structure Design** 3 Units
Prerequisite(s): ME 380 and ME 442, or equivalent.
Description: Principles of structural analysis and design for commercial and passenger vehicle bodies. Body architecture. Fabrication/assembly options. NVH assessment and optimization. Material selection for safety, reliability, cost reduction and weight reduction.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 630. Turbomachinery** 3 Units
Prerequisite(s): ME 310 and ME 401.
Description: The thermodynamics and fluid mechanics of turbomachinery. Dimensional analysis and performance mapping. Preliminary design procedures. Blading and flow path design. Experimental and theoretical methods for determination of flow losses. Flow field calculations and performance prediction.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 635. Advanced Control Systems** 3 Units
Term Typically Offered: Fall Even Years
Description: Design of modern control systems including state-space realizations and observer design. Introduction to non-linear control systems including phase plane analysis, nonlinear stability analysis, describing functions, feedback linearization and anti-windup compensation. Advanced control methods covered include sliding mode control and adaptive control.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 638. Computational Methods in Fluid Flow and Heat Transfer** 3 Units
Prerequisite(s): Graduate School or Professional School Standing.
Description: Solutions of the momentum and thermal boundary-layer equations; methods of solving boundary-value problems using digital computers. Finite-difference methods, finite-element methods, and other methods for solving equations of fluid flow and heat transfer. Turbulence models.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- ME 639. Injury Biomechanics** 3 Units
Prerequisite(s): ME 649 or BE 354 or equivalent, or permission of the instructor.
Description: Application of mechanics to the study of human injury. Response of the human body to injurious conditions. Injury tolerance of the human body. Applications to child abuse, transportation safety and medico-legal environment.
Note: Cross-listed with BE 639.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 640. Optimum Design Methods** 3 Units
Prerequisite(s): ME 422 or equivalent.
Description: Methods and applications of engineering design optimization. Strategies for problem formulation. Transformation methods, search techniques, linearization methods and quadratic approximation methods. Solution evaluation.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 641. Advanced Mechanics of Machinery** 3 Units
Prerequisite(s): ME 442 and ME 521.
Description: Machine analysis and design for high speed, high performance applications. Rigid-body kinematics and dynamics of mechanisms, balancing of machinery. Cam-follower mechanisms. Mathematical modeling of mechanisms composed of elastically deformable elements such as gears, bearings, linkages and actuators. Transient and steady-state dynamic response. Failure modes and prevention. A design project is required.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 644. Mechatronics** 3 Units
Fee: An additional \$40.00 is charged for this course.
Description: Introduction to multi-domain systems. Mechanical, electrical, electronic, electromechanical system dynamics. Emphasis on modeling and simulation of hybrid systems using modern computer-aided tools.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 645. Mechanical Engineering Structured Research Project** 3 Units
Prerequisite(s): Graduate/professional school standing.
Description: Structured research in a mechanical engineering discipline. A proposal, activity reports and final report are required. Research results are presented for faculty and peer review, and must also be documented in a scholarly paper targeted toward a journal or technical conference. Intended for candidates for the Master of Engineering degree choosing the non-thesis curriculum alternative.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 646. Design for Manufacturability and Reliability** 3 Units
Prerequisite(s): ME 442 and IE 360.
Description: Introduction to manufacturing concerns such as efficient assembly, producibility, and quality that should be considered early in the design process. Topics include the product development cycle, manufacturing process selection, tolerancing, design for assembly, quality control techniques, Taguchi's robust design methodology, quality function deployment, value engineering and reliability-based design. Life cycle optimization.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 647. Advanced Design Methods** 3 Units
Prerequisite(s): ME 442 and ME 497.
Description: Practical techniques for product definition, concept generation and selection, value analysis, parameter design, design for manufacture, life cycle design and product structuring.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 650. Biofluid Mechanics** 3 Units
Prerequisite(s): ME 401.
Description: Application of the Navier-Stokes equation to flow in the human body and to other biological systems.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 651. Kinematics and Kinetics of Human Movement** 3 Units
Prerequisite(s): ME 206.
Description: Development of analytical tools for evaluating three-dimensional kinematics and kinetics of human motion.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 652. Advanced Human Biodynamics** 3 Units
Prerequisite(s): ME 651.
Description: Development of techniques for synthesis and analysis of kinematic and kinetic models of human motion, in conjunction with acquisition of biomechanical data associated with functional human movement.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 661. Advanced Thermodynamics** 3 Units
Prerequisite(s): Graduate or Professional school standing.
Description: Review of thermodynamic fundamentals, with application to selected topics. Irreversible, non-equilibrium thermodynamics.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 662. Intermediate Heat Transfer** 3 Units
Prerequisite(s): ME 440.
Description: Classical heat conduction solutions and numerical techniques. Intermediate convection and radiative heat transfer topics.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- ME 667. Solar Energy Applications** 3 Units
Prerequisite(s): ME 401 and ME 440.
Description: Theory of solar radiation transmission, absorption and reflectance. Heat transfer in solar energy devices. Design methods for heating of buildings by solar energy. Active and passive solar applications.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 668. Advanced Mechanical Vibrations** 3 Units
Prerequisite(s): ME 521.
Description: Analytical and computational methods for mechanical vibration problems. Formulation and solution techniques. Modeling and applications.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 669. Advanced Dynamics** 3 Units
Prerequisite(s): Graduate or Professional school standing.
Description: Kinematics and dynamics of rigid-body motion. An introduction to variational mechanics, including generalized coordinates and Lagrange's equations of motion. Stability of motion, including the Routh-Hurwitz criterion and the Liapounov direct method.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 670. Experimental Fluid Mechanics** 3 Units
Term Typically Offered: Occasionally Offered
Description: This course provides a graduate-level introduction to the basic theory and practical application of several important experimental techniques used in fluid dynamics. Topics include techniques for the measurement of material properties, pressure, density, force, fluid velocity, temperature and heat flux. The course will also review applications of measurement techniques for non-Newtonian fluids, hydraulics, microfluids, and other special-case topics. Fundamentals of data processing and data acquisition will be discussed.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 671. Advanced Fluid Mechanics** 3 Units
Prerequisite(s): ME 401.
Description: A study of the Navier-Stokes equation, with application to laminar and turbulent-flow fields for various geometries. Computer applications.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 675. Advanced Topics in Mechanical Engineering** 1-6 Units
Prerequisite(s): Faculty consent.
Description: An advanced course in mechanical engineering topics not covered by regularly scheduled courses.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 683. Additive Manufacturing with Polymers** 3 Units
Term Typically Offered: Spring Only
Description: This course will explore polymer materials used in Additive Manufacturing (AM) in the context of design of new materials, material selection, polymer processing for AM, material selection for AM, and various applications that can be manufactured with polymer AM. This course offers new design tools such as CES and MSC Digimat that are often used by design engineers in AM for material and process selection and process simulation to reduce trial-and-error practices. This course will guide students to undertake self-directed learning from peer reviewed research papers, and popular publications to enable focused learning in a continuously emerging field of AM.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 685. Computational Modeling of Materials** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): ME 310.
Description: Crystal structures and chemical bonding in solids; Basics of statistical thermodynamics; introduction to different materials modeling techniques at nano-to meso-scale (Molecular Dynamics, Monte-Carlo, and Kinetic Monte-Carlo); atomic-scale modeling of surface diffusion processes, structural, thermal, mechanical, and defect properties; "Hands-on" sessions on designing and executing atomistic simulations using available open-source packages, visualize and analyze output; introduction to emerging techniques like machine learning and materials informatics to design-materials.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 688. Independent Study in Mechanical Engineering** 1-6 Units
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 690. Master of Science Thesis or Paper in Mechanical Engineering** 1-6 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Graduate standing.
Description: Experimental and/or theoretical research performed under the direction of a faculty member. A written thesis must be presented to a faculty committee and defended, or a paper approved by a faculty committee must be submitted to a peer reviewed journal or conference. Intended for candidates for the Master of Science degree choosing the thesis or paper curriculum alternative.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- ME 694. Mechanical Engineering Seminar** 0 Units
Grading Basis: Pass/Fail
Prerequisite(s): Graduate or Professional school standing.
Description: Presentations on research projects and current literature. Course begins in the fall semester and concludes in the spring semester.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ME 695. Platform Engineering Project 3 Units

Prerequisite(s): ME 530, ME 531, and ECE 532.
Description: Major product development project involving a multidisciplinary team working on design and/or research problems associated with consumer appliance technologies. Concurrent topics on project realization and management. A proposal, activity reports and final report are required. Project results are presented for faculty and peer review.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ME 697. Master of Engineering Thesis or Paper in Mechanical Engineering 1-6 Units

Prerequisite(s): Graduate or Professional school standing.
Description: Original design or research activity in a mechanical engineering discipline, under the direction of a faculty member. A written thesis must be presented to a faculty committee and defended, or a paper approved by a faculty committee must be submitted to a peer reviewed journal or conference. Intended for candidates for the Master of Engineering degree choosing the thesis or paper curriculum alternative.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

ME 700. Dissertation Research in Mechanical Engineering 1-18 Units

Prerequisite(s): Completion of doctoral program core and permission of dissertation director.

Description: Original research activity in an appropriate mechanical engineering discipline, under the direction of a Mechanical Engineering graduate faculty member.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Microbiology & Immunology (MBIO)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

MBIO 600. Lab Rotations 1-2 Units

Grading Basis: Pass/Fail
Description: Research experience in different faculty members' laboratories in areas of interest to the student. The purpose is to help the student select a Research Advisor. Acceptance by the faculty members is required. The course consists of one or two laboratory rotations (one rotation per quarter) with one credit hour per rotation. This course may be taken more than once if deemed necessary. Fall and spring semesters only. Pass/fail grading.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MBIO 601. Molecular Microbiology 2 Units

Term Typically Offered: Fall Only
Description: This is an advanced graduate course in Microbiology and material will be presented at a first year graduate level, assuming that the students have a background in microbiology from previous undergraduate coursework, or have a high interest and sufficient motivation to learn at the state of the art level in this field. The course is primarily intended as a required class for all students seeking a PhD degree in Microbiology and Immunology, and will therefore provide the basic foundation of knowledge needed to build on to become an expert in the field, or in closely related fields in Biology and Oral Biology.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MBIO 602. Immunology 3 Units

Prerequisite(s): Permission of course directors.
Description: This course provides an advanced introduction to innate and adaptive immunity at cellular and molecular levels including: identification of the cells of the immune system and their roles in various immune responses, the role and mechanisms of intercellular communication in induction and regulation of immune responses, gene rearrangement in formation of antigen receptors, regulation of antibody responses in response to infection, cytotoxic T cell responses against tumors and infectious agents, hypersensitivity reactions and autoimmunity.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MBIO 604. General Virology 1 Unit

Term Typically Offered: Fall Only
Description: This is an introductory course that focuses on building basic virology concepts including the basic replication steps common to viruses, entry, replication and egress, interaction of virus with host cellular proteins during the replication cycle, general virus replication cycle, how and why some viruses cause disease (viral pathogenesis), and how viral diseases spread (mode of transmission), and current approaches of vaccines and antivirals. Format: lectures, student presentations. Graded.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MBIO 606. Seminar 1 Unit

Grading Basis: Pass/Fail
Prerequisite(s): Consent of instructor.
Description: Pass/Fail grading.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- MBIO 610. Methods and Analysis in the Biomedical Sciences** 2 Units
Description: The primary goal of the course is to provide first-year graduate students with the conceptual framework to become familiar with key tools and techniques used in biomedical science research. We will examine the kind of information the methodology can provide, the strengths and weaknesses of the approach, and how data obtained can be judged and used to address scientific problems.
Note: Cross-listed with ASNB 610, BIOC 610, PHTX 610, PHZB 610.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MBIO 611. Learning Theories & Instructional Strategies in Science Education** 2 Units
Term Typically Offered: Summer Only
Description: This course covers how to actively engage all students in the classroom and prepares students to teach in graduate courses at the School of Medicine or other schools of higher education. Students will create a lesson plan, PowerPoint presentation and activities to engage the students; an assessment plan to measure student's performance; and a teaching philosophy statement.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MBIO 618. Topics in Advanced Microbiology** 1-3 Units
Prerequisite(s): Consent of instructor.
Description: An in-depth examination of one or more topics not included in regularly offered courses in the curriculum. Topics vary.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MBIO 619. Research** 1-12 Units
Grading Basis: Pass/Fail
Prerequisite(s): Consent of instructor.
Description: Pass/Fail grading.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MBIO 621. Advanced Immunology: Innate and Adaptive Immunity** 2 Units
Prerequisite(s): MBIO 602 or consent of instructor.
Description: This is an advanced interdisciplinary graduate level course focused on acquiring deeper knowledge about cells and associated concepts involved in innate and acquired immunity. The cells include dendritic cells, macrophages, neutrophils, innate lymphoid cells, NK cells and T cells. Concepts such as cell differentiation, development, activation and function, antigen presentation, thymic selection, and cell cross-talk will be discussed. Format: short lectures, analysis of pertinent high-profile papers. Graded.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MBIO 622. Immunity to Microbes and Tumor** 2 Units
Term Typically Offered: Fall Only
Prerequisite(s): MBIO 601 and MBIO 602 or consent of instructor; Completion of all first year graduate courses & an average of 3.0 GPA is required.
Description: The course focuses on the cellular and molecular components of the immune response that perpetuate or protect against pathogenic and commensal microbes, tumor cells and autoimmunity. Short lectures will be followed by student analysis of pertinent high profile papers.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MBIO 623. Scientific Writing and Hypothesis Testing** 1 Unit
Grading Basis: Pass/Fail
Term Typically Offered: Summer Only
Prerequisite(s): Permission of instructor.
Description: This course will teach students writing and presentation skills necessary to compete successfully for grant funding, and more generally to succeed as a scientist. Topics covered in this course include how to write Abstract, Specific aims, Significance and Approach sections, and how to prepare an effective biosketch. Didactic lectures on these topics will be combined with in class presentations by students.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MBIO 631. Basic Microbiology, Immunology, and Virology** 2 Units
Term Typically Offered: Summer Only
Prerequisite(s): Consent of instructor.
Description: A general course in infectious diseases and immunology. Special emphases are placed on oral infections, immune phenomena, and natural resistance mechanisms. Specific topics include the human immune response, pathogenesis of microbial infections, molecular and microbiological basis of periodontal diseases, pulp and periapical infections and cariogenesis. Graded. Summer semester only.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MBIO 632. Basic Immunology** 1 Unit
Term Typically Offered: Summer Only
Description: This course is designed to teach graduate students in programs related to biomedical research the basics of Immunology.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MBIO 687. Microbial Pathogenesis** 2 Units
Term Typically Offered: Spring Only
Prerequisite(s): MBIO 601, BIOC 645, or consent of instructor.
Description: A detailed discussion of host-parasite interactions, focusing on the characteristics (i.e., virulence factors) of bacteria that enable them to cause disease. Exotoxins, capsules, adherence mechanisms, intracellular replication, and iron metabolism will be described in detail. Specific bacterial diseases will be examined to illustrate how each virulence factor is required in the infectious process. The use of animals and other model systems will be discussed. Graded. Spring.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MBIO 690. Research Methods in Microbiology and Immunology 2 Units**Grading Basis:** Pass/Fail**Term Typically Offered:** Fall Only**Description:** A series of lectures and laboratory demonstrations emphasizing current research techniques used in areas of immunology, virology, microbiology, biochemistry and molecular biology. A limited amount of hands-on experience may be utilized in some areas. Fall semester only. Pass/fail grading.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Modern Languages (M L)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

M L 500. Study Abroad 1-15 Units**Prerequisite(s):** Membership in a University of Louisville Language Study Abroad Program or a program approved by the department.**Description:** Credit awarded upon demonstration of successful completion of program undertaken with prior approval of the department, including a paper or project and an oral or written examination in the language and culture, administered under the supervision of a faculty member.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**M L 506. Francophone Women Writers - WR 3 Units****Prerequisite(s):** Junior standing or faculty consent.**Description:** Readings of literary and non-literary texts by women of the French-speaking world.**Note:** Cross-listed with WGST 571.**Note:** Approved for the Arts & Sciences upper-level requirement in written communication (WR).For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**M L 519. German Intellectual History 3 Units****Prerequisite(s):** Consent of instructor.**Description:** Consideration of German thought and sensibility from the Middle Ages to the present.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**M L 551. Special Topics 3 Units****Prerequisite(s):** Consent of instructor.**Description:** Special themes and issues of particular significance as reflected in selected works of foreign language, literature or culture. Topics vary.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**M L 552. Special Topics 3 Units****Prerequisite(s):** Consent of instructor.**Description:** Special themes and issues of particular significance as reflected in selected works of foreign language, literature or culture. Topics vary.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**M L 553. Selected Authors in Foreign Literature 3 Units****Prerequisite(s):** Consent of instructor.**Description:** The life and works of significant authors chosen from the panorama of foreign literature; their literary and/or cultural impact on society. Authors will vary from semester to semester.**Note:** Approved for the Arts and Sciences upper-level requirement in written communication (WR).For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**M L 561. Masterpieces of Russian Literature 3 Units****Description:** Reading and discussion of the three greatest masterpieces of Russian literature: Tolstoy's "War and Peace," Dostoevsky's "Brothers Karamazov," and Pushkin's "Eugene Onegin".For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**M L 599. Independent Study 3 Units****Term Typically Offered:** Occasionally Offered**Prerequisite(s):** Consent of department chair.**Description:** Independent study in areas not covered in the regular curriculum.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**M L 605. Summer Workshop for Foreign Language Teachers 3 Units****Prerequisite(s):** Consent of instructor.**Description:** Intensive, two-to-three-week workshop exploring a pedagogical topic.**Note:** Cross-listed with LING 605.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

M L 640. Graduate Reading Knowledge of Foreign Language 3 Units

Grading Basis: Pass/Fail

Prerequisite(s): Graduate standing and approval of the chair.

Description: Intensive language course designed for graduate students who are preparing for language reading examinations, providing reading knowledge of a foreign language by focusing on fundamentals of translation.

Note: Cross-listed with HUM 640.

Note: The credits may not be used as part of a graduate program.

Note: May be repeated up to three (3) times for different languages.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Music (MUS)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

MUS 500. Music History Review 0 Units

Grading Basis: Pass/Fail

Term Typically Offered: Fall, Spring

Description: The purpose of the course is to provide the student with a reasonable method of removing deficiencies revealed by the Graduate Entrance Examination. No graduate student will be allowed to enroll in any graduate course in a historical period in which he has failed to pass the corresponding section of the Graduate Entrance Examination until he has removed his deficiency in the history of the subject. Areas covered are: deficiencies within the period from the Middle Ages to 1530; deficiencies within the period between 1530 and 1750; deficiencies within the period between 1750 and 1850; and deficiencies within the period from 1850 to the present.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MUS 501. Major Applied Study 2 Units

Term Typically Offered: Fall, Spring

Description: One-hour private lesson for performance majors.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MUS 502. Major Applied Study 2 Units

Prerequisite(s): Faculty consent.

Description: One-hour private lesson for performance majors. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MUS 503. Major Applied Study 4 Units

Prerequisite(s): Faculty Consent.

Description: PIANO: First year: Student will study scales and arpeggios, Bach 2-Part Inventions, Sonatas by Haydn or Mozart, and compositions by such composers as Beethoven, Schubert, Chopin, Mendelssohn, Grieg. Second Year: Student will study scales and arpeggios, and literature equivalent to Bach 3-Part Inventions or French Suites, Sonatas by Beethoven or Schubert, Mozart Fantasia or Rondo, Scarlatti Sonatas, compositions by Chopin, Schumann, Brahms, Debussy. Third Year: Student will study technical materials and such materials as Bach English Suites or Preludes and Fugues, Sonatas by Mozart of Beethoven, Haydn Variations, Mozart Concertos or compositions by Chopin, Liszt, Rachmaninoff, Debussy. Fourth Year: Student will study technical materials and such materials as Bach Partitas and Preludes and Fugues, Sonatas by Beethoven, Schumann, or Chopin, Mozart or Beethoven. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MUS 504. Major Applied Study 4 Units

Prerequisite(s): Faculty Consent.

Description: PIANO: First year: Student will study scales and arpeggios, Bach 2-Part Inventions, Sonatas by Haydn or Mozart, and compositions by such composers as Beethoven, Schubert, Chopin, Mendelssohn, Grieg. Second Year: Student will study scales and arpeggios, and literature equivalent to Bach 3-Part Inventions or French Suites, Sonatas by Beethoven or Schubert, Mozart Fantasia or Rondo, Scarlatti Sonatas, compositions by Chopin, Schumann, Brahms, Debussy. Third Year: Student will study technical materials and such materials as Bach English Suites or Preludes and Fugues, Sonatas by Mozart of Beethoven, Haydn Variations, Mozart Concertos or compositions by Chopin, Liszt, Rachmaninoff, Debussy. Fourth Year: Student will study technical materials and such materials as Bach Partitas and Preludes and Fugues, Sonatas by Beethoven, Schumann, or Chopin, Mozart or Beethoven. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MUS 505. Jazz Applied 2 Units

Term Typically Offered: Fall, Spring

Prerequisite(s): Faculty consent.

Description: One-hour private lesson focusing on the jazz idiom. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MUS 506. Jazz Applied 2 Units

Term Typically Offered: Fall, Spring

Prerequisite(s): Faculty consent.

Description: One-hour private lesson focusing on the jazz idiom. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

<p>MUS 509. Major Ensembles Term Typically Offered: Fall, Spring Prerequisite(s): Graduate standing in music or by permission of instructor. Description: Symphony Orchestra; Symphonic Band; Early Music Ensemble; Opera Theater; Jazz Ensemble; Jazz Repertory Ensemble, Concert Band; Pep Band; Wind Ensemble; Wind Symphony, New Music Ensemble; Marching Band; University Chorus; Collegiate Chorale, Vocal Jazz Ensemble, Singing Cardsmen, Women's Chorus, Jazz Lab. Note: May not be used for credit towards a graduate degree.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>1 Unit</p>	<p>MUS 517. Audio for Games and Non-Linear Media Term Typically Offered: Fall, Spring Prerequisite(s): Upper Division or Graduate standing in Music, or permission of the instructor. Description: Audio for Games and Non-Linear Media explores the world of game audio; including foley, sound design, dialogue, spatial audio, and music and how these features are integrated into a game engine. In this course we will use industry-standard tools like the Unity game engine, and Wwise middleware. We will cover both the creative and technical dimensions of sound for interactive media, from generating unique, life-like sound, interactive mixing and musical queues, to learning how audio engines synchronize with game states and events. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>2 Units</p>
<p>MUS 511. Principal Applied Study Term Typically Offered: Fall, Spring Prerequisite(s): Faculty consent. Fee: An additional \$400.00 is charged for this course. Fee is charged for non-music majors only. Description: One-hour private lesson for students majoring in composition, music education, music history, music therapy, or theory. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>2 Units</p>	<p>MUS 519. Minor Ensembles Term Typically Offered: Fall, Spring Prerequisite(s): Graduate standing in music or by permission of instructor. Description: Study and performance of works for small ensembles: Piano; String; Woodwind; Brass or Percussion Ensemble; Improvisation; Guitar; Jazz Combo (Instrumental); Jazz Ensemble; Brass Chamber Music, Historical Brass Ensemble, Trombone, Tuba or Tuba/Euphonium; Saxophone Ensemble; Opera Workshop; Clarinet, Flute, Harp Ensemble; Community Band; Historical Instruments and Techla, Cardinal Rule. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>0.5 Units</p>
<p>MUS 512. Principal Applied Study Term Typically Offered: Fall, Spring Prerequisite(s): Faculty consent. Description: One-hour private lesson for students majoring in composition, music education, music history, music therapy, or theory. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>2 Units</p>	<p>MUS 521. Secondary Applied Study Term Typically Offered: Fall, Spring Prerequisite(s): Faculty consent. Fee: An additional \$200.00 is charged for this course. Fee is charged for non-music majors only. Description: A secondary applied music course carried in addition to the student's major or principal field. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>1 Unit</p>
<p>MUS 513. Principal Applied Study Term Typically Offered: Fall, Spring Prerequisite(s): Faculty consent. Description: One-hour private lesson for piano pedagogy majors. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>4 Units</p>	<p>MUS 522. Secondary Applied Study Term Typically Offered: Fall, Spring Prerequisite(s): Faculty consent. Fee: An additional \$200.00 is charged for this course. Fee is charged for non-music majors only. Description: A secondary applied music course carried in addition to the student's major or principal field. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>1 Unit</p>
<p>MUS 514. Principal Applied Study Term Typically Offered: Fall, Spring Prerequisite(s): Faculty consent. Description: One-hour private lesson for piano pedagogy majors. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>4 Units</p>	<p>MUS 525. Arts Instrument Term Typically Offered: Fall, Spring Prerequisite(s): Faculty consent. Fee: An additional \$200.00 is charged for this course. Fee is charged for non-music majors only. Description: Half-hour private lesson for students pursuing the Bachelor of Arts in Music degree. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>1 Unit</p>

<p>MUS 526. Arts Instrument Term Typically Offered: Fall, Spring Prerequisite(s): Faculty consent. Description: Half-hour private lesson for students pursuing the Bachelor of Arts in Music degree. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>1 Unit</p>	<p>MUS 535. Music Industry I Term Typically Offered: Fall, Spring Prerequisite(s): Sixty credit hours earned. Description: A study of current practices affecting the professional musician and a survey of career opportunities relating to music and industry. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>2 Units</p>
<p>MUS 527. Choral Music in the Modern Secondary School Term Typically Offered: Occasionally Offered Description: Procedures and techniques for use with the high school chorus including such topics as selection of repertoire, voice production, diction, rehearsal psychology, and performance practice. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>2 Units</p>	<p>MUS 536. Music Industry II Term Typically Offered: Occasionally Offered Prerequisite(s): MUS 535. Description: Continuation of MUS 535. Includes broadcast, performance, marketing, retail sales, audio/video engineering, publishing, law, and labor relations. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>2 Units</p>
<p>MUS 528. Musicians' Wellness Term Typically Offered: Fall, Spring Description: An intellectual and experiential understanding of the Alexander Technique and technique of "respiration awareness" mediation. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>1 Unit</p>	<p>MUS 537. Advanced Techniques for Marching Bands Term Typically Offered: Occasionally Offered Prerequisite(s): MUS 337 or permission of instructor. Description: Problems in preparing the halftime show. Arranging for the marching band. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>2 Units</p>
<p>MUS 529. Cardinal Singers Term Typically Offered: Fall, Spring Description: Honors choral ensemble with entrance by audition only. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>0.5 Units</p>	<p>MUS 538. Studies in Pedagogy Term Typically Offered: Fall, Spring Prerequisite(s): Upper Division or graduate standing. Description: Pedagogy studies on specific instruments. Offered under separate sections. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>1 Unit</p>
<p>MUS 530. Choral Literature I Term Typically Offered: Fall, Spring Description: A survey of choral literature from chant to c.1750. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>2 Units</p>	<p>MUS 539. Studies in Jazz Term Typically Offered: Fall, Spring Prerequisite(s): Vary by section, see course description. Description: Focus on aural skills, transcription methods, and advanced jazz harmony topics. Extended functional harmony and advanced rhythmic concepts. Examples will focus on transcribed solos by established jazz masters. Sections include: (01) Jazz Style Analysis, Prereq: Theory IV and MUS 138 and permission of instructor. Explores jazz style through analysis of historically significant transcribed solos as played by jazz masters (02) Advanced Jazz Theory, Prereq: Jazz Theory I or passing grade on Jazz Theory Entrance Exam. (03) Standard Jazz Repertoire Prereq: MUS 138 and permission of instructor. Focuses on learning compositions from standard jazz repertoire. While improvisation is stressed as an important part of the learning process, the main objective will be to learn and memorize melodies and chord progressions of selected pieces from a number of musical styles. Each class session will concentrate on a specific style, composer, and/or type of composition tune. A variety of tempos and keys will be chosen. Selected compositions may be performed with play-a-long recordings or with other students in class. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>2 Units</p>
<p>MUS 531. Choral Literature II Term Typically Offered: Fall, Spring Description: A survey of choral literature from c.1750 to present. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>2 Units</p>		
<p>MUS 533. Functional Study Term Typically Offered: Fall, Spring Prerequisite(s): Faculty consent. Description: One half-hour private lesson weekly in an applied area. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>1 Unit</p>		
<p>MUS 534. Functional Study Term Typically Offered: Fall, Spring Prerequisite(s): Faculty consent. Description: One half-hour private lesson weekly in an applied area. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>1 Unit</p>		

<p>MUS 541. Private Non-Major Music Composition I 2 Units Term Typically Offered: Fall, Spring Prerequisite(s): Admission to graduate music study or permission of the instructor. Description: Composition study for graduate students who are not composition or music theory majors. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MUS 548. Post-Tonal Theory and Analysis 2 Units Term Typically Offered: Fall Only Prerequisite(s): MUS 547. Description: Survey of post-tonal theory. Analysis of centric, atonal, serial, and other music composed since 1900. Note: Credit not allowed for both MUS 548 and MUS 648. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MUS 542. Private Non-Major Music Composition II 2 Units Term Typically Offered: Fall, Spring Prerequisite(s): Admission to graduate music study or permission of the instructor. Description: Composition study for graduate students who are not composition or music theory majors. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MUS 549. Renaissance Counterpoint 2 Units Term Typically Offered: Fall Only Prerequisite(s): Upper division or graduate standing. Description: A study of 16th-century vocal polyphony in the style of Palestrina, Lassus, et al.; including stylistic composition in two or more voices. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MUS 543. Advanced Composition 3 Units Term Typically Offered: Fall, Spring Prerequisite(s): Permission of instructor. Corequisite(s): MUS 441 for undergraduates, MUS 669 for graduates. Description: Continuation of MUS 444. Public presentation required. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MUS 550. Baroque Counterpoint 2 Units Term Typically Offered: Spring Only Prerequisite(s): Upper division or graduate standing. Description: A study of 18th-century counterpoint, emphasizing Bach's style and forms, including stylistic composition in two or more voices. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MUS 544. Advanced Composition 3 Units Term Typically Offered: Fall, Spring Prerequisite(s): Permission of Instructor. Corequisite(s): MUS 441 for undergraduates and MUS 669 for graduates. Description: Continuation of MUS 543. Public presentation required. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MUS 551. Studies in Improvisation 2 Units Term Typically Offered: Fall, Spring Prerequisite(s): Upper division, graduate standing in music, or permission of instructor. Description: Improvisation and open-form music are explored through creation and performance, and the study of various improvisation traditions. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MUS 545. Advanced Instrumental Scoring 2 Units Term Typically Offered: Fall, Spring Prerequisite(s): Undergraduate orchestration course or permission of instructor. Description: Analysis of orchestration techniques by 19th- and 20th-century composers. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MUS 552. Pedagogy of Theory 2 Units Term Typically Offered: Fall, Spring Description: Analysis and discussion of various methods of teaching the elements of music theory. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MUS 547. Chromatic Harmony and Analysis 2 Units Term Typically Offered: Spring Only Prerequisite(s): MUS 242 and MUS 347. Description: A study of chromatic harmony and voice leading, expanded tonality, and extended forms. Analysis of music of the late 19th and early 20th centuries; creative writing in styles of this period. Note: Credit not allowed for both MUS 547 and MUS 647. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MUS 555. Instrument Repair 2 Units Term Typically Offered: Not Offered Description: Repair of woodwind and brass instruments. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
	<p>MUS 557. Piano Technology I 2 Units Term Typically Offered: Occasionally Offered Prerequisite(s): Permission of instructor. Description: Study of the complex inner workings of the piano. Includes basics of tuning and maintenance. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>

<p>MUS 558. Piano Technology II 2 Units Term Typically Offered: Occasionally Offered Prerequisite(s): MUS 557 or permission of the instructor. Description: Study of the complex inner workings of the piano. Includes basics of tuning and maintenance. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MUS 565. Church Music Literature 2 Units Term Typically Offered: Not Offered Description: Designed to acquaint the student with church music repertoire of the past and present and to give practical training in service playing and accompanying. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MUS 559. Instrumental Conducting and Score Reading 2 Units Term Typically Offered: Fall, Spring Prerequisite(s): MUS 346 or permission of instructor. Description: Conducting techniques and problems for the public school instrumental director. Reading from full score. Survey of literature. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MUS 566. Church Music Literature 2 Units Term Typically Offered: Not Offered Description: Designed to acquaint the student with church music repertoire of the past and present and to give practical training in service playing and accompanying. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MUS 561. Literature 2 Units Term Typically Offered: Fall, Spring Prerequisite(s): Upper Division standing. Description: Offered under the various subtitles/sections: (01) Piano Literature I: A survey of piano repertoire from the Baroque and Classical Eras. (02) Band Literature: A survey of literature for wind and percussion instruments in large ensemble combinations focusing upon material for the standard instrumentation of the concert band. Emphasis will be given to dramatic change in the repertoire from 1950 to the present, particularly the implications for instrumental music education. Course work will include both artistic and practical considerations with study of works by Hindemith, Stravinsky, Schoenberg, Persichetti, Gould, and Ives. (03) Organ Literature: A comprehensive study in the field of organ literature from Schlich to Hindemith. No performance required. (05) Vocal Literature: A survey of vocal literature from the 18th century to the present day, with emphasis on standard repertoire. Program analysis and program building. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MUS 567. Introduction to Electronic and Computer Music 2 Units Term Typically Offered: Fall, Spring Prerequisite(s): MUS 270 or permission of instructor. Description: Introduction to computer music studio, including MIDI sequencing, analog and FM sound synthesis, digital recording and editing, video synchronization, multimedia applications, and comprehensive study of the literature and styles of the class tape studios. Note: Cross-listed with MUS 667. Note: Credit not allowed for both MUS 567 and MUS 667. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MUS 562. Literature 2 Units Term Typically Offered: Fall, Spring Description: A survey of piano repertoire from the Romantic and Modern Eras. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MUS 568. Advanced Topics in Computer Music 2 Units Term Typically Offered: Fall, Spring Prerequisite(s): MUS 567 or permission of instructor. Description: Study of advanced synthesis techniques, digital sampling, direct digital synthesis, and study of recent literature and trends in computer music. Note: Crosslisted with MUS 668. Note: Credit not allowed for both MUS 568 and MUS 668. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MUS 563. Literature 1 Unit Term Typically Offered: Fall, Spring Prerequisite(s): Upper division or graduate standing. Description: Performance Literature for specific instruments. Offered under separate sections. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	
<p>MUS 564. Literature 1 Unit Term Typically Offered: Fall, Spring Prerequisite(s): Upper division or graduate standing. Description: Performance Literature for specific instruments. Offered under separate sections. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	

- MUS 570. Studies in Music History** **3 Units**
Term Typically Offered: Fall, Spring
Prerequisite(s): See note below.
Description: Areas of study are Medieval Music, Renaissance Music, Baroque Music, Viennese Classicism, Romantic Music, Twentieth-Century Music, Jazz, Opera Repertory. MUS 570, MUS 580, and MUS 585 - MUS 586 are intended for master's degree students or advanced undergraduates admitted by permission of the instructor and with the recommendation of the undergraduate advisor. The following criteria, subject to adjustment by the instructor according to the nature of the course and its organization, will distinguish the work of students registered under one or the other number. Students enrolled in either 500- or 600-level courses are required to write term papers. Research papers at the 600-level are expected to demonstrate originality and the ability to use resources in at least one foreign language, and in general are expected to be of a quality appropriate to a professional paper. While students enrolled at either level are required to participate in a seminar by presenting reports and papers, those registered at the 600-level may be required to assume full responsibility for the development and direction of a study, by the whole class, of a particular subject or problem.
Note: Master's degree students may enroll in these courses at the 600-level under two conditions: 1) when 600-level courses are required by a specific curriculum (eg, MM in Music History), and 2) with the approval of the student's advisor.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MUS 571. Pedagogy** **2 Units**
Term Typically Offered: Fall, Spring
Prerequisite(s): Varies by section—see description.
Description: Topics vary by section. Sections include: (01) Piano Pedagogy: Prereq: MUS 371, MUS 372, MUS 471, MUS 472. Examination, evaluation, and discussion of piano teaching materials at all levels. (03) Advanced Brass Pedagogy Teaching, observing, study, research, and lecture of brass teaching techniques Prereq: For seniors or graduate students only. (05) Voice Pedagogy: Prereq: 3 years of college-level voice study. For advanced students wishing to study the principles and techniques involved in teaching voice, with supervised practice teaching designed to give practical studio teaching experience. (6) Organ Pedagogy Prereq: For Seniors or Grad Study only. Basic concepts of approaching & teaching beginning, intermediate, and advanced organ students. (07) Jazz Pedagogy Addresses pedagogical techniques of teaching jazz. Prereq: MUS 242 and MUS 351, or graduate student standing.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MUS 572. Pedagogy** **2 Units**
Term Typically Offered: Fall, Spring
Description: Refer to: MUS 571.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MUS 575. Music Production** **2 Units**
Term Typically Offered: Fall, Spring
Description: Introduction to computer-based music recording and production using state-of-the-art software.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MUS 576. Multimedia Production** **2 Units**
Term Typically Offered: Spring Only
Prerequisite(s): Upper division or graduate standing in Music, or permission of the instructor.
Description: Introduction to technical aspects of creating multimedia projects with audio and video hardware and software.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MUS 577. Marching Band Drill Writing** **2 Units**
Term Typically Offered: Fall, Spring
Description: Introduces principles of contemporary and traditional drill writing techniques and styles.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MUS 578. The Music of the Black Church** **3 Units**
Term Typically Offered: Fall Odd Years
Prerequisite(s): Upper division or graduate standing in Music, or permission of the instructor.
Description: This course is designed for the upper division or graduate student in music or Pan-African studies and explores the historical and musical development of African American sacred music from slavery to the present; from Spirituals to traditional and contemporary Gospel music. Special emphasis is given to the impact that this music has had on African-American culture in the United States, which represents a synthesis of African and European cultures into a unique hybrid with its own tradition of development.
Note: Cross-listed with PAS 578.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MUS 579. 21st-Century Entrepreneurship for Musicians** **2 Units**
Term Typically Offered: Fall, Spring
Prerequisite(s): Open to Juniors, Seniors, and graduate music majors.
Description: Part of a broader effort to transform the ways in which we prepare 21st-century musicians by cultivating the creative and imaginative powers that reside at the heart of the artist-entrepreneur.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MUS 580. Seminars in the Music of the Great Composers** **3 Units**
Term Typically Offered: Fall, Spring
Prerequisite(s): For masters students or for advanced undergraduates admitted by permission of the instructor and with the recommendation of the undergraduate advisor.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MUS 582. Seminar in Historical Performance Practice** **3 Units**
Term Typically Offered: Occasionally Offered
Prerequisite(s): Graduate standing or faculty consent.
Description: Study and application of performance techniques from different eras based on period sources and modern study.
Note: Knowledge of one foreign language helpful, but not required.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

<p>MUS 583. Notation and Analysis 3 Units Term Typically Offered: Occasionally Offered Prerequisite(s): Permission of instructor. Description: Paleography, transcription and editing of musical manuscripts and publications through the Renaissance. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MUS 591. Special Topics 1-3 Units Term Typically Offered: Fall, Spring Prerequisite(s): Permission of instructor. Description: One or more advanced topics not treated comprehensively in regular course offerings. To understand why different interpretations of a musical piece are chosen and help student acquire tools to be an independent musician. Note: May be repeated for credit when topics vary. Note: Credit not allowed for both MUS 591 and MUS 691 on the same topic.</p>
<p>MUS 585. Seminars in the History of Forms, Media, Philosophy, or Techniques of Composition 3 Units Term Typically Offered: Fall, Spring Prerequisite(s): For master's students or for advanced undergraduates admitted by permission of the instructor and with the recommendation of the undergraduate advisor. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MUS 586. Composition for Digital Media I 2 Units Term Typically Offered: Fall, Spring Prerequisite(s): MUS 567, MUS 568, and upper division standing in the School of Music. Description: Focus on advanced techniques, theory, and practices of computer-generated/assisted music composition. Note: Credit not allowed for both MUS 586 and MUS 683. Note: Crosslisted with MUS 683.</p>	<p>MUS 592. Suzuki Violin Teacher Training 3 Units Term Typically Offered: Fall, Spring Prerequisite(s): Violin students playing at a minimum level of Seitz Concerto No. 3. An understanding of and training in the Suzuki approach to violin instruction. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p> <p>MUS 587. Composition for Digital Media II 2 Units Term Typically Offered: Fall, Spring Prerequisite(s): MUS 567, MUS 568, and MUS 586; upper-division standing in the School of Music. Description: Continuation of topics studied in MUS 586. Note: Cross-listed with MUS 684. Note: Credit not allowed for both MUS 587 and MUS 684.</p>	<p>MUS 593. Perspectives and Practices of Ethno/musicology 1 Unit Term Typically Offered: Fall Only Prerequisite(s): Acceptance into the degree program for the BMus or MMus in Music History, or permission by instructor. Description: Investigation of the concepts, methods, and materials of the discipline of Music History/Musicology/Ethnomusicology. Students will become familiar with recent scholarship, professional organizations, pedagogy, technology, and other topics. Note: Cross-listed with MUS 693.</p>
<p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p> <p>MUS 590. Independent Study 0.5-3 Units Term Typically Offered: Fall, Spring Description: Students may take no more than 6 hours of Independent Study in fulfilling requirements for any degree. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p> <p>MUS 597. Recital 0 Units Term Typically Offered: Fall, Spring Description: A grade of "CR" credit will be given when the recital is complete. A student must be simultaneously enrolled in at least one applied music course. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
	<p>MUS 600. Graduate Oral Exam Preparation 0 Units Grading Basis: Credit/No Credit Term Typically Offered: Fall, Spring Description: Prepares students for Graduate Oral Exam. Consists of oral dry-runs and access to on-line audio files of winning Grawemeyer Award compositions. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>

MUS 601. Applied Music Term Typically Offered: Fall, Spring Prerequisite(s): Faculty consent. Fee: An additional \$400.00 is charged for this course. Fee is charged for non-music majors only. Description: Courses MUS 601, MUS 602, MUS 603, and MUS 604 open only to music majors for work and study on the student's major or principal instrument. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	2 Units	MUS 611. Applied Music Term Typically Offered: Fall, Spring Prerequisite(s): Faculty consent. Description: Courses MUS 611, MUS 612, MUS 613, and MUS 614 open only to music majors for work and study on the student's major or principal instrument. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	2 Units
MUS 602. Applied Music Term Typically Offered: Fall, Spring Prerequisite(s): Faculty consent. Description: Courses MUS 601, MUS 602, MUS 603, and MUS 604 open only to music majors for work and study on the student's major or principal instrument. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	2 Units	MUS 612. Applied Music Term Typically Offered: Fall, Spring Prerequisite(s): Faculty consent. Description: Courses MUS 611, MUS 612, MUS 613, and MUS 614 open only to music majors for work and study on the student's major or principal instrument. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	2 Units
MUS 603. Applied Music Term Typically Offered: Fall, Spring Prerequisite(s): Faculty consent. Description: Courses MUS 601, MUS 602, MUS 603, and MUS 604 open only to music majors for work and study on the student's major or principal instrument. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	4 Units	MUS 613. Applied Music Term Typically Offered: Fall, Spring Prerequisite(s): Faculty consent. Description: Courses MUS 611, MUS 612, MUS 613, and MUS 614 open only to music majors for work and study on the student's major or principal instrument. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	4 Units
MUS 604. Applied Music Term Typically Offered: Fall, Spring Prerequisite(s): Faculty consent. Description: Courses MUS 601, MUS 602, MUS 603, and MUS 604 open only to music majors for work and study on the student's major or principal instrument. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	4 Units	MUS 614. Applied Music Term Typically Offered: Fall, Spring Prerequisite(s): Faculty consent. Description: Courses MUS 611, MUS 612, MUS 613, and MUS 614 open only to music majors for work and study on the student's major or principal instrument. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	4 Units
MUS 605. Jazz Applied Term Typically Offered: Fall, Spring Prerequisite(s): Admission to Master of Music Degree in Jazz. Description: Applied instrumental study for jazz students. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	2 Units	MUS 615. Jazz Applied Term Typically Offered: Fall, Spring Prerequisite(s): MUS 605 and MUS 606. Description: Applied instrumental study for jazz students. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	2 Units
MUS 606. Jazz Applied Term Typically Offered: Fall, Spring Prerequisite(s): MUS 605. Description: Applied instrumental study for jazz students. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	2 Units	MUS 616. Jazz Applied Term Typically Offered: Fall, Spring Prerequisite(s): MUS 605, MUS 606, and MUS 615. Description: Applied instrumental study for jazz students. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	2 Units
MUS 607. Bibliography and Research Methods Term Typically Offered: Fall, Spring Description: Equips students with specialized bibliographical and methodological knowledge to conduct musical research. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	3 Units	MUS 621. Applied Music Term Typically Offered: Fall, Spring Prerequisite(s): Faculty consent. Description: Open only to music majors for work and study on the student's major or principal instrument. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	2 Units

<p>MUS 622. Applied Music Term Typically Offered: Fall, Spring Prerequisite(s): Faculty consent. Description: Open only to music majors for work and study on the student's major or principal instrument. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>2 Units</p>	<p>MUS 640. Advanced Vocal Pedagogy Term Typically Offered: Spring Only Prerequisite(s): MUS 571 and graduate standing. Description: Provides the advanced voice student the opportunity to study the principles and techniques involved in teaching voice, with supervised practice teaching. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>2 Units</p>
<p>MUS 623. Applied Music Term Typically Offered: Fall, Spring Prerequisite(s): Faculty consent. Description: Open only to music majors for work and study on the student's major or principal instrument. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>4 Units</p>	<p>MUS 641. Pedagogy of Theory I Term Typically Offered: Fall, Spring Description: An analysis and discussion of the various methods of teaching the elements of music theory, including a survey of available textbooks and supplementary materials and an exploration of the scholarship of theory pedagogy. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>
<p>MUS 624. Applied Music Term Typically Offered: Fall, Spring Prerequisite(s): Faculty consent. Description: Open only to music majors for work and study on the student's major or principal instrument. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>4 Units</p>	<p>MUS 642. Pedagogy of Theory II Term Typically Offered: Fall, Spring Description: An analysis and discussion of the various methods of teaching the elements of music theory, including a survey of available textbooks and supplementary materials. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>2 Units</p>
<p>MUS 627. Advanced Elementary Music Methods Term Typically Offered: Fall, Spring Description: Advanced work in study of elementary music methods. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>2 Units</p>	<p>MUS 643. Advanced Private Instruction in Composition and Orchestration I Term Typically Offered: Fall, Spring Description: Principles and techniques for advanced composition students. One hour private lesson. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>
<p>MUS 631. Advanced Methods of Teaching Brass Instruments Term Typically Offered: Fall, Spring Description: Problems in teaching brass instruments in the public schools. Research in methods and materials. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>2 Units</p>	<p>MUS 644. Advanced Composition and Orchestration II Term Typically Offered: Fall, Spring Description: Principles and techniques for advanced composition students. One hour private lesson. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>
<p>MUS 633. Advanced Methods of Teaching Woodwind Instruments Term Typically Offered: Fall, Spring Description: Advanced techniques for teaching woodwind instruments. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>2 Units</p>	<p>MUS 645. Advanced Composition and Orchestration III Term Typically Offered: Fall, Spring Description: Principles and techniques for advanced composition students. One hour private lesson. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>
<p>MUS 637. Advanced Secondary Music Methods Term Typically Offered: Fall, Spring Description: Improves sightreading and sightsinging and the teaching of pitch and rhythm. Also covers techniques for designing curricular materials and recruiting and retaining students. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>2 Units</p>	<p>MUS 646. Advanced Composition and Orchestration IV Term Typically Offered: Fall, Spring Description: Principles and techniques for advanced composition students. One hour private lesson. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>
<p>MUS 638. Organization and Administration of Instrumental Groups Term Typically Offered: Occasionally Offered Description: Organizing, financing, and promoting the instrumental program. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>2 Units</p>		

- MUS 647. Advanced Chromatic Harmony and Analysis** 3 Units
Term Typically Offered: Fall, Spring
Description: Chromatic harmony and voice leading in the context of expanded tonality and extended tonal forms; analytical approaches to the music of the late 19th and early 20th century.
Note: Credit not allowed for both MUS 547 and MUS 647.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MUS 648. Advanced Post-Tonal Theory and Analysis** 3 Units
Term Typically Offered: Fall, Spring
Description: Study of post-tonal theory and analytical methodology. Analysis of centric, atonal, serial, and other music composed since 1900.
Note: Credit not allowed for both MUS 548 and MUS 648.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MUS 649. Advanced Counterpoint I** 2 Units
Term Typically Offered: Fall Only
Prerequisite(s): MUS 550.
Description: A continuation of the prerequisite counterpoint courses but for the advanced student in the field.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MUS 650. Advanced Counterpoint II** 2 Units
Term Typically Offered: Spring Only
Prerequisite(s): MUS 550.
Description: A continuation of the prerequisite counterpoint courses but for the advanced student in the field.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MUS 651. Schenkerian Analysis** 3 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): Graduate standing.
Description: The graphic analytic techniques developed by Heinrich Schenker and the theoretical constructs on which they are based.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MUS 652. Foundations of Music Theory** 3 Units
Term Typically Offered: Fall, Spring
Description: A study of selected theoretical writings from the Middle Ages and Renaissance as related to Gregorian Chant and the development of Polyphony.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MUS 653. Advanced Analysis** 3 Units
Term Typically Offered: Fall, Spring
Description: Development of the aural and visual comprehension of the elements contributing to style and cohesion in music. May cover diverse historical periods of focus on one period.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MUS 654. Advanced Jazz Compositional Theory** 2 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): MUS 539-02 or permission of instructor.
Description: Applied compositional study for jazz students focusing on contemporary jazz composition with an emphasis on modal harmonic structure.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MUS 655. Advanced Jazz Improvisation** 2 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): Completion of Jazz Theory, MUS 138, and at least 4 semesters of Combo or 4 semesters of Jazz Ensemble, or permission of instructor.
Description: Understanding jazz improvisation through the study of harmony, theory, improvisation, ear training, transcribed solos, articulation, the various song forms/types, basic piano composing and melodic composition.
Note: 1 lecture, 1 lab.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MUS 656. Advanced Jazz Arranging I** 2 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): MUS 435 and MUS 436 or permission of instructor.
Description: Focus on arranging and orchestrating for the contemporary jazz orchestra.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MUS 657. Film/TV Scoring** 2 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): MUS 435 and MUS 436 or permission of instructor.
Description: Overview of film scoring techniques from inception of the art to the present. May also explore contemporary media (internet, video games).
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MUS 658. Advanced Jazz Arranging II** 2 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): MUS 435 or consent of instructor.
Description: Continuation of MUS 656; continue focus on arranging and orchestrating for the contemporary jazz orchestra as well as studio and hybrid orchestra instrumentations.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

<p>MUS 659. Seminar in Conducting I 2 Units Term Typically Offered: Fall Only Description: Advanced conducting techniques as they apply to choral and instrumental ensembles. Literature to be studied drawn from masterworks of every age. Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MUS 667. Introduction to Electronic and Computer Music 2 Units Term Typically Offered: Fall, Spring Prerequisite(s): Must have experience in music composition. Description: Introduction to the computer music studio including MIDI sequencing, analog and FM sound synthesis, digital recording and editing, video synchronization, multimedia applications, and comprehensive study of the literature and styles of the class tape studios. Note: Crosslisted with MUS 567. Note: Credit not allowed for both MUS 567 and MUS 667.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MUS 660. Seminar in Conducting II 2 Units Term Typically Offered: Spring Only Description: Advanced conducting techniques as they apply to choral and instrumental ensembles. Literature to be studied drawn from masterworks of every age. Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MUS 668. Advanced Topics in Computer Music 2 Units Term Typically Offered: Fall, Spring Prerequisite(s): MUS 567. Description: Study of advanced synthesis techniques, digital sampling, direct digital synthesis, and study of recent literature and trends in computer music. Note: Crosslisted with MUS 568. Note: Credit not allowed for both MUS 568 and MUS 668.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MUS 661. Literature 2 Units Term Typically Offered: Fall, Spring Prerequisite(s): Graduate students only. Description: To provide overview of solo vocal repertoire in the genre of Oratorio.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MUS 669. Graduate Composition Seminar 0 Units Grading Basis: Pass/Fail Term Typically Offered: Fall, Spring Corequisite(s): MUS 543, MUS 544, MUS 643, MUS 644, MUS 645, MUS 646 or MUS 695. Description: Examination of broad range of issues surrounding contemporary music composition. Topics include current composers and their works, particularly winners of and nominees for Grawemeyer Award, score presentation and part extraction, performing rights, and career development.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MUS 662. Literature 2 Units Term Typically Offered: Fall, Spring Prerequisite(s): Graduate students only. Description: To provide overview of solo vocal repertoire in the genre of solo voice with orchestra.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MUS 670. Studies in Music History 3 Units Term Typically Offered: Fall, Spring Description: Areas of study are Medieval Music, Renaissance Music, Baroque Music, Viennese Classicism, Romantic Music, Twentieth-Century Music.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MUS 663. Graduate Band Pedagogy and Educational Wind Band Literature 2 Units Term Typically Offered: Fall, Spring Description: Advanced analytical techniques related to repertoire assessment, focusing primarily on concert band and vocal ensemble music representing difficulty levels 2-4.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MUS 671. Advanced Piano Pedagogy I 2 Units Term Typically Offered: Fall Only Description: Examination, evaluation, and discussion of piano teaching materials at the elementary level, with supervised practical studio teaching experience.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MUS 665. Music Theory Seminar 0 Units Grading Basis: Pass/Fail Term Typically Offered: Fall, Spring Corequisite(s): MUS 694 or MUS 695. Description: Survey current articles, prepare & discuss analyses, and survey current activities & practices in music theory.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	

<p>MUS 672. Advanced Piano Pedagogy II 2 Units Term Typically Offered: Spring Only Description: Examination, evaluation, and discussion of piano teaching materials at the intermediate level, with supervised practical teaching experience. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MUS 680. Seminars in the Music of Great Composers 3 Units Term Typically Offered: Fall, Spring Description: Composer focus varies. Note: This course may be repeated under different subtitles. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MUS 673. Advanced Piano Pedagogy III 2 Units Term Typically Offered: Fall Only Description: Examination, evaluation, and discussion of adult and group teaching techniques, with supervised practical studio teaching experience. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MUS 681. Music Notation to c. 1550: History, Transcription, Editing 3 Units Term Typically Offered: Fall, Spring Description: A study of notation in western music to c. 1550 including origins and development of western musical notation, transcription into modern notation, editing. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MUS 674. Advanced Piano Pedagogy IV 2 Units Term Typically Offered: Spring Only Description: Discussion of advanced pedagogy teaching techniques, with supervised practical studio teaching experience. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MUS 682. Seminar in Musicology 3 Units Term Typically Offered: Fall, Spring Description: Seminar in specialist areas of musicology, such as editing and transcriptions. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MUS 675. Master's Practice in Collegiate Teaching 1 Unit Term Typically Offered: Occasionally Offered Description: Experience under the guidance of faculty members in classroom techniques and practices of collegiate teaching. TBA seminars in professional problems. For master's degree students in music history. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MUS 683. Composition for Digital Media I 2 Units Term Typically Offered: Fall, Spring Prerequisite(s): MUS 667 and MUS 668. Description: Focus on an advanced aspect of computer music. Note: Credit not allowed for both MUS 586 and MUS 683. Note: Crosslisted with MUS 586. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MUS 676. Master's Practice in Collegiate Teaching 1 Unit Term Typically Offered: Occasionally Offered Description: Experience under the guidance of faculty members in classroom techniques and practices of collegiate teaching. TBA seminars in professional problems. For master's degree students in music history. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MUS 684. Composition for Digital Media II 2 Units Term Typically Offered: Fall, Spring Prerequisite(s): MUS 667, MUS 668, and MUS 683. Description: Continuation of MUS 683. Note: Credit not allowed for both MUS 587 and MUS 684. Note: Crosslisted with MUS 587. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MUS 677. Business Aspects of String Studio Teaching 2 Units Term Typically Offered: Fall, Spring Prerequisite(s): Graduate standing. Description: Acquaints students with all aspects of running a successful independent string studio. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MUS 685. Composition for Digital Media III 2 Units Term Typically Offered: Fall, Spring Prerequisite(s): MUS 667, MUS 668, MUS 683, and MUS 684. Description: Focus on an advanced aspect of computer music. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>MUS 678. Advanced Pedagogy 2 Units Term Typically Offered: Fall, Spring Prerequisite(s): MUS 538 or permission of instructor. Description: Develops skills to teach intermediate to advanced string instruments in a private lesson setting. Sections will be opened for individual instruments. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>MUS 686. Orchestral Literature I 2 Units Term Typically Offered: Fall, Spring Prerequisite(s): Permission of instructor. Description: Covers standard orchestral repertoire from the early classical period through the early romantic period. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>

<p>MUS 687. Orchestral Literature II Term Typically Offered: Fall, Spring Prerequisite(s): Permission of instructor. Description: Covers standard orchestral repertoire from the mid-romantic period through the twentieth century. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>2 Units</p>	<p>MUS 694. Research Term Typically Offered: Fall, Spring Description: Subtitles may accompany the course title to indicate the area of research. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>1-12 Units</p>
<p>MUS 688. Applied Acoustic Composition Term Typically Offered: Fall, Spring Description: Acoustic principles and techniques for advanced electronic composition students. One hour private lesson. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>2 Units</p>	<p>MUS 695. Thesis Guidance Term Typically Offered: Fall, Spring Prerequisite(s): Master's candidates in music education, music theory-composition, and music history. Corequisite(s): MUS 669 for composition students, MUS 665 for theory students. Description: Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.</p>	<p>2-4 Units</p>
<p>MUS 689. Advanced Electronic Composition Term Typically Offered: Fall, Spring Prerequisite(s): MUS 688. Description: Principles and techniques for advanced composition students. One hour private lesson. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>2 Units</p>	<p>MUS 697. Graduate Recital Grading Basis: Credit/No Credit Term Typically Offered: Fall, Spring Fee: An additional \$35.00 is charged for this course. Description: Culminating graduate recital. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>0 Units</p>
<p>MUS 690. Independent Study Term Typically Offered: Fall, Spring Description: Opportunity for the student, under the supervision of a sponsoring faculty member, to pursue individualized study related to research or practice that is not included in regular courses in the curriculum. Note: A maximum of 6 credit hours of independent study at the master's level (9 hours at doctoral level) may be taken to fulfill requirements of any music degree.</p>	<p>0.5-3 Units</p>	<p>MUS 698. Professional Paper Grading Basis: Pass/Fail Term Typically Offered: Fall, Spring Prerequisite(s): Master of Music Education students only. Description: Culmination of music education research project. Journal-length scholarly work of publishable quality and length using primary and secondary sources. Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.</p>	<p>0 Units</p>
<p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>		<p>MUS 700. Dissertation Research Term Typically Offered: Not Offered Prerequisite(s): Consent of major professor. Description: Research on dissertation project. Grade shall be deferred by the major professor until dissertation submitted for final defense by the student's committee. This course represents the fields of specialization of the graduate faculty. Note: This 700-level course is for students enrolled in the doctoral program.</p>	<p>1-9 Units</p>
<p>MUS 691. Special Topics Term Typically Offered: Fall, Spring Description: One or more advanced topics not treated comprehensively in regular course offerings. Note: May be repeated for credit when topics vary. Note: Credit may not be allowed for both MUS 591 and MUS 691 on the same topic.</p>	<p>1-3 Units</p>	<p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	
<p>MUS 693. Perspectives and Practices of Ethno/musicology Term Typically Offered: Fall Only Prerequisite(s): Acceptance into the degree program for the BMus or MMus in Music History, or permission by instructor. Description: Investigation of the concepts, methods, and materials of the discipline of Music History/Musicology/Ethnomusicology. Students will become familiar with recent scholarship, professional organizations, pedagogy, technology, and other topics. Note: Cross-listed with MUS 593.</p>	<p>1 Unit</p>	<p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	
<p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>		<p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	

MUS 775. Doctoral Practice in Collegiate Teaching 1 Unit**Term Typically Offered:** Not Offered**Description:** Guidance by members of the faculty for doctoral teaching assistants. TBA seminars in the professional problems of collegiate teaching.**Note:** Only MUS 775 is offered at the University of Louisville; MUS 776 is offered at the University of Kentucky.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Music Education (MUED)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

MUED 505. Introduction to Orff Schulwerk: Music & Movement Education 2 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** Graduate standing, admittance to Teacher Education, upper-division status in Music Therapy, or permission of instructor.**Description:** Students will experience and learn fundamental elements of Orff Pedagogy-Music and Movement education.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**MUED 516. Music and Movement in Early Childhood 2 Units****Term Typically Offered:** Occasionally Offered**Prerequisite(s):** Permission of instructor.**Description:** Methods, materials, and philosophic rationales for caregivers, therapists, and teachers in pre-school, daycare, and primary grade settings to develop early childhood music and movement programs.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**MUED 520. Student Teaching Elementary School - CUE 5 Units****Term Typically Offered:** Fall, Spring**Prerequisite(s):** MUED 556, 2.75 overall GPA, admission to Teacher Education.**Corequisite(s):** MUED 533 and MUED 534.**Description:** Experience in the classroom and in the total school program in observation and supervised teaching at the elementary level.**Course Attribute(s):** CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status., CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**MUED 533. Human Interaction/Professional Growth 2 Units****Term Typically Offered:** Fall, Spring**Prerequisite(s):** Admission to Teacher Education; MUS 228 and MUED 556.**Corequisite(s):** MUED 520 and 534.**Description:** For student teacher to apply field experience to a professional philosophy while reflecting on career goals common to K.D.E. and MENC content standards of music education.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**MUED 534. Student Teaching Secondary - CUE 5 Units****Term Typically Offered:** Fall, Spring**Prerequisite(s):** MUS 228, MUED 556, 2.75 GPA, admission to Teacher Education, and completion of 24 hours of teaching major is required.**Corequisite(s):** MUED 520 and MUED 533.**Description:** Provides supervised observation, participation, and teaching.**Course Attribute(s):** CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status., CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MUED 556. Special Methods in Secondary Teaching 2 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** Admission to teacher education and MUS 228.**Fee:** An additional \$10.00 is charged for this course.**Description:** Course addresses the teaching of instrumental and/or vocal music in the elementary and secondary schools.**Note:** Taken prior to MUED 520, MUED 533, and MUED 534.**Note:** No student may receive credit for both MUED 556 and MUED 605 or MUED 606.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MUED 605. Pre-Student Teaching: Orientation and General Methods (Vocal) 3 Units**Term Typically Offered:** Fall Only**Prerequisite(s):** Admission to MAT and Music Professional Year Teacher Education Program.**Description:** A study of methods, materials, rehearsal techniques, and classroom and program management techniques appropriate to the major teaching field of the prospective secondary teacher.**Note:** Students are strongly encouraged to take MUED 605 prior to Student Teaching.**Note:** No student may receive credit for both MUED 556 and MUED 605.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MUED 606. Pre-Student Teaching: Orientation and General Methods (Instrumental) 3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** Admission to MAT and Music Professional Year Teacher Education Program.**Description:** A study of materials, rehearsal techniques, and classroom and program management techniques appropriate to the major teaching field of the prospective secondary teacher.**Note:** No student may receive credit for both MUED 556 and MUED 605.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MUED 607. Student Teaching Seminar I 3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** Admission to MAT and Music Professional Year Teacher Education Program.**Description:** Emphasis on multicultural and multiethnic music and the teaching of the same.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MUED 608. Student Teaching Seminar II 2 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** Admission to MAT and Music Professional Year Teacher Education Program.**Description:** Extension of MUED 607 to include electronic portfolio and advanced studies in applying music education best practices for teaching.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MUED 609. Capstone Seminar 3 Units**Term Typically Offered:** Fall, Spring**Prerequisite(s):** Successful student teaching and all other course work for the MAT degree with a music education emphasis, final semester of student teaching, or permission of instructor.**Description:** Present professional portfolios, investigate current issues impacting the lives of students with and without disabilities, and assemble resources to further career goals.**Note:** Fulfills the exit requirements for the MAT degree with a music education emphasis.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MUED 610. Music Student Teaching in the Elementary/Secondary Schools I 6 Units**Term Typically Offered:** Fall Only**Prerequisite(s):** Admission to teacher education program, MAT, and SIGS.**Description:** Provides supervised observation, participation and teaching.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MUED 611. Music Student Teaching in the Elementary/Secondary Schools II 6 Units**Term Typically Offered:** Spring Only**Prerequisite(s):** Admission to teacher education program, MAT, and SIGS.**Description:** Provides supervised observation, participation and teaching.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MUED 628. Qualitative Research Methods 2 Units**Term Typically Offered:** Spring Only**Description:** Qualitative research methods and designs for music educators. Topics may include teaching and learning standards, ethnography, case studies, and assessing diverse student populations.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MUED 629. Foundations of Music Education 2 Units**Term Typically Offered:** Fall Only**Description:** Designed to survey major topics in the areas of history, sociology, psychology, and music education.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MUED 630. Quantitative Research Methods & Materials in Music Education 2 Units**Term Typically Offered:** Fall Only**Description:** Quantitative research analysis methods for music educators. Applications include evaluating achievement & aptitude as related to test analysis, research design, statistical analysis, & research paradigms.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MUED 639. Learning Theories in Music Education 2 Units**Term Typically Offered:** Spring Only**Description:** Current trends and theories of music learning and related topics in music education. Applications, interpretations, and adaptations of these materials will be addressed.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Nursing (NURS)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

NURS 500. Variables Impacting Health Care Delivery: A Global Context 3 Units**Description:** Disparities in international health care delivery and the contributing variables will be explored. Culture-specific content is based on the country of study and is delivered by the interdisciplinary faculty.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

NURS 501. Pathophysiology 4 Units**Prerequisite(s):** Department Permission.**Description:** This course emphasizes the synthesis of preexisting knowledge of normal physiology to understand pathophysiological processes common among individuals and populations across the lifespan.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

<p>NURS 502. Pharmacology Prerequisite(s): Department Permission. Description: This course is designed to provide nursing students with a sound basis for the clinical application of pharmacology. The basics of core drug knowledge, including pharmacotherapeutics, pharmacodynamics, and pharmacokinetics are covered. Emphasis is placed on learning drug classifications by clinical indication or body system with advanced understanding of potential drug interactions, pharmacogenetics and pharmacoconomics. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>	<p>NURS 510. Advanced Pathophysiology and Pharmacology Application I 2 Units Term Typically Offered: Fall Only Prerequisite(s): Admission to MEPN Program. Fee: An additional \$100.00 is charged for this course. Description: This course emphasizes the application of pre-existing knowledge of pathophysiological processes and pharmacology management in pediatric and maternal health. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>NURS 503. Advanced Health Assessment Term Typically Offered: Summer Only Prerequisite(s): Admission to MEPN program. Fee: An additional \$150.00 is charged for this course. Description: Focus is placed on the assessment component of the nursing process as a foundation of professional nursing practice. A systematic approach to client interview and physical exam techniques across the lifespan (neonate to geriatric) is emphasized. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>	<p>NURS 511. Advanced Pathophysiology and Pharmacology Application II 2 Units Term Typically Offered: Fall Only Prerequisite(s): NURS 510. Fee: An additional \$100.00 is charged for this course. Description: This course emphasizes the application of preexisting knowledge of pathophysiological processes and pharmacology management in adult health. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>NURS 504. Leadership & Health Care Policy Term Typically Offered: Spring Only Prerequisite(s): Admission to MEPN Program. Fee: An additional \$100.00 is charged for this course. Description: This course is designed to provide the student with theoretical principles and skills needed for leadership and professional role development within complex healthcare systems. The role of the nurse as leader and advocate in health policy at the local, state, regional, national and global level is emphasized. Students will analyze and evaluate how policy influences healthcare delivery in the context of stakeholders, politics and economics. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>2 Units</p>	<p>NURS 515. Research Scholar Program 1-3 Units Term Typically Offered: Fall, Spring, Summer Prerequisite(s): Admission to traditional baccalaureate program or MEPN program. Description: To promote nursing research and scholarship among students through faculty mentoring. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>NURS 506. Leadership/EBP/Policy Prerequisite(s): NURS 408 and NURS 608. Description: This practicum will require students to formulate a leadership/management, policy or evidence-based project based on the assessed needs of their clinical site. With approval from their clinical preceptor and their instructor, students will apply knowledge and skills acquired in their master's course work in the completion of the project and the presentation of outcomes/findings. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>2 Units</p>	<p>NURS 575. Introduction to Forensic Nursing 2 Units Prerequisite(s): Must be admitted to the upper division undergraduate nursing program or graduate nursing program. Description: An elective course to introduce the students to the role of the forensic nurse. This experimental course covers forensic principles as they relate to the living and field experiences are integrated. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>NURS 507. Transitions to Practice Term Typically Offered: Spring Only Prerequisite(s): Admission to MEPN Program, NURS 408. Fee: An additional \$100.00 is charged for this course. Description: This course will assist students to make the transition to professional nursing practice. Students will learn about current legislative and practice issues, discuss legal aspects of nursing practice and prepare for the licensure process. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>2 Units</p>	<p>NURS 600. Genetics 2 Units Description: This course will integrate clinical applications of genomics including current ethical, legal and social issues and emphasize the responsibility of the advanced practical nurse. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>NURS 601. Primary Care I Prerequisite(s): NURS 605, NURS 655, and NURS 611. Corequisite(s): NURS 657. Description: This course is an introduction to primary care of the adolescent and adult. Emphasis is placed on health promotion, problem identification, and management of common health problems. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>	<p>NURS 601. Primary Care I 3 Units Prerequisite(s): NURS 605, NURS 655, and NURS 611. Corequisite(s): NURS 657. Description: This course is an introduction to primary care of the adolescent and adult. Emphasis is placed on health promotion, problem identification, and management of common health problems. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>

- NURS 602. Primary Care II** **3 Units**
Prerequisite(s): NURS 601.
Description: This course provides an in-depth analysis of primary care of the adolescent and adult. Emphasis is on differentiating signs and symptoms, formulating diagnoses, and developing culturally competent plans of care.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 603. Family Health** **1 Unit**
Prerequisite(s): NURS 600, NURS 605, NURS 611, NURS 651, NURS 655, NURS 656, and NURS 657.
Description: This course provides a foundation in family health concepts and family assessment for advanced practice nurses.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 604. Transition to Practice** **2 Units**
Prerequisite(s): Matriculation to specialty-specific clinical track course.
Description: This course will assist completing students to make an easier transition to practice as advanced practice nurses. Students will focus on portfolio development, preparation for certification, and legislative/practice issues.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 605. Theoretical Application for Practice** **3 Units**
Description: This course explores the congruence of conceptual frameworks and theories from nursing and other disciplines and their use in clinical practice, education, research and administration. Leadership, quality improvement, translational science and organizational sciences for the continual improvement of nursing care of diverse populations are examined.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 606. Healthcare Systems** **3 Units**
Description: The U.S. healthcare system evolution, services, policy, and delivery are examined and compared politically, ethically, technologically, environmentally, and socioeconomically. Availability, access, regulation, and accountability are considered using systems theory.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 607. Foundational Concepts of Evidence Based Practice** **3 Units**
Fee: An additional \$150.00 is charged for this course.
Description: This course introduces the student to evidence based practice models and research design and methods. Students will learn the process of critically evaluating the literature for evidence based practice.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 608. Health Care Systems and Microsystem Analysis** **3 Units**
Term Typically Offered: Fall Only
Prerequisite(s): Admission to MEPN Program.
Fee: An additional \$150.00 is charged for this course.
Description: This foundational course will prepare the student nurse in advanced practice to effectively navigate complex health care systems. This course focuses on principles of systems theory, micro- and macro-economics, microsystem analyses, information management, models of service delivery, and strategies for effective interprofessional collaboration.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 609. Research Design and Professional Writing** **3 Units**
Prerequisite(s): Admission to the MSN program or consent of Instructor.
Description: This course is an overview of nursing research using multiple designs and methods. Ethical issues, data management and analysis of findings are included. Instruction in scientific writing is integrated.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 610. Nurse Educator Clinical/Practicum** **2 Units**
Grading Basis: Pass/Fail
Prerequisite(s): NURS 605 and NURS 652; NURS 657 (or concurrent), ELFH 661 (or concurrent), and ELFH 683 (or concurrent).
Description: This course is designed so that students gain clinical expertise with a population of interest and apply that knowledge to the nurse educator role. The integration of evidence based nursing practice and educational concepts in the clinical and classroom settings is emphasized.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 611. Graduate Pharmacology for Advanced Practice Nurses** **3 Units**
Prerequisite(s): Entrance to the Graduate Program in the School of Nursing.
Description: This course will provide the nurse practitioner student with a sound basis for clinical application of pharmacology. Emphasis is placed on learning drug classifications by clinical indication or body symptoms.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 612. Philosophy of Science** **3 Units**
Prerequisite(s): Enrollment in the doctoral program.
Description: Overview and critical analysis of science as a way of knowing, including epistemological and ontological implications of differing approaches to knowledge generation.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 613. Introduction to Health Care Policy** **3 Units**
Description: This course provides the student with the understanding of the role of the nurse as leader and advocate in health policy at the local, state, regional, national and global level. Students will analyze and evaluate how policy influences health care delivery in the context of stakeholders, politics and economics.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- NURS 615. Advanced Clinical Practice: Women's Health Nurse Practitioner, Clinical I** 2 Units
Prerequisite(s): NURS 660 and NURS 661.
Corequisite(s): NURS 602, NURS 604, NURS 616, and NURS 619.
Fee: An additional \$200.00 is charged for this course.
Description: This clinical course places an emphasis on the role of the advanced practice nurse as a member of the health care team across a variety of obstetric and gynecological settings. The clinical experience focuses on comprehensive patient assessment, diagnosis and management of acute health problems for women and their families. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 616. Women's Health Nurse Practitioner I** 3 Units
Prerequisite(s): NURS 601, NURS 660, and NURS 661.
Corequisite(s): NURS 602, NURS 604, NURS 615, and NURS 619.
Description: This is the first in a series of four courses (two didactic; two clinical) which assist students to develop the role of the Women's Health Nurse Practitioner. The focus of the initial course is on the health and well being of girls and women across the life-span. It emphasizes the application of concepts, principles and skills needed to provide care for common, well-defined obstetric and gynecologic health processes and problems of adolescents and adults frequently encountered by Women's Health Nurse Practitioners. The focus of this course is identifying between normal and abnormal, and in making beginning differential diagnoses. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 617. Advanced Clinical Practice: Women's Health Nurse Practitioner (WHNP), Clinical II** 1 Unit
Prerequisite(s): NURS 604, NURS 615, NURS 616, and NURS 619.
Corequisite(s): NURS 618.
Description: This clinical course places an emphasis on the role of the advanced practice nurse as a member of the health care team in obstetric settings. The clinical experience focuses on comprehensive patient assessment, diagnosis and management of obstetric health problems for women and their families. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 618. Women's Health Nurse Practitioner II** 4 Units
Prerequisite(s): NURS 604, NURS 615, and NURS 616.
Corequisite(s): NURS 617.
Description: This is the second in a series of four courses (two didactic; two clinical) which assist students to develop the role of Women's Health Nurse Practitioner. The focus of this course is on the diagnosis and management of complex health issues affecting multicultural women across the life-span. It emphasizes the application of concepts, principles and skills needed to provide care for more complex obstetric and gynecologic health processes and problems of adolescents and adults frequently encountered by Women's Health Nurse Practitioners (WHNP's). The focus of this course is developing differential diagnoses for abnormal conditions, recognizing those issues within the scope of practice for WHNP's, and when referral to other health care providers is warranted. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 619. Advanced Skills Laboratory: Women's Health Nurse Practitioner** 1 Unit
Prerequisite(s): NURS 602, NURS 660, and NURS 661.
Corequisite(s): NURS 604, NURS 615, and NURS 616.
Description: This laboratory course places an emphasis on advanced psychomotor skills used by Women's Health Nurse Practitioners across a variety of obstetric and gynecologic settings. These skills are learned and practiced in the classroom setting before application in the clinical setting. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 620. Theory for Evidence Based Practice** 2 Units
Term Typically Offered: Fall Only
Prerequisite(s): Admission to MEPN Program.
Fee: An additional \$100.00 is charged for this course.
Description: This course explores the congruence of conceptual framework and theories from nursing and other disciplines and their use in clinical practice, education, research, and administration. Leadership, quality improvement, translational science, and organizational sciences for the continual improvement of nursing care of diverse populations are examined. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 621. Research and Evidence Based Practice** 2 Units
Term Typically Offered: Spring Only
Prerequisite(s): Admission to the MEPN Program.
Fee: An additional \$100.00 is charged for this course.
Description: This course assists the student to critically evaluate evidence for advanced nursing practice. Students will use research theory and process to critique. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 622. Advanced Clinical Practice: Adult Clinical Nurse Specialist I** 6 Units
Prerequisite(s): NURS 600, NURS 605, NURS 611, NURS 651, NURS 655, NURS 657.
Corequisite(s): NURS 653.
Fee: An additional \$200.00 is charged for this course.
Description: Explores the theoretical and practice applications of the Adult CNS in a variety of settings. The clinical practicum is designed by faculty and students to promote CNS competencies in the sphere of influence; patient/client. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 623. Advanced Clinical Practice: Adult Clinical Nurse Specialist II** 7 Units
Prerequisite(s): NURS 622.
Description: Explores the theoretical and practical applications of the Adult CNS in a variety of clinical settings. The clinical practicum is designed by faculty and students to promote CNS competencies in the spheres of influence: nursing personnel and organization/network. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

NURS 624. Advanced Clinical Practice: Adult-Gerontology Primary Care Nurse Practitioner I 3 Units**Prerequisite(s):** NURS 656.**Fee:** An additional \$200.00 is charged for this course.**Description:** The purpose of this course is to provide clinical experience in comprehensive patient assessment, diagnosis and management of common primary health problems in adolescent, adult, geriatric patient populations. Students will begin practicing the role of an APRN under preceptor supervision.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**NURS 625. Advanced Clinical Practice: Adult-Gerontology Primary Care Nurse Practitioner II 3 Units****Prerequisite(s):** NURS 624.**Description:** The purpose of this course is to provide advanced clinical experience in comprehensive patient assessment, diagnosis and management of common and complex primary health problems in adolescent, adult, and geriatric patient populations. Students will strengthen and enhance their advanced practice skills with preceptor supervision.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**NURS 626. Advanced Clinical Practice: Adult Nurse Practitioner III 3 Units****Prerequisite(s):** NURS 602, NURS 604, NURS 624, and NURS 625.**Description:** The focus of this clinical course is the synthesis of theoretical and evidence-based practice skills necessary to implement the nurse practitioner role in a holistic manner that will advance nursing knowledge and the health of patients.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**NURS 627. Epidemiology and Global Health 3 Units****Term Typically Offered:** Spring Only**Prerequisite(s):** Admission to the MEPN Program.**Fee:** An additional \$150.00 is charged for this course.**Description:** This course will focus on the theory and concepts of epidemiology and social determinants of health, and how they can be applied to nursing practice. Application and integration of the principles and tools of epidemiology to decision-making in a health care environment will be emphasized. This course provides an overview of health behavior at the level of the individual family, community, and clinical/aggregate populations. The effects of individual health beliefs, cultural variables, readings for change, community environment, and health disparities on health behavior will be discussed.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**NURS 628. Health Information Technology 2 Units****Term Typically Offered:** Spring Only**Prerequisite(s):** Admission to MEPN Program.**Fee:** An additional \$100.00 is charged for this course.**Description:** This course provides an introduction to the use of information technology in health care and health care systems. Factors that facilitate or prevent successful use of health care technology will be examined.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**NURS 629. Advanced Health Assessment of the Neonate 3 Units****Prerequisite(s):** NURS 605, NURS 607, NURS 608, NURS 613, NURS 652, and NURS 655.**Corequisite(s):** NURS 658.**Fee:** An additional \$100.00 is charged for this course.**Description:** This course is an in-depth study of neonatal assessment techniques and normal versus abnormal variations seen in the newborn. Emphasis is on the clinical presentation of the newborn, utilizing concepts from development anatomy and physiology as well as intrauterine factors that may alter findings. Students will learn advanced physical examination, gestational age, and neurobehavioral assessment skills specific to the neonate.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**NURS 630. Neonatal Pathophysiology 2 Units****Prerequisite(s):** Admission to the MSN program, Neonatal Nurse Practitioner track.**Description:** Advanced neonatal pathophysiology serves as a basis for clinical management of the neonate.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**NURS 631. Clinical Nurse Leader Immersion: Part I 1 Unit****Term Typically Offered:** Spring Only**Prerequisite(s):** Admission to MEPN Program.**Fee:** An additional \$50.00 is charged for this course.**Description:** This practicum allows the student to begin to examine the various roles of the Clinical Nurse Leader (CNL) through a clinical immersion experience. This practicum will focus on the CNL as a clinician who advocates for the client, develops outcomes for the client, and manages client care using previous nursing coursework. The preceptor will help the students to begin to develop skills as a CNL through intensive clinical experience. The AACN competencies and curricular expectations for CNL education and practice (October 2013) will serve as the defining framework for this course.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

NURS 632. Clinical Nurse Leader Immersion: Part II 3 Units

Term Typically Offered: Spring Only

Prerequisite(s): Admission to MEPN Program, NURS 631.

Fee: An additional \$150.00 is charged for this course.

Description: This practicum allows the student to begin to examine the various roles of the Clinical Nurse Leader (CNL) through a clinical immersion experience. This practicum will focus on the CNL as a clinician who advocates for the client, develops outcomes for the client, and manages client care using previous nursing coursework. The preceptor will help the students to begin to develop skills as a CNL through intensive clinical experience. The AACN competencies and curricular expectations for CNL education and practice (October 2013) will serve as the defining framework for this course.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

NURS 633. Advanced Neonatal Pathophysiology and Clinical Management I 4 Units

Prerequisite(s): NURS 605, NURS 607, NURS 608, NURS 613, NURS 629, NURS 652, NURS 655, NURS 658, and NURS 657.

Corequisite(s): NURS 637.

Fee: An additional \$200.00 is charged for this course.

Description: This course provides a foundation in the cellular processes upon which neonatal pathophysiology occurs. Synthesis of topics in human embryology is the foundation for understanding specific neonatal pathophysiologic processes. Common pathophysiologic neonatal diseases and how they deviate from normal physiology are presented using a systems approach. Integrated into the course are diagnostic reasoning skills needed to manage the care of a critically ill neonate. Students will evaluate presenting clinical signs in the neonate requiring intensive care, determine the appropriate diagnosis and differential diagnoses, identify appropriate diagnostic tests and exams to determine the appropriate diagnosis in neonates with a variety of problems.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

NURS 634. Advanced Clinical Practice: Neonatal NP II 2 Units

Prerequisite(s): NURS 629, NURS 633, and NURS 600.

Description: This course provides a theoretical foundation for evidence based neonatal nurse practitioner practice. Clinical management of cardiovascular, gastrointestinal, integumentary and hematologic systems will be the focus.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

NURS 635. Advanced Neonatal Pathophysiology and Clinical Management II 4 Units

Prerequisite(s): NURS 605, NURS 607, NURS 608, NURS 613, NURS 629, NURS 636, NURS 652, NURS 655, NURS 657, and NURS 658.

Corequisite(s): NURS 637.

Description: This course is the second of two courses that provides the student with didactic preparation in the concepts of advanced neonatal pathophysiology based upon normal neonatal physiology. Synthesis of topics in human embryology, genetics, and advanced neonatal pathophysiology and clinical management provides the foundation for understanding complex neonatal pathophysiologic processes. Complex pathophysiologic neonatal diseases and how they deviate from normal physiology are presented using a systems approach. Integrated into the course is the diagnostic reasoning needed to manage the care of the critically ill neonate. Topics addressed in course include those recommended to prepare the student for national certification as a neonatal nurse practitioner.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

NURS 636. Neonatal Nurse Practitioner Residency I 3 Units

Prerequisite(s): NURS 605, NURS 607, NURS 608, NURS 613, NURS 629, NURS 636, NURS 652, NURS 655, NURS 657, and NURS 658; NURS 633 (or concurrent).

Description: The purpose of the NNP Residency is to provide neonatal nurse practitioner students with learning opportunities that facilitate continued development in the Neonatal Nurse Practitioner role. Students will work with preceptors in a Level III-IV NICU's to advance the knowledge and skills acquired in previous coursework. This course provides the student with an immersion into the Neonatal Nurse Practitioner (NNP) role that allows development of increased skill and independence in decision-making as a NNP. Students are expected to identify, interpret, and apply current evidence to their practice and clinical decision-making in the care of critically ill infants.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

NURS 637. Neonatal Nurse Practitioner Residency II 3 Units

Prerequisite(s): NURS 604, NURS 605, NURS 607, NURS 608, NURS 613, NURS 629, NURS 633, NURS 636, NURS 652, NURS 655, NURS 657, and NURS 658.

Corequisite(s): NURS 635.

Description: This is the second and final residency course for NNP students. The purpose of the NNP Residency is to provide students with learning opportunities that facilitate continued development in the Neonatal Nurse Practitioner role. Students will work with preceptors in a Level III-IV NICU's to advance the knowledge and skills acquired in previous coursework. This course provides the student with an immersion into the Neonatal Nurse Practitioner (NNP) role that allows advance their skills and independence in decision-making as a NNP working with infants with increasingly complex medical problems. Students are expected to identify, interpret, and apply current evidence to their practice and clinical decision-making in the care of critically ill infants.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

NURS 638. Advanced Psychiatric Assessment and Clinical Interviewing Techniques 1 Unit

Description: The focus this course is the use of clinical interviewing techniques and psychiatric assessment of in determining the mental health status of clients throughout the lifespan.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

NURS 639. Advanced Psych Nurse Practioner Mental Health Assessment Clinical 1 Unit

Prerequisite(s): NURS 638 and NURS 647.

Description: Course focuses on Initial Implementation of the APPMHN role: psychiatric assessment and interviewing strategies utilizing the current Diagnostic and Statistical Manual for diagnosing psychopathology. The practicum focuses on a lifespan approach with select clients in multicultural contexts who are at risk for or are experiencing dysfunction in the area of mental health.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

NURS 640. Introduction to CNL Project 1 Unit

Term Typically Offered: Summer Only

Prerequisite(s): Admission to MEPN Program.

Description: NURS 640 is a one credit course designed to assist the Clinical Nurse Leader (CNL) student with expectations for Nursing 631 Immersion I and NURS 632 Immersion II. These are "leadership" immersions culminating in an evidence-based performance improvement proposal and immersion project. The student will learn about immersion expectations; roles for the student, faculty, committee, and their preceptor; explore and critique completed projects for strengths and weaknesses; make connections between EBP theory and practice; and review documentation requirements for the Immersion Courses.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

NURS 641. Advanced Psychiatric Mental Health Nurse Practioner I: Theory 3 Units

Description: Course introduces the advanced practice role with a focus on at least 3 modes of therapy across the lifespan and in multicultural contexts. Relevant literature, professional practice guidelines and current best practice standards will guide the selection of intervention models across the continuum of care.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

NURS 642. Advanced Psychiatric Mental Health Nurse Practioner II: Theory 3 Units

Prerequisite(s): NURS 638, NURS 641, and NURS 645.

Corequisite(s): NURS 646.

Description: Course provides in-depth study of PMH interventions for clients with complex or co-morbid diagnoses. A lifespan approach encompassing diverse and multicultural contexts will be utilized. Relevant literature, professional practice guidelines and current best practice standards will guide the selection of intervention models across the continuum of care.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

NURS 643. Quality and Safety in Advanced Practice Nursing 2 Units

Term Typically Offered: Fall, Spring

Fee: An additional \$100.00 is charged for this course.

Description: Introduces students to the latest information on healthcare quality and patient safety. Focuses on the specific domains of healthcare quality. Quality frameworks and models will be the basis for explaining techniques of quality management. Examines healthcare quality and patient safety from a strategic viewpoint with the goal of making APN providers effective decision makers.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

NURS 645. Advanced Psychiatric Mental Health Nurse Practioner I: Clinical 3 Units

Prerequisite(s): NURS 638, NURS 647, and NURS 649.

Corequisite(s): NURS 641.

Fee: An additional \$200.00 is charged for this course.

Description: Course focuses on initial implementation of the APPMHN role: psychiatric assessment, diagnosis and intervention strategies including psychopharmacology. The practicum focuses on a life span approach with select clients in multicultural contexts who are at risk for or are experiencing dysfunction in the area of mental health.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

NURS 646. Advanced Psychiatric Mental Health Nurse Practioner II: Clinical 2 Units

Prerequisite(s): NURS 638, NURS 641, NURS 647, and NURS 649.

Corequisite(s): NURS 642.

Description: Course continues focus on implementation of APPMHN role. The practicum focuses on PMH interventions using a lifespan approach with individuals, families, and/or groups in diverse multi-cultural contexts who are experiencing co-morbid of complex psychiatric diagnoses. A variety of relevant intervention models will be utilized across the continuum of care.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

NURS 647. Advanced Psychopathology Across the Lifespan 2 Units

Description: This course is a comprehensive study of essential developmental and psychopathology across the lifespan. Clinical theory, standards of practice, neurobiology, genomic, genetic, and environmental influences will be examined in multicultural contexts.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

NURS 648. Advanced Clinical Assessment: Psych/Mental Health Nursing 3 Units

Prerequisite(s): Basic physical/health assessment skills are necessary; formal basic courses or continuing education courses in physical health assessment are acceptable.

Description: Builds upon basic assessment skills. The nurse's knowledge will be expanded to enable the development of the advanced practice role. Critical thinking and communication skills will be enriched by an accurate interpretation of a holistic approach to advanced clinical assessment of the adult.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- NURS 649. Advanced Psychopharmacology Across the Lifespan 2 Units**
Prerequisite(s): NURS 611 (or concurrent).
Description: This course is a comprehensive study of essential psychopharmacology used across the lifespan. Clinical theory, standards of practice, neurobiology, genomic, genetic, and environmental influences will be examined in multicultural contexts.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 650. CNL Certification Prep 1 Unit**
Term Typically Offered: Spring Only
Prerequisite(s): Admission to MEPN program.
Description: NURS 650 is a one credit course designed to assist the student with preparation for the Clinical Nurse Leader (CNL) Certification Exam. The course will use a certification review text, along with group activities and case studies to assist with knowledge, recognition, and application between and among the core CNL Competencies, Roles and Values. The course will engage the student in a 360 evaluation and exploration of skills, knowledge, and accountability for CNL professional practice.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 651. Evidence Based Nursing for Advanced Practice 3 Units**
Prerequisite(s): NURS 652 and graduate-level Statistics (applied descriptive & inferential statistics); NURS 605 (or concurrent).
Description: Analysis of the value of research in advanced nursing practice. Focus is on the research theory and process, ethics, critique of the literature, and dissemination of findings.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 652. Advanced Statistical Application 3 Units**
Fee: An additional \$150.00 is charged for this course.
Description: This course will expose the student to basic and advanced concepts and practical applications of statistics. The student will learn to analyze data sets to address hypotheses and make inferences to populations.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 653. Advanced Practice Roles 2 Units**
Prerequisite(s): Admission to the Graduate Program in Nursing.
Description: This web-enhanced course focuses on the advanced practice roles of educator, consultant, researcher, leader, and expert practitioner. Scope of practice, credentialing, reimbursement and future issues are also addressed.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 654. Informatics in Health Care 3 Units**
Description: National Nursing Informatics (NI) competencies will be covered as well as core NI principles, knowledge acquisition, process, generation and dissemination. Students will be prepared at the level of informatics innovators.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 655. Advanced Pathophysiology: Clinical Decision Making 3 Units**
Prerequisite(s): Understanding of normal anatomy and physiology as well as basic pathophysiology.
Description: The focus of this foundational course is on understanding pathological processes common among individuals of all ages.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 656. Advanced Clinical Assessment 3 Units**
Prerequisite(s): NURS 655.
Fee: An additional \$100.00 is charged for this course.
Description: This course builds upon the basic critical thinking and psychomotor skills that professional nurses use in client care. Emphasis is on the physical, psychosocial, and cultural assessment of individuals and families.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 657. Health Promotion and Disease Prevention in Culturally Diverse and Vulnerable Populations 3 Units**
Prerequisite(s): Enrollment in master's degree program.
Fee: An additional \$150.00 is charged for this course.
Description: This course provides an overview of health behavior at the level of the individual family, community and clinical/aggregate populations. The effects of individual health beliefs, cultural variables, readiness for change, community environment, and health disparities will be discussed.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 658. Advanced Neonatal Pharmacology 3 Units**
Prerequisite(s): NURS 605, NURS 607, NURS 608, NURS 613, NURS 633, NURS 636, NURS 652, and NURS 655.
Corequisite(s): NURS 629.
Description: This course provides a basis for understanding the pharmacokinetics and actions of specific groups of drugs commonly used in neonatal advanced nursing practice. Emphasis is placed on pharmacological action of drugs, side effects, appropriate dosing, monitoring, drug interactions and guidelines for use of drugs in the critically ill neonate from admission to the NICU to discharge. Legal and ethical considerations of prescriptive practice are also addressed.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 659. Life-Span Issues in Pathophysiology for Clinical Decision Making 2 Units**
Description: Will provide the student with an opportunity to examine and apply pathophysiological concepts across the lifespan utilizing critical thinking and decision-making by the graduate level nurse.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 660. Family Nursing 2 Units**
Prerequisite(s): NURS 605, NURS 655, NURS 656, and NURS 611.
Description: This course is an introduction to Advanced Family Practice Nursing. It provides a theoretical and practical base for the health care management of childbearing and childrearing families.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- NURS 661. Advanced Clinical Practice: Family Nurse Practitioner Clinical I** 3 Units
Prerequisite(s): NURS 656 and NURS 611.
Fee: An additional \$200.00 is charged for this course.
Description: The clinical experience focuses on comprehensive patient assessment, diagnosis and management of acute health problems for individuals and their families.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 662. Advanced Clinical Practice: Family Nurse Practitioner Clinical II** 3 Units
Prerequisite(s): NURS 601 and NURS 661.
Description: The clinical experience focuses on comprehensive patient assessment, diagnosis and management of chronic health problems for individuals and their families.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 663. Advanced Clinical Practice: Family Nurse Practitioner** 2.5 Units
Prerequisite(s): NURS 601, NURS 602, and NURS 661.
Description: This clinical experience focuses on synthesis of theoretical, scientific, and clinical knowledge as well as practice-based skills in the diagnosis and management of existing and potential health problems.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 664. Common Health Problems of the Pediatric Client** 1 Unit
Prerequisite(s): NURS 601, NURS 605, NURS 655, NURS 656, NURS 657, and NURS 611.
Description: Focus is on the Family Nurse Practitioner's role in the identification and management of selected acute, chronic and emergent health problems of the pediatric client.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 665. Primary Care of the Aged: Leadership and Practice** 5 Units
Prerequisite(s): NURS 600, NURS 605, NURS 611, NURS 651, NURS 655, NURS 656, and NURS 657; or National Certification as FNP or ANP.
Fee: An additional \$200.00 is charged for this course.
Description: Develop health assessment and health promotion skills to determine age-related changes in older adults.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 666. Primary Care of Older Adults** 2 Units
Prerequisite(s): NURS 611, NURS 655, and NURS 656.
Description: This course provides an in-depth analysis of primary care of the older adult. Emphasis is on assessment, interpretation, and management of age-related functional and cognitive changes. The advanced practice nurse's role will be examined both as an individual practitioner and as a member of a collaborative inter-professional healthcare team.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 667. Applied Geriatric Pharmacology in Nursing Practice** 1 Unit
Prerequisite(s): NURS 611, NURS 655, and NURS 656.
Description: This course builds principles and content of advanced nursing pharmacology. It is designed to provide the adult gerontology nurse practitioner student with knowledge of pharmacokinetics, pharmacodynamics, and polypharmacy as related to the older adult.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 670. Cancer Epidemiology and Pathophysiology** 2 Units
Prerequisite(s): NURS 550 or NURS 605, NURS 611, NURS 651, NURS 655, and NURS 656; NURS 653 (or concurrent).
Description: This course provides an opportunity to synthesize cancer-specific epidemiology and pathophysiology concepts for critical thinking and decision-making by the nurse in an advanced practice role in caring for patients with cancer and their families across the cancer-care continuum.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 671. Evidence-Based Cancer Treatment** 3 Units
Description: This course provides the student an opportunity to integrate knowledge and principles of cancer treatment, associated responses and symptom management, and the late-effects of cancer treatment. Emphasis is placed on current theory and research in examining evidence-based nursing interventions to improve outcomes for clients with cancer and their families.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 672. Advanced Oncology Clinical Practice I** 6 Units
Prerequisite(s): NURS 605, NURS 611, NURS 651, NURS 655, and NURS 656; NURS 653 (or concurrent) and NURS 671 (or concurrent).
Fee: An additional \$200.00 is charged for this course.
Description: This course entails didactic classroom instruction and a mentored clinical practicum, which will provide students an opportunity to synthesize and apply knowledge in the clinical management of complex physical, cognitive, and psychosocial responses to cancer and its treatment.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 673. Advanced Oncology Clinical Practice II** 7 Units
Prerequisite(s): NURS 605, NURS 611, NURS 651, NURS 655, and NURS 656; NURS 653 (or concurrent), NURS 671 (or concurrent), and NURS 672 (or concurrent).
Description: This didactic and clinical course will provide the student with an opportunity to develop expertise in clinical judgment and consultation, facilitation of learning; intra-and inter-disciplinary collaboration; systems thinking and care-delivery models; and advocacy and moral agency. A case-study approach will be used to analyse and systematically evaluate the multiple roles of the advanced oncology nurse.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- NURS 674. Adult-Gerontology Acute Care Nurse Practitioner I** 4 Units
Prerequisite(s): NURS 611, NURS 655, and NURS 656.
Description: This course is an introduction to the acute care of adult-gerontology patients. Emphasis is placed on health promotion, health protection, problem identification, and management of complex health problems. The advanced practice nurse's role will be examined both as an individual practitioner and as a member of a collaborative interprofessional healthcare team.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 675. Advanced Clinical Practice: Adult-Gerontology Acute Care Practitioner, Clinical I** 3 Units
Prerequisite(s): NURS 611, NURS 655, and NURS 656.
Fee: An additional \$200.00 is charged for this course.
Description: This clinical course places an emphasis on the assessment, diagnosis and collaborative management of adult clients who are acutely/critically ill or experiencing an exacerbation of a chronic health problem. The clinical focus is on the Adult-Gerontology Acute Care Nurse Practitioner performing health assessments, interpretation of data and the implementation of a collaborative plan of care.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 676. Adult-Gerontology Acute Care Practitioner II** 4 Units
Prerequisite(s): NURS 674.
Description: This course provides an in-depth analysis of adult acute-gerontology care. Emphasis is placed on differentiating signs and symptoms, formulating diagnoses, and developing culturally competent plans of care for acute complex health problems. The advanced practice nurse's role will be examined both as an individual practitioner and as a member of a collaborative interprofessional healthcare team.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 677. Advanced Clinical Practice: Adult-Gerontology Acute Care Practitioner, Clinical II** 3 Units
Prerequisite(s): NURS 675.
Description: This clinical course emphasises advanced assessment, advanced diagnosis, and collaborative management of adult clients who are acutely/critically ill or experiencing an exacerbation of a chronic health problem. The clinical focus is on the Adult-Gerontology Acute Care Nurse Practitioner in performing complex health assessments, interpretation of data, and the implementation of a collaborative plan of care. This course builds on the clinical experiences in NURS 675.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 690. Special Topics** 0.5-15 Units
Prerequisite(s): Consent of instructor.
Description: Selected topics in nursing and health care. Semester topic will be indicated in Schedule of Courses.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 696. Independent Study** 1-3 Units
Prerequisite(s): Departmental approval.
Description: Provides opportunity for the student, under the supervision of a departmental faculty member, to develop objectives and protocol for independent work related to the practice of nursing.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 698. Research Project** 2 Units
Prerequisite(s): NURS 651.
Description: Provides the student an opportunity to develop, implement and present results of a research study of limited scope.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 699. Thesis** 1-6 Units
Prerequisite(s): NURS 651.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 700. Theoretical Basis of Nursing** 3 Units
Prerequisite(s): Admission to PhD Nursing; graduate-level Philosophy of Science course (or concurrent).
Description: The course examines the theoretical basic of nursing science and facilitates the refinement of critical skills necessary for evaluating theories, synthesizing theoretical components into conceptual models or middle range theories, and developing testable hypotheses.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 702. Philosophy of Science** 3 Units
Prerequisite(s): Admission to PhD Nursing; BSN-PhD students must have 18 credits of required MSN courses completed.
Description: This course examines philosophies of science and epistemologies and their influence on knowledge development of nursing.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 710. Research Methodology I: Qualitative Research Methods** 3 Units
Prerequisite(s): NURS 700 and NURS 702.
Description: This course examines qualitative methods as a scientific approach for building nursing knowledge. Qualitative research methods will be analyzed and applied. Ethical issues in conducting qualitative research will be discussed.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 711. Research Methodology II: Quantitative Design** 3 Units
Prerequisite(s): NURS 700 and NURS 702; one doctoral-level stats course; second doctoral-level stats course (or concurrent).
Description: This course examines quantitative methods as a scientific approach for building nursing knowledge. Quantitative research methods will be analyzed and applied. Ethical issues in conducting quantitative research will be discussed.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- NURS 712. Research Methodology III: Nursing Measurement** 3 Units
Prerequisite(s): NURS 711; two doctoral-level statistics courses.
Description: This course focuses on measurement of health-related phenomena. Measurement methods and instrument development are discussed. The psychometric and biometric properties of instruments used in research are evaluated.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 713. Research Methods Practicum** 2 Units
Prerequisite(s): NURS 710 and NURS 711; NURS 712 (or concurrent).
Description: This guided practicum in the area of research methodology will allow students to gain mastery of a specific methodology that a PhD prepared nurse scientist may be expected to employ.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 714. Research Methodology IV: Analysis of Existing Data** 3 Units
Prerequisite(s): NURS 712; two doctoral-level statistics courses.
Description: This course focuses on the analysis, interpretation, and presentation of existing quantitative data. Students will develop skills in the application of a variety of quantitative analysis strategies using existing data. Students will identify hypotheses and/or research question, test them using statistical methods, and interpret the results.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 715. Designing Mixed Methods Research in Nursing and Healthcare** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): NURS 710 and NURS 711 or equivalent Foundations, designs, and applications of mixed methods research through study of relevant existing literature and proposal development in nursing and healthcare.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 720. Seminar in Advanced Leadership** 3 Units
Description: Students will synthesize leadership concepts and theories with personal, professional, and organizational values within the changing political, ethical and sociocultural context in which leadership is practiced.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 721. Leadership Practicum** 1 Unit
Prerequisite(s): NURS 720.
Description: This guided practicum for nursing leadership and education will allow students to gain mastery of a leadership role PhD prepared nurse scientists may be expected to fulfill.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 725. Analysis of Leadership and Health Policy** 3 Units
Description: This course provides an overview of leadership and political theories applicable to a variety of organizational settings. The influence of socio-cultural, economic, political, and ethical issues on leadership and policy is examined. The nurse's role in research, administration and advanced practice in developing and evaluating health policy is explored.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 726. Clinical Practicum for the MSN NP I** 2 Units
Grading Basis: Pass/Fail
Term Typically Offered: Fall, Spring, Summer
Fee 1: An additional \$100.00 is charged for this course.
Fee 2: An additional \$200.00 is charged for this course.
Fee 3: An additional \$250.00 is charged for this course.
Description: The purpose of this course is to provide foundational clinical experiences in focused patient assessment, diagnosis, and management of common health problems among select patient populations. Students will begin practicing the role of an APRN under preceptor supervision.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 727. Clinical Practicum for the MSN NP II** 2 Units
Grading Basis: Pass/Fail
Term Typically Offered: Fall, Spring, Summer
Fee 1: An additional \$100.00 is charged for this course.
Fee 2: An additional \$200.00 is charged for this course.
Description: The purpose of this course is to provide foundational clinical experiences in comprehensive patient assessment, diagnosis, and management of common problems among select patient populations. Students will strengthen and enhance their advanced practice skills with preceptor supervision.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

<p>NURS 728. Clinical Practicum for the MSN NP III 2 Units Grading Basis: Pass/Fail Term Typically Offered: Fall, Spring, Summer Fee 1: An additional \$200.00 is charged for this course. Fee 2: An additional \$100.00 is charged for this course. Description: The purpose of this course is to provide advanced clinical experiences in comprehensive patient assessment, diagnosis, and management of complex problems among select patient populations. Students will strengthen and enhance their advanced practice skills with preceptor supervision. Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>NURS 731. Clinical Practicum for the MSN NP VI 1 Unit Grading Basis: Pass/Fail Term Typically Offered: Fall, Spring, Summer Fee 1: An additional \$100.00 is charged for this course. Fee 2: An additional \$50.00 is charged for this course. Description: This clinical experiences focuses on synthesis of theoretical, scientific, clinical knowledge and practice-based skills in the diagnosis and management of existing and potential health problems. Emphasis will be placed on the collaborative and leadership roles of the advanced practice nurse in health care delivery. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p> <p>NURS 735. PhD Seminar I 1 Unit Description: This is the first of four courses that examine issues critical to socialization into the role of a nurse scientist. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p> <p>NURS 736. PhD Seminar II 1 Unit Prerequisite(s): NURS 735. Description: This is the second of four courses that examine issues critical to socialization into the role of a nurse scientist. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p> <p>NURS 737. PhD Seminar III 1 Unit Prerequisite(s): NURS 736. Description: This is the third of four courses that examine issues critical to socialization into the role of a nurse scientist. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p> <p>NURS 738. PhD Seminar IV 1 Unit Prerequisite(s): NURS 737. Description: This is the last of four courses that examine issues critical to socialization into the role of a nurse scientist. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p> <p>NURS 740. Advanced Pharmacology 3 Units Prerequisite(s): Enrollment in the doctoral program. Fee: An additional \$150.00 is charged for this course. Description: This course is designed to provide advanced practice nursing students with a sound basis for the clinical application of pharmacology. Core drug knowledge, including pharmacotherapeutics, pharmacodynamics and pharmacokinetics are discussed. Emphasis is placed on learning drug classifications by clinical indication with an advanced understanding of potential drug interactions, side effects, and goals of pharmacologic therapy. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>NURS 729. Clinical Practicum for the MSN NP IV 2 Units Grading Basis: Pass/Fail Term Typically Offered: Fall, Spring, Summer Fee 1: An additional \$100.00 is charged for this course. Fee 2: An additional \$200.00 is charged for this course. Description: This clinical experiences focuses on synthesis of theoretical, scientific, clinical knowledge and practice-based skills in the diagnosis and management of existing and potential health problems. Emphasis will be placed on the collaborative and leadership roles of the advanced practice nurse in health care delivery. Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>NURS 730. Clinical Practicum for the MSN NP V 1 Unit Grading Basis: Pass/Fail Term Typically Offered: Fall, Spring, Summer Fee 1: An additional \$100.00 is charged for this course. Fee 2: An additional \$50.00 is charged for this course. Description: The purpose of this course is to provide advanced clinical experiences in comprehensive patient assessment, diagnosis, and management of complex problems among select patient populations. Students will strengthen and enhance their advanced practice skills with preceptor supervision. Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>

<p>NURS 741. Advanced Pathophysiology 4 Units</p> <p>Fee: An additional \$200.00 is charged for this course.</p> <p>Description: This course provides the student an opportunity to synthesize pathophysiological concepts essential for critical thinking and clinical decision-making by the nurse in an advanced practice role. The focus of this foundational course is on understanding pathological processes common among individuals of all ages by using knowledge from genetics, the biophysical and psychosocial sciences, and current research.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>NURS 746. Program Development & Evaluation 3 Units</p> <p>Prerequisite(s): NURS 744.</p> <p>Fee: An additional \$150.00 is charged for this course.</p> <p>Description: This course explores techniques and strategies used for designing, implementing and evaluating programs. Students will assess population needs, develop appropriate goals, determine intervention strategies and resource needs, and implement evaluation mechanisms. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>NURS 742. Advanced Physical Assessment 3 Units</p> <p>Fee 1: An additional \$150.00 is charged for this course.</p> <p>Fee 2: An additional \$300.00 is charged for this course.</p> <p>Description: This advanced health assessment course will focus on both normal and normal variant finding in the population of patients from adolescence to geriatrics.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>NURS 747. Finance Management 2 Units</p> <p>Fee: An additional \$100.00 is charged for this course.</p> <p>Description: This course focuses on the financial and business aspects of health care delivery. An emphasis is on the instruments and concepts used for analysis of practice initiatives and the development and implementation of effective plans to improve health outcomes. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>NURS 743. Epidemiology 3 Units</p> <p>Fee: An additional \$150.00 is charged for this course.</p> <p>Description: This course will focus on the theory and concepts of epidemiology and social determinants of health, and how they can be applied to the field of nursing. This course will apply and integrate the principles and tools of epidemiology to the decision-making in a health care environment. The student will identify the different study designs and how each of them can be applied to answer specific questions related to population-based health care. Emphasis will also be placed on the application of appropriate analytic methods for these different designs and questions.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>NURS 748. Application of Leadership and Health Policy 1 Unit</p> <p>Grading Basis: Pass/Fail</p> <p>Term Typically Offered: Spring Only</p> <p>Prerequisite(s): NURS 725 This course focuses on the application of leadership and engagement in health policy advocacy competencies pertinent to the nurse practitioner role.</p> <p>Fee: An additional \$50.00 is charged for this course.</p> <p>Description: Emphasis is placed on demonstration of leadership skills, service in professional organizations, and design of advocacy strategies that intentionally influence the policy process. The promotion of advocacy efforts includes principles of social justice, diversity, equity, and inclusion.</p> <p>Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.</p>
<p>NURS 744. Synthesis and Evaluation of Evidence in Practice 3 Units</p> <p>Fee: An additional \$150.00 is charged for this course.</p> <p>Description: In this advanced course, students will critically evaluate, translate, and apply to practice evidence from a variety of sources. An emphasis is placed on the synthesis and dissemination of evidence.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>NURS 745. Informatics in Advanced Practice Nursing 3 Units</p> <p>Fee: An additional \$150.00 is charged for this course.</p> <p>Description: This course provides an overview of informatics and the role it plays in the delivery of evidence-based care. Technological concepts related to data acquisition and analysis, data security, and telehealth will be reviewed within the context of delivering optimal patient care and enhance the student's ability to transform data into information and knowledge for practice and scholarly inquiry.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>NURS 749. The Business of Healthcare 2 Units</p> <p>Term Typically Offered: Fall Only</p> <p>Description: This course provides knowledge in the foundations of practice management and revenue operations for the practicing medical provider. Students will gain understanding of practice reimbursement models, the impact of data management and performance indicators on reimbursement, and maintaining awareness of the financial impact of practice decisions.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>

NURS 750. DNP Project I: Project Inception Grading Basis: Pass/Fail Fee 1: An additional \$300.00 is charged for this course. Fee 2: An additional \$150.00 is charged for this course. Description: In this course students will identify an area of interest and develop a DNP Project. The DNP Project will require the student to synthesize the evidence and apply the competencies learned throughout the curriculum to improve outcomes in health care systems. Students will have their completed proposal approved and will submit the proposal to the IRB as applicable. Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	3 Units	NURS 753. Adolescent Well Child Theory Prerequisite(s): NURS 740 and NURS 741. Fee: An additional \$50.00 is charged for this course. Description: This course is an introduction to advanced practice nursing. It provides a theoretical and practical base for the health care management of pediatric and adolescent clients. Emphasis is on the analysis and the implementation of the advanced practice nurse's role in the identification, prevention, and management of common pediatric health concerns. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	1 Unit
NURS 751. DNP Project II: Project Implementation Grading Basis: Pass/Fail Prerequisite(s): NURS 750. Fee 1: An additional \$300.00 is charged for this course. Fee 2: An additional \$150.00 is charged for this course. Description: In this course students will implement their DNP Project. The DNP Project will require the student to synthesize and apply the competencies learned throughout the curriculum to improve outcomes in health care systems. Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	3 Units	NURS 754. Clinical Reasoning in Advanced Practice Nursing Fee: An additional \$50.00 is charged for this course. Description: This course will prepare the advanced practice nurse to make clinical decisions using a variety of decision making modalities. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	1 Unit
NURS 752. DNP Project III: Project Evaluation, Analysis and Dissemination Grading Basis: Pass/Fail Prerequisite(s): NURS 751. Fee 1: An additional \$300.00 is charged for this course. Fee 2: An additional \$150.00 is charged for this course. Description: In this course students will complete an evaluation and analysis of the DNP Project. Students will disseminate the completed DNP Project. The DNP Project will require the student to synthesize and apply the competencies learned throughout the curriculum to improve outcomes in health care systems. Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	3 Units	NURS 755. Diagnosis and Management of Adult Health in Primary Care Prerequisite(s): NURS 742 and NURS 754. Fee: An additional \$200.00 is charged for this course. Description: This course provides an in depth analysis of primary care of the adolescent and adult. Emphasis is on differentiating signs and symptoms, formulating diagnoses, and management of acute and chronic conditions commonly encountered in primary care. The advanced practice nurse's role will be examined both as an individual practitioner and as a member of a collaborative inter-professional healthcare team. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	4 Units
		NURS 756. Procedures & Diagnostics for Adult Health Grading Basis: Pass/Fail Prerequisite(s): NURS 742 and NURS 754. Fee: An additional \$50.00 is charged for this course. Description: This course introduces the advanced psychomotor and diagnostic skills used in procedures that are commonly performed in the primary care setting. Emphasis is placed on indications, procedural techniques, and potential complications. Skills are taught in laboratories with a hands-on approach before application in the clinical setting. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	1 Unit
		NURS 757. Diagnosis and Management of Women's Health in Primary Care Prerequisite(s): NURS 740 and NURS 741. Fee: An additional \$100.00 is charged for this course. Description: The focus of this course is to the health and well-being of girls and women across the life-span. It emphasizes the application of concepts, theories, principles, and findings needed to provide care for common, well-defined obstetric and gynecologic health processes and problems of female adolescents and adults frequently encountered by nurse practitioners. The focus of this course is identifying between normal and abnormal, and in making differential diagnosis. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)	2 Units

NURS 758. Diagnosis and Management of Mental Health in Primary Care 2 Units

Prerequisite(s): NURS 742 and NURS 754.

Fee: An additional \$100.00 is charged for this course.

Description: The focus of this course is on the mental health and well-being of individuals across the life-span. It emphasizes the application of concepts, theories, principles, and research findings needed to provide care for common psychiatric conditions encountered in the primary care setting. The focus of this course is identification of psychiatric conditions as well as treatment strategies and the recognition of situations where a referral is needed.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

NURS 759. Diagnosis and Management of the Older Adult in Primary Care 3 Units

Prerequisite(s): NURS 755 This course provides an in-depth analysis of primary care of the older adult.

Fee: An additional \$150.00 is charged for this course.

Description: Emphasis is on assessment, interpretations and management of age-related functional and cognitive changes. The advanced practice nurse's role will be examined both as an individual practitioner and as a member of a collaborative inter-professional healthcare team.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

NURS 760. Gerontology Pharmacology 1 Unit

Prerequisite(s): NURS 742.

Fee: An additional \$50.00 is charged for this course.

Description: This course builds principles and content of advanced nursing pharmacology. It is designed to provide the adult gerontology nurse practitioner student with knowledge of pharmacokinetics, pharmacodynamics, and polypharmacy as related to the older adult.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

NURS 761. Pediatric & Adolescent Well Child Theory 2 Units

Prerequisite(s): NURS 740.

Fee: An additional \$100.00 is charged for this course.

Description: This course is an introduction to advanced practice nursing. It provides a theoretical and practical base for the health care management of pediatric and adolescent clients. Emphasis is on the analysis and the implementation of the advanced practice nurses role in the identification, prevention, and management of common pediatric health concerns.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

NURS 762. Diagnosis & Management of Pediatrics in Primary Care 2 Units

Prerequisite(s): NURS 741.

Fee: An additional \$100.00 is charged for this course.

Description: This course provides in depth analysis of primary care of the child. Emphasis is on differentiating signs and symptoms, formulating diagnoses, and management of acute and chronic conditions commonly encountered in primary care. The advanced practice nurses role will be examined both as an individual practitioner and as a member of a collaborative interprofessional healthcare team.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

NURS 763. Advanced Neonatal Physiology & Pathophysiology I 3 Units

Prerequisite(s): NURS 785.

Fee: An additional \$150.00 is charged for this course.

Description: This course provides a foundation in the cellular processes upon which neonatal pathophysiology occurs. Synthesis of topics in human embryology is the foundation for understanding specific neonatal pathophysiologic processes. Common pathophysiologic neonatal disease and how they deviate from normal physiology are presented using a systems approach.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

NURS 764. Neonatal Diagnostic Reasoning I 1 Unit

Prerequisite(s): NURS 785.

Fee: An additional \$50.00 is charged for this course.

Description: An advanced health assessment class emphasizing the processes and techniques of diagnostic reasoning with critically-ill neonates. Students will evaluate presenting clinical signs in the neonate requiring intensive care, determine the differential diagnosis, identify appropriate diagnostic tests and exams, and determine the appropriate diagnosis and treatment in neonates with a variety of problems.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

NURS 765. Advance Neonatal Physiology & Pathophysiology II 3 Units

Prerequisite(s): NURS 763.

Fee: An additional \$150.00 is charged for this course.

Description: This course is the second of two courses that provides the student with didactic preparation in the concepts of advanced neonatal pathophysiology based upon normal neonatal physiology. Synthesis of topics in human embryology, genetics, and advanced neonatal pathophysiology and clinical management provides the foundation for understanding complex neonatal pathophysiologic processes. Complex pathophysiologic neonatal diseases and how they deviate from normal physiology are presented using a systems approach. Integrated into the course is the diagnostic reasoning needed to manage the care of a critically ill neonate. Topics addressed in this course include those recommended to prepare the student for national certification as a neonatal nurse practitioner.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- NURS 766. Neonatal Diagnostic Reasoning II** 1 Unit
Prerequisite(s): NURS 765.
Fee: An additional \$50.00 is charged for this course.
Description: An advanced health assessment class emphasizing the processes and techniques of diagnostic reasoning with critically-ill neonates with diagnoses of advanced complexity and builds upon skills learned and applied Neonatal DDX I. Students will evaluate presenting clinical signs in the neonate requiring intensive care, determine the differential diagnosis, identify appropriate diagnostic tests and exams, and determine the appropriate diagnosis and treatment in neonates with a variety of problems.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 767. Neonatal Residency I** 3 Units
Prerequisite(s): NURS 765.
Fee 1: An additional \$300.00 is charged for this course.
Fee 2: An additional \$150.00 is charged for this course.
Fee 3: An additional \$250.00 is charged for this course.
Description: The purpose of the NNP Residency is to provide neonatal nurse practitioner students with learning opportunities that facilitate continued development in the Neonatal Nurse Practitioner role. Students will work with preceptors in a Level III-IV NICUs to advance the knowledge and skills acquired in previous coursework. This course provides the student with an immersion into the Neonatal Nurse Practitioner (NNP) role that allows development of increased skill and independence in decision-making as a NNP. Students are expected to identify, interpret, and apply current evidence to their practice and clinical decision-making in the care of critically ill infants.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 768. Neonatal Residency II** 3 Units
Prerequisite(s): NURS 767.
Fee 1: An additional \$300.00 is charged for this course.
Fee 2: An additional \$150.00 is charged for this course.
Description: This is the second clinical residency course for the NNP students. The purpose of the NNP Residency is to provide students with learning opportunities that facilitate continued development in the Neonatal Nurse Practitioner role. Students will work with preceptors in a Level III-IV NICUs to advance the knowledge and skills acquired in previous coursework. This course provides the student with an immersion into the Neonatal Nurse Practitioner (NNP) role that allows advance their skills and independence in decision-making as a NNP working with infants with increasingly complex medical problems. Students are expected to identify, interpret, and apply current evidence to their practice and clinical decision-making in the care of critically ill infants.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 769. Neonatal Residency III** 3 Units
Prerequisite(s): NURS 768.
Fee 1: An additional \$300.00 is charged for this course.
Fee 2: An additional \$150.00 is charged for this course.
Description: This is the third and final clinical residency course for NNP students. The purpose of the NNP Residency is to provide students with learning opportunities that facilitate continued development in the Neonatal Nurse Practitioner role. Students will work with preceptors in a Level III-IV NICUs to apply the knowledge and skills acquired in previous residency semesters and coursework. This course provides the student with an immersion into the Neonatal Nurse Practitioner (NNP) role that allows them to advance their skills and independence in decision-making as a NNP working with infants with increasingly complex medical problems. Students are expected to identify, interpret, and apply current evidence to their practice and clinical decision-making in the care of critically ill infants.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 770. Adv. Psychiatric Assessment of Psychopathology and Clinical Interviewing Across the Lifespan** 2 Units
Prerequisite(s): NURS 742.
Fee: An additional \$100.00 is charged for this course.
Description: The focus of this course is the use of clinical interviewing techniques and psychiatric assessment in diagnosing psychopathology in psychiatric mental health patients across the lifespan. The course builds upon the undergraduate psychiatric assessment course as well as the advanced physical assessment course. Further diagnostic reasoning skills will be developed based on a comprehensive study of essential developmental psychopathology across the lifespan. Students will apply advanced nursing knowledge of neurobiology, genetics, and environmental factors that contribute to the development of psychopathology. Normal and abnormal psychological development of the individual and how illness manifests as psychopathological given the right set of variables or circumstances are reviewed. Psychopathologies are addressed with an understanding the complexity of clinical presentation and refining the student's ability to assess patients in a multicultural context.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 771. Foundations of Individual and Group Psychotherapy for the Adv. Practice Psychiatric Mental Health NP** 2 Units
Prerequisite(s): NURS 740 and NURS 741.
Fee: An additional \$100.00 is charged for this course.
Description: This course will introduce the role of psychotherapist and foundations of psychotherapy essential for safe and effective practice for the psychiatric-mental health nurse practitioner (PMHNP). Students will be able to select and provide appropriate psychotherapeutic modalities in the delivery of culturally relevant care to persons with psychiatric-mental health concerns. We will explore evidence-based individual and group psychotherapies through relevant literature, professional guidelines, and current best practices.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- NURS 772. Psychopharmacology** 2 Units
Prerequisite(s): NURS 740 and NURS 741.
Fee: An additional \$100.00 is charged for this course.
Description: This course is a comprehensive study of essential psychopharmacology used across the lifespan. Clinical theory, standards of practice, neurobiology, genomic, generic, and environmental influences will be examined in multicultural contexts.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 773. Diagnosis and Management of Children and Adolescents in Adv. Psychiatric-Mental Health Nursing** 3 Units
Fee: An additional \$150.00 is charged for this course.
Description: This course will introduce the role and foundations essential to safe, effective, and culturally relevant practice for the psychiatric-mental health nurse practitioner (PMHNP) working with children, adolescents, and their families within different care settings. Developmental theories and mental and developmental disorders observed in the pediatric population will be discussed. Students will learn evidence-based individual and group psychotherapies and safe and effective medication management strategies as we explore relevant literature, professional guidelines, and current best practices. The course will employ online and active learning tools such as Perusall, Blackboard Discussion Board, podcasts, brief lectures, as well as in-person case studies and role-plays.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 774. Diagnosis and Management of Adults in Advanced Practice Psychiatric-Mental Health Nursing** 3 Units
Prerequisite(s): NURS 770, NURS 771, NURS 772 This course will introduce the role and foundations essential to safe, effective, and culturally relevant practice for the psychiatric-mental health nurse practitioner (PMHNP) working with adults in different care settings.
Fee: An additional \$150.00 is charged for this course.
Description: We will review mental disorders observed in the adult population and learn evidence-based individual and group psychotherapies and safe and effective medication management strategies as we explore relevant literature, professional guidelines, and current best practices. We will use online and active learning tools such as Perusall, Blackboard Discussion Board, podcasts, brief lectures, as well as in-person case studies and role-plays.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 775. Diagnosis and Management of Special Populations in Psychiatric Mental Health Nursing** 2 Units
Term Typically Offered: Spring Only
Prerequisite(s): NURS 773 and 774.
Fee: An additional \$100.00 is charged for this course.
Description: This course will expand on the role and essentials necessary for safe and effective care of the psychiatric-mental health nurse practitioner (PMH-NP) working with special populations. Global issues in mental health including access to and delivery of mental health care within the United States healthcare system will be discussed. The role of the PMH-NP delivery of evidence-based, culturally competent care to vulnerable persons with complex mental health needs and barriers to care are examined.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 776. Procedures and Diagnostics for the Acute Care NP I** 1 Unit
Grading Basis: Pass/Fail
Term Typically Offered: Spring Only
Fee: An additional \$50.00 is charged for this course.
Description: This laboratory and skills course places an emphasis on advanced psychomotor and diagnostic skills used by nurse practitioners in the care of adults and adolescents across the lifespan. These skills are learned and practiced in the classroom setting before application in the clinical setting.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 777. The Adult/Gerontology Acute Care NP Role** 1 Unit
Term Typically Offered: Spring Only
Fee: An additional \$50.00 is charged for this course.
Description: This course focuses on the role of the Adult/Gerontology nurse practitioner in the Acute Care setting as a leader and member of an inter-professional team and expert practitioner. Historical development of the nurse practitioner role, current scope of practice regulations, inter-professional communication, and clinical privileges are addressed.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 778. DNP Project Completion** 1-3 Units
Grading Basis: Pass/Fail
Term Typically Offered: Fall, Spring, Summer
Fee 1: An additional \$300.00 is charged for this course.
Fee 2: An additional \$150.00 is charged for this course.
Description: In this course students will continue to implement and evaluate their capstone project. The capstone project will require the student to synthesize and apply the competencies learned throughout the curriculum to improve outcomes in health care systems.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

NURS 779. Diagnosis & Management in Acute Care I 4 Units

Prerequisite(s): NURS 740 and NURS 741.

Fee: An additional \$200.00 is charged for this course.

Description: This course provides an in-depth analysis of adult-gerontology acute care in the areas of heart, lungs, bleeding disorders and x-ray interpretation. Emphasis is placed on differentiating signs and symptoms, formulating diagnoses, and developing culturally competent plans of care in adolescents or adults with acute, complex and/or critical illnesses or acute exacerbation of chronic or comorbid conditions. The advanced practice nurse's role will be examined both as an individual practitioner and as a member of a collaborative healthcare team. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

NURS 780. Procedures and Diagnostics for the Acute Care NP II 2 Units

Term Typically Offered: Fall Only

Prerequisite(s): NURS 740 and NURS 741.

Fee: An additional \$100.00 is charged for this course.

Description: This course introduces the advanced psychomotor and diagnostic skills used to perform procedures that are commonly performed in the acute care setting. Emphasis is placed on clinical indications, procedural techniques, and potential complications. Skills are taught in laboratories with a hands-on approach before application in the clinical setting. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

NURS 781. Diagnosis & Management in Acute Care II 3 Units

Prerequisite(s): NURS 779.

Fee: An additional \$150.00 is charged for this course.

Description: This course provides an in-depth analysis of adult acute-gerontology acute care in the areas of renal, autoimmune, gastrointestinal disease and trauma. Emphasis is placed on differentiating signs and symptoms, formulating diagnoses, and developing culturally competent plans of care in adolescents or adults with acute, complex, and/or critical illnesses or acute exacerbations of chronic or comorbid conditions. The advanced practice nurse's role will be examined both as an individual practitioner and as a member for a collaborative healthcare team.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

NURS 782. Clinical Practicum: Population specific clinical for the NP 1-6 Units

Grading Basis: Pass/Fail

Term Typically Offered: Fall, Spring, Summer

Fee: An additional \$300.00 is charged for this course.

Description: The purpose of this course is to provide advanced clinical experiences in comprehensive patient assessment, diagnosis, and management of complex problems among select patient populations. Students will strengthen and enhance their advanced practice skills with preceptor supervision.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

NURS 783. Diagnosis & Management in Acute Care III 1 Unit

Prerequisite(s): NURS 781.

Fee: An additional \$50.00 is charged for this course.

Description: This course provides an in-depth analysis of adult-gerontology acute care in the areas of neurology, oncology and endocrine systems, as well as prevention, screening, and navigating the health care system. Emphasis is placed on differentiating signs and symptoms, formulating diagnoses, and developing culturally competent plans of care in adolescents or adults with acute, complex, and/or critical illnesses or acute exacerbation of chronic or comorbid conditions. The advanced practice nurse's role will be examined both as an individual practitioner and as a member for a collaborative healthcare team.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

NURS 784. Advanced Neonatal Pharmacology 3 Units

Prerequisite(s): NURS 741.

Fee: An additional \$150.00 is charged for this course.

Description: This course provides a basis for understanding the pharmacokinetics and actions of specific groups of drugs commonly used in neonatal advanced nursing practice. Emphasis is placed on pharmacological action of drugs, side effects, appropriate dosing, monitoring, drug interactions and guidelines for use of drugs. Legal and ethical considerations of prescriptive practice are also addressed.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

NURS 785. Advanced Neonatal Assessment 3 Units

Prerequisite(s): NURS 741.

Fee: An additional \$150.00 is charged for this course.

Description: This course is an in-depth study of neonatal assessment techniques and normal versus abnormal variations seen in the newborn. Emphasis is on the clinical presentation of the newborn utilizing concepts from developmental anatomy and physiology as well as intrauterine factors that may alter findings. Students will learn advanced physical examination, gestational age, and neurobehavioral assessment skills specific to the neonate.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

NURS 786. Human Embryology and Genetics 3 Units

Description: This course provides the student with basic knowledge of the principles of human embryology and genetics. The genetic and embryological basis for congenital malformations in the high risk neonate will be discussed. Associated fetal physiologic principles will be correlated with embryological development.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- NURS 787. Clinical Practicum for the DNP NP I** **4 Units**
Grading Basis: Pass/Fail
Term Typically Offered: Fall Only
Prerequisite(s): NURS 740 and NURS 741.
Fee 1: An additional \$400.00 is charged for this course.
Fee 2: An additional \$200.00 is charged for this course.
Fee 3: An additional \$250.00 is charged for this course.
Description: The purpose of this course is to provide clinical experience in comprehensive patient assessment, diagnosis and management of common health problems among select patient populations. Students will begin practicing the role of an APRN under preceptor supervision.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 788. Clinical Practicum for the DNP NP II** **3 Units**
Grading Basis: Pass/Fail
Term Typically Offered: Spring Only
Prerequisite(s): NURS 787.
Fee 1: An additional \$150.00 is charged for this course.
Fee 2: An additional \$300.00 is charged for this course.
Description: The purpose of this course is to provide advanced clinical experience in comprehensive patient assessment, diagnosis and management of common and complex problems among select patient populations. Students will strengthen and enhance their advanced practice skills with preceptor supervision.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 789. Clinical Practicum for the DNP NP III** **1 Unit**
Grading Basis: Pass/Fail
Term Typically Offered: Summer Only
Prerequisite(s): NURS 788.
Fee 1: An additional \$50.00 is charged for this course.
Fee 2: An additional \$100.00 is charged for this course.
Description: This clinical experience focuses on synthesis of theoretical, scientific, and clinical knowledge as well as practice-based skills in the diagnosis and management of existing and potential health problems based on appropriate standards of care. Emphasis will be placed on the collaborative and leadership roles of the advanced practice nurse in health care delivery.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 790. Special Topics: Research, Theory, Policy, Leadership or Educational Concepts for Doctoral Students** **1-6 Units**
Prerequisite(s): Admitted to the Doctoral Program; Completion of all coursework at the master's degree level.
Description: This course is an opportunity for Doctoral Students to focus study in an area of interest germane to their dissertation work. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 791. Applied Statistics for Evidence Based Practice** **3 Units**
Term Typically Offered: Fall, Summer
Fee: An additional \$150.00 is charged for this course.
Description: The focus of this course is on the application of quantitative analysis strategies and statistical interpretation of existing evidence for quality improvement. Descriptive and inferential statistics including commonly used parametric and non-parametric tests will be covered. Students will also gain experience presenting findings via narrative, tabular, and oral formats.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 792. Pharmacology for the Acute Care APRN** **1 Unit**
Term Typically Offered: Summer Only
Description: This course is designed to introduce the Advanced Practice Registered Nurse (APRN) acute care nurse practitioner student to the application of pharmacologic principles to special populations and specialized therapeutic areas.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 793. State of Science Review** **1-3 Units**
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): All required PhD course work prior to qualifying exams.
Description: Course provides the opportunity for the PhD student to develop a State-of-Science review of the literature of research relevant to nursing science in the student's focused area for dissertation under the supervision of the PhD students' Dissertation Chair.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 794. The Psychiatric Mental Health Nurse Practitioner Role** **2 Units**
Term Typically Offered: Summer Only
Description: This course will introduce the role and foundations essential to safe, effective, and culturally relevant practice for the psychiatric-mental health nurse practitioner (PMHNP) working with children, adolescents, and their families within different care settings. Developmental theories and mental and developmental disorders observed in the pediatric population will be reviewed. Evidence-based individual and group psychotherapies and safe and effective medication management strategies as we explore relevant literature, professional guidelines, and current best practices. Online and active learning tools such as Perusall, Blackboard Discussion Board, podcasts, brief lectures, as well as in-person case studies and role-plays will be used.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- NURS 796. Independent Study for Doctoral Students** 1-9 Units
Prerequisite(s): Admitted to the Doctoral Program; Completion of all coursework at the master's degree level.
Description: Allows doctoral students to work with targeted faculty on a directed project with mutually identified objectives.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 800. Pathophysiology for Pediatric Acute Care** 1 Unit
Term Typically Offered: Fall Only
Fee: An additional \$50.00 is charged for this course.
Description: This course is designed to build on the general principles of pathophysiology. Physiologic manifestations commonly occurring in the acutely ill pediatric population will be discussed.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 801. Pharmacology for Pediatric Acute Care** 1 Unit
Term Typically Offered: Fall Only
Fee: An additional \$50.00 is charged for this course.
Description: This course is designed to build on the general principles of advanced pharmacology by preparing the Advanced Practice Registered Nurse (APRN) student to apply pharmacologic principles to the pediatric acute care population.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 802. Procedures for Pediatric Acute Care** 1 Unit
Term Typically Offered: Fall Only
Fee: An additional \$50.00 is charged for this course.
Description: This course introduces the principles and psychomotor skills necessary to perform various procedures and diagnostic tests that are common in the pediatric acute care setting. Emphasis is placed on indications, procedural techniques, and potential complications. Skills will be taught via simulation-based technology.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 803. Diagnosis and Management for Pediatric Acute Care I: Special Needs in Chronic Illness** 3 Units
Term Typically Offered: Fall Only
Fee: An additional \$150.00 is charged for this course.
Description: This course provides an in-depth analysis of care of the pediatric patient with acute exacerbations of chronic illnesses. Emphasis is placed on differentiating signs and symptoms, formulating diagnoses, and developing culturally competent plans of care in infants thru adolescents. The advanced practice nurse's role will be examined both as an individual practitioner and as a member for a collaborative healthcare team.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 804. Diagnosis and Management for Pediatric Acute Care II: Acute Illness** 2 Units
Term Typically Offered: Spring Only
Fee: An additional \$100.00 is charged for this course.
Description: This course provides an in-depth analysis of the pediatric patient with acute medical conditions. Emphasis is placed on differentiating signs and symptoms, formulating diagnoses, and developing culturally competent plans of care in infants thru adolescents. The advanced practice nurse's role will be examined both as an individual practitioner and as a member for a collaborative healthcare team.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 805. Diagnosis and Management for Pediatric Acute Care III: Critical Illness** 3 Units
Fee: An additional \$150.00 is charged for this course.
Description: This course provides an in-depth analysis of the pediatric patient who is critically ill. Emphasis is placed on differentiating signs and symptoms, formulating diagnoses, and patient stabilization while developing culturally competent plans of care in infants thru adolescents. The advanced practice nurse's role will be examined both as an individual practitioner and as a member for a collaborative healthcare team.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 806. The Pediatric Acute Care Nurse Practitioner Role** 1 Unit
Fee: An additional \$50.00 is charged for this course.
Description: This course focuses on the role of the Pediatric nurse practitioner in the Acute Care setting as a leader and member of an inter-professional team and expert practitioner. Historical development of the nurse practitioner role, current scope of practice regulations, inter-professional communication, and clinical privileges are addressed.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 807. The Professional Role of the Advanced Practice Nurse** 3 Units
Term Typically Offered: Fall, Spring
Fee: An additional \$150.00 is charged for this course.
Description: The role and critical issues that define Advanced Practice Nursing will be examined. Topics related to scope of practice, interprofessional collaboration, leadership and health policy will be explored. Guidelines and standards for legal, ethical, and financial issues that are often confronted in APRN practice will be analyzed.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 809. Advanced Anatomy and Physiology for Anesthesia I** 3 Units
Term Typically Offered: Fall Only
Fee: An additional \$150.00 is charged for this course.
Description: The first of two courses designed to provide the Nurse Anesthesia Resident with an in-depth study of the structure and function of the human body, through lecture, small group laboratory, and independent study, using Digital Human Software, cadavers, prosections, radiograph images, and static models. All organ systems will be covered, with a focus on those most relevant to the field of nurse anesthesia. Special emphasis will be given to cell structure and function, membrane physiology, microcirculation, hematology, renal, and acid base balance.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- NURS 810. Advanced Anatomy & Physiology for Anesthesia II** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): NURS 809 The second of two courses designed to provide the Nurse Anesthesia Resident with an in-depth study of the structure and function of the human body, through lecture, small group laboratory, and independent study, using Digital Human Software, cadavers, prosections, radiograph images, and static models.
Fee: An additional \$150.00 is charged for this course.
Description: All organ systems will be covered, with a focus on those most relevant to the field of nurse anesthesia. Special emphasis will be given to the cardiovascular, respiratory, endocrine, gastrointestinal, central, and autonomic nervous systems, as well as the physiology of pain.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 811. Chemistry and Physics for Anesthesia** 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): Admission to Nurse Anesthesia Program This course examines fundamental principles of chemistry, biochemistry, and physics applying to anesthesia practice and pharmacological agents.
Fee: An additional \$150.00 is charged for this course.
Description: The scientific laws predicting behaviors of solids, liquids, gases, and vapors are emphasized. Other topics include anesthesia delivery systems, anesthetic agents, flammability, CO₂ absorption, electricity, radiation, and radioactivity.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 814. Intro to Anesthesia** 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): Admission to Nurse Anesthesia Program - NURSDNPNAN This course introduces the Nurse Anesthesia Resident to the OR suite and the role of the nurse anesthetist.
Fee: An additional \$150.00 is charged for this course.
Description: Content focuses on the professional role of the anesthetist in the operating suite including the ethics of consent; sterile technique; preoperative preparation; anesthesia equipment, instrumentation, and technology; airway equipment; fluid/blood monitoring and replacement equipment; interpretation of data; positioning; patient safety; induction of general anesthesia; and documentation. Patient simulation labs will be utilized for developing psychomotor skills.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 815. Foundational Principles of Anesthesia I** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): NURS 814 The first of two foundational principles courses that focuses on the fundamental principles of anesthesia management and practice.
Fee: An additional \$150.00 is charged for this course.
Description: AANA Standards for Nurse Anesthesia Practice and theory are synthesized emphasizing culturally competent individualized care across the life span. This course will provide Nurse Anesthesia Residents with knowledge regarding best practices and the safe use of anesthesia delivery systems and related equipment. Anesthetic states from sedation to general anesthesia, including regional anesthesia, and the standards of practice, including monitoring and the safe care of the patient along this continuum will be discussed. Critical thinking, patient safety principles, communication, and the professional role will be threaded throughout.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 840. Clinical Seminar I** 1 Unit
Grading Basis: Pass/Fail
Term Typically Offered: Fall, Spring
Description: Prerequisites or corequisites: NURS 787, NURS 788, NURS 789 This co-requisite course to clinical will enable students to meet competencies related to patient centered clinical care and reflect on unique aspects of the clinical experience. Skills regarding inter-professional teamwork, communication, ethical care, and application of technology will be applied to care provided in the clinical setting. Reflection of the application of these skills will allow for appraisal and growth of the student as a professional nurse practitioner. The importance of self-care for the NP professional will be highlighted throughout.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- NURS 841. Clinical Seminar II** 1 Unit
Grading Basis: Pass/Fail
Term Typically Offered: Spring Only
Fee: An additional \$50.00 is charged for this course.
Description: Prerequisites or corequisites: Enrollment in an APRN clinical course This co-requisite course to clinical will enable students to meet competencies related to patient centered clinical care and reflect on unique aspects of the clinical experience. An emphasis will be placed on recognizing and limiting personal bias in the delivery of care. Students will analyze factors such as cost, access, patient motivation, as well as social and cultural influences when developing a patient-centered plan of care. Reflection on fiduciary and social factors in the delivery of care will allow for appraisal and growth of the student as a professional nurse practitioner. The importance of self-care for the NP professional will be highlighted throughout.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

NURS 844. Advanced Practice Care: Birth up to 2 years of age 2 Units**Term Typically Offered:** Spring Only

Description: This course focuses on the care of the neonate and infants up to 2 years of age. Emphasis is placed on the identification of normal and abnormal growth and development milestones, in both the primary and acute care settings. This course is designed to develop critical thinking skills as they relate to health promotion, immunizations, preventative care, routine developmental and physiologic screenings, and safety issues. Additionally, the care of high-risk-infants with chronic disorders will be addressed, along with common primary care disorders encountered in this age group.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Oral Biology (OBIO)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

OBIO 611. Craniofacial Osteology 1-3 Units**Grading Basis:** Pass/Fail**Term Typically Offered:** Not Offered**Prerequisite(s):** OPGD 801, OPGD 805, RARD 805 or equivalents.

Description: Explores the hard tissue interrelationships of the craniofacial complex. Includes the mechanical properties, origins and maturation of facial bones. Complements the cephalometric course; designed to link clinical applications to anatomic locations.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

OBIO 612. Craniomaxillofacial Diagnostic Imaging 2-4 Units**Term Typically Offered:** Spring Only

Prerequisite(s): Admission to the Graduate School for students in Oral Biology, a DMS/DDS degree or its foreign equivalent, or a MD/DO degree or its foreign equivalent.

Description: Principles of safety, quality assurance, selection criteria and interpretation for current diagnostic imaging modalities of interest to the healthcare provider treating the craniomaxillofacial complex.

Note: 2 lecture, 2-4 lab.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

OBIO 613. The Diagnosis & Treatment of Temporomandibular Disorders 1 Unit**Grading Basis:** Pass/Fail**Term Typically Offered:** Fall Only**Prerequisite(s):** DMD or DSD degree or instructor approval.

Description: Will present the basic concepts of Temporomandibular Disorders. Emphasis is on Etiology, Examination, Recognition, Diagnosis and Treatment of Facial Pain/TMJ Disorders and Occlusal Abnormalities. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

OBIO 614. Advanced Oral Diagnosis and Oral Medicine 1 Unit**Grading Basis:** Pass/Fail**Term Typically Offered:** Not Offered

Prerequisite(s): Admission to the MS Oral Biology program, a DDS or DMD degree or its foreign equivalent, or consent of the instructor.

Description: Will present advanced topics on diagnostic methods and therapy relative to oral-maxillofacial and systematic diseases, and the inter-relationships between oral and systemic disease.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

OBIO 615. Advanced Clinical Pharmacology 1 Unit**Grading Basis:** Pass/Fail**Term Typically Offered:** Spring Only

Prerequisite(s): One of the following: Admission to the MS Oral Biology program; a DDS or DMD degree or its foreign equivalent; consent of the instructor.

Description: To present advanced topics in clinical pharmacology with specific emphasis on antibiotics, analgesics, local anesthetics, anxiolytic, antifungal and antiviral drugs.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

OBIO 616. Overview of Medical Genetics in Oro-Facial Disease 1.5 Units**Grading Basis:** Pass/Fail**Term Typically Offered:** Not Offered

Prerequisite(s): Admission to the MS Oral Biology program, a DDS, DMD or MD degree or its foreign equivalent, or consent of the instructor.

Description: The student will study the medical genetic influence on development and growth as well as dysmorphology and disease, of the human body. Risk factors, probabilities and clinical outcomes are emphasized.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

OBIO 617. Advanced Oral Pathology 1 Unit**Grading Basis:** Pass/Fail**Term Typically Offered:** Fall Only

Prerequisite(s): Admission to the MS Oral Biology program, a DDS, DMD, or MD degree or its foreign equivalent, or consent of the instructor.

Description: Introduction to the clinical and radiographic manifestations of diseases of the oral cavity and para-oral region. Also included will be the clinical differential diagnosis oral lesions and the etiology and histology of common oral lesions. Clinical evaluation and management of oral lesions will be discussed as well.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

OBIO 622. Multiple-Disciplinary Seminars

1 Unit

Grading Basis: Pass/Fail

Term Typically Offered: Fall, Spring

Prerequisite(s): Enrollment in the MS in Dentistry, GPR, OMFS programs, or MS in Oral Biology programs.

Description: Case-based multi-disciplinary seminar where topics of clinical interest are presented by postgraduate students/residents in the Master of Science in Dentistry program, as well as OMFS and GPR residents. Discussion is facilitated by faculty. The course is continuous for both the Fall and Spring semesters and students must enroll in both semesters to receive credit. The course provides interdisciplinary discussion of diagnosis and treatment of oral pathologies.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

OBIO 623. Advanced Implantology

1 Unit

Grading Basis: Pass/Fail

Term Typically Offered: Fall Only

Prerequisite(s): Enrollment in the MS in Dentistry program or MS in Oral Biology program.

Description: Seminar review of the fundamental concepts of implantology including both surgical and restorative phases, the biologic basis of implantology, the advantages and disadvantages of different implant systems, and practice sessions placing implants and complete preparation for the clinical use of implants.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Oral Immunology and Infectious Diseases (OIID)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

OIID 501. Biomedical Data Analysis: Experimental Design and Statistics

3 Units

Term Typically Offered: Fall Only

Prerequisite(s): Acceptance to a graduate program or permission of course director.

Description: OIID 501 is designed for graduate and professional students in health sciences who require a working knowledge of the experimental design and statistical methods most often utilized in the biomedical sciences. The focus is upon the initial evaluation of scientific literature, the formulation of research protocols, and the interpretation of data. Special attention is given to those areas of data interpretation most common in the health sciences. Fall semesters.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

OIID 600. Concepts in Oral Immunology

2 Units

Term Typically Offered: Spring Only

Prerequisite(s): Students should have previously taken a basic immunology course or consent of instructor.

Description: To provide an in-depth analysis of how the host's immune system within the oral cavity is involved in mediating host immunity against periodontal pathogens, as well as defining the immunological events underlying the initiation and progression of periodontal diseases.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

OIID 601. Introduction to Oral Biology Research

2 Units

Prerequisite(s): Acceptance to an Oral Biology degree program or consent of course director.

Description: An introduction to modern research methodology in oral biology. Designed to acquaint the student with a broad spectrum of experimental techniques and concepts which will help prepare for successful design of a research project. Major emphasis is placed on research design, research methodology, critical evaluation of basic research literature, and scientific writing.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

OIID 604. Oral Microbiology

3 Units

Term Typically Offered: Spring Only

Prerequisite(s): Acceptance to an Oral Biology degree program or consent of course director.

Description: An in-depth study of the microbiota and host defense mechanisms with an emphasis on the ecology, nutrition, and biochemistry of the indigenous bacteria.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- OIID 605. Oral Health Seminars** 0.5 Units
Grading Basis: Pass/Fail
Prerequisite(s): Acceptance to the MSOB program or consent of course director.
Description: Biomedical research seminars describing basic and clinical research by internal and external faculty and postdoctoral research associates. Students will learn about the breadth of faculty biomedical research, providing context for their own research. The seminars are at least monthly, and the course is continuous through the fall and spring semesters.
Note: A required course for most students in the Master of Science in Oral Biology (MSOB) program.
Note: Students must enroll in both Fall and Spring semesters to receive full credit.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- OIID 606. Oral Biology Communication** 2 Units
Term Typically Offered: Spring Only
Prerequisite(s): OIID 601.
Description: Provided to MS and PhD students, and to dental residents. The goal of this course is for students to develop their research plan and to become familiar with presenting and defending research findings in a scientific setting. The students will: prepare a scientific abstract in the style of the Journal of the American Dental Association; give a 15-minute seminar describing their research project; answer questions on their talk; and contribute to discussions and feedback on the research of classmates.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- OIID 610. Advanced Topics in Oral Biology** 1-4 Units
Prerequisite(s): OIID 601 or OBIO 601; consent of Graduate Program Director.
Description: This course allows graduate credit to be obtained for guided readings or other specialized studies needed to enhance the student's understanding of their thesis research project. This course can be used for a student to read and discuss a series of advanced publications with a faculty guide other than their primary mentor, in order to build expertise in a specialized area relevant to their research project. Guided readings with a Thesis Committee faculty (other than the mentor) can be particularly important for an interdisciplinary project. This course is intended for specialized in depth studies beyond what is appropriate in a classroom setting. The faculty and student must obtain approval from the Graduate Program Director for this course prior to registering. The faculty guide should send an email to the Graduate Director at the beginning of the semester describing the goals and expected effort and number of credits. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- OIID 619. Graduate Research** 1-8 Units
Grading Basis: Pass/Fail
Prerequisite(s): Acceptance to a graduate degree program or consent of course director.
Description: Allows graduate credit to be obtained for performing biomedical research. The student will perform research under the supervision of a primary mentor who is specifically named in the Thesis Committee Form that is required to be completed by all students during their first semester and signed by student, committee members and the Program Director. Research hours and duties are as defined by the mentor in conjunction with the student.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- OIID 620. Thesis** 1-8 Units
Grading Basis: Pass/Fail
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Acceptance to an Oral Biology degree program or consent of course director.
Description: This course allows graduate credit to be obtained for all aspects of writing the students thesis or writing a research article suitable for publication.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- OIID 800. Correlated Sciences** 1 Unit
Grading Basis: Pass/Fail
Prerequisite(s): Acceptance to the DMD program.
Description: OIID 800 is provided in the first semester of the DMD program. The diverse range of didactic lectures in OIID 800 is intended to introduce the concept of the need to maintain a holistic scientific view of the body when providing dental care. The course will introduce anatomical, historical, immunological, biochemical, physiological, microbiological, pharmacological and pathological research concepts that will ultimately, lead to improvements in the examination, evaluation, diagnosis and/or treatment of dental patients. OIID 800 will introduce the wide range of clinical, basic and transnational research that currently takes place in the School of Dentistry and how you can become actively involved.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- OIID 804. DMD Research** 2-8 Units
Grading Basis: Pass/Fail
Prerequisite(s): Acceptance to the DMD program and to a research program.
Description: OIID 804 gives credit to DMD students participating in a research program such as the ULSD Summer Research Program. Students should apply for a Summer Research Program during the spring semester, participate in research during the summer, and present at Research Louisville in the Fall semester. Applications are through the ULSD Associate Dean for Research + Enterprise. Students receive 2 credits for each semester doing research.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Pan-African Studies (PAS)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any

given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

PAS 500. Cooperative Internship in Pan-African Studies **3-6 Units**

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): 12 hours PAS above introductory level.

Description: Assignment with a public agency or organization. Written report and periodic consultation with a professor may be required.

Note: May be repeated for credit but only 3 hours apply towards major or minor.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 503. Epistemologies of Black Studies **3 Units**

Term Typically Offered: Fall Odd Years

Description: The purpose of this course is to explore distinctively African approaches to knowledge, learning, and teaching. Because the course is designed to address conditions as well as conceptions of knowledge making, we will take up African American history, sociology, and the arts, as well as philosophy. The students will be introduced to different perspectives, which seek to examine the nature of African reality.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 505. The Black Atlantic **3 Units**

Prerequisite(s): 12 hours PAS credit or consent of instructor.

Description: Examination of the intercultural and transnational linkage of Africans in England, North and South America, the Caribbean and the African continent. (Social Sciences)

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 506. Service Learning **3 Units**

Description: Placement of students in nonprofit organizations in the Louisville metropolitan region to provide research or programmatic assistance to local community groups. Written reports and frequent consultation with a professor may be required.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 508. Independent Study **3 Units**

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): Overall GPA of 3.0, a GPA of 3.5 in the department and at least 18 semester hours credit in the department.

Description: Independent study on a topic related to the African Diaspora. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 509. Advanced Contemporary Trends in African-American Art **3 Units**

Prerequisite(s): One 300-level art history course or faculty consent.

Description: Survey of contemporary African-American art since the 1960s into current trends today. Examination of contemporary paintings, sculpture, fabric art, folk art, public art, and installation art. (Humanities)

Note: Undergraduate credit may not be earned for this course and PAS 308 or ARTH 349.

Note: Cross-listed with ARTH 549.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 510. Advanced Topics in Afro-American and African Studies **3 Units**

Description: Advanced study of a particular topic, issue or area in African-American culture or history, to be announced in Schedule of Courses.

Note: May be repeated as topics vary, but no more than six hours will be accepted in the major.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 512. Gender, Race, Work, and Welfare **3 Units**

Prerequisite(s): 9 hours of social sciences work at the 300 level or above; or consent of instructor.

Description: Introduction to theory and research on labor market and welfare state with focus on gender race/ethnicity as they influence women's experiences of and ideas about work and welfare.

Note: Cross-listed with PAS 612, WGST 512, WGST 612, and SOC 612.

Note: Credit may not be earned for both WGST 512/PAS 512 and SOC 612/WGST 612/PAS 612.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 513. U.S. Social Justice Movements of the 20th Century **3 Units**

Term Typically Offered: Fall, Spring

Prerequisite(s): Junior standing.

Description: Course will begin with abolitionism, then concentrate on social justice upsurges of the 20th century, with emphasis on women in the civil rights and Black liberation movements. (Social Sciences)

Note: Cross-listed with HIST 513, WGST 513, SCHG 513, WGST 613.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 514. History of Pan-African Social Thought **3 Units**

Prerequisite(s): Consent of instructor.

Description: Contributions of African and African-American social theorists from Marcus Garvey to Cornell West; role of ideology in relations of domination and oppression. (Social Sciences)

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- PAS 516. African-American Philosophy** **3 Units**
Term Typically Offered: Occasionally Offered
Prerequisite(s): PHIL 205 or PHIL 303 or PHIL 304.
Description: Analysis of works and theories of major recent and contemporary African-American philosophers within the themes of Pan-African debates. (Humanities)
Note: Cross-listed with PHIL 516.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PAS 520. The Black Family - WR** **3 Units**
Prerequisite(s): Senior standing.
Description: Nature and function of African-American familial systems from the slave era to the present. Emphasis on impact of public policy on socioeconomic and political status of Black family structures. (Social Sciences)
Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PAS 521. Religions of the African Diaspora** **3 Units**
Term Typically Offered: Occasionally Offered
Description: Exploration of religious practices of the African World: Yoruba, Santeria, Vodun/Voodoo, Rastafarianism, Gullah with an emphasis on their African and syncretic names. (Humanities)
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PAS 526. Black Heritage Preservation** **3 Units**
Description: An introduction to the interpretive, legal, social and political aspects of historical preservation with a focus on the Black experience, preservation laws, and the power of public memory. An introduction to local, state, and national agencies responsible for site designation, oversight and protection of historical sites and legacies, as well as research and documentation necessary to obtain historical site designations. (Social Sciences)
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PAS 527. Underground Railroad in the Diaspora** **3 Units**
Term Typically Offered: Occasionally Offered
Description: Applied research on the people, events, causes, and methods employed in creating, sustaining and operating a national and international Underground Railroad movement. (Social Sciences)
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PAS 529. Teacher Institute on African-American Issues** **3 Units**
Description: An introduction to Pan-African Studies focusing on multicultural educational strategies for public school educators. (Social Sciences)
Note: Cross-listed with EDAP 590.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PAS 530. The Life and Times of Malcolm X** **3 Units**
Prerequisite(s): Senior standing.
Description: An examination of the career of Malcolm X that engages the intersections of his political thought and public advocacy work with broader trends in United States and world affairs including colonialism and decolonization, the U.S. civil rights movement, and Black Arts and Black Power movements. The course critically examines his ideas about culture, history, and identity, and analyzes the use to which the figure of Malcolm X is put in the United States' popular culture and historical discourses. (Social Sciences)
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PAS 531. Survey of African-American History and Culture for Teachers** **3 Units**
Description: An intensive survey of the history and culture of African Americans for teachers. (Social Sciences)
Note: Cross-listed with EDAP 592.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PAS 532. Slave Trade and Slavery in the African World** **3 Units**
Prerequisite(s): Senior or graduate standing.
Description: An in-depth examination of the evolution and characteristics in the western world, the mechanics and organization of the African slave trade, the nature and types of slave societies established in Europe and the Americas, and the impact of slave trade in Africa. (Social Sciences)
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PAS 533. The History and Popular Culture of the African Diaspora** **3 Units**
Prerequisite(s): Senior or graduate standing.
Description: An intensive, comparative examination of selected topics linking the history and culture of persons of African ancestry in the United States, the Caribbean region, Latin America and Africa. (Social Sciences)
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PAS 535. History of African Americans in Kentucky** **3 Units**
Prerequisite(s): Senior standing or faculty consent.
Description: The history of African Americans in Kentucky from the settlement of the trans-Appalachian region to the present. Special attention to the history of African Americans in Louisville and Jefferson County. The use of primary, secondary, and oral historical sources will be emphasized. (Social Sciences)
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PAS 539. Public History in African Diaspora** **3 Units**
Description: Key issues, primary and secondary sources, and research methods for studying the experiences of persons of African ancestry in the Caribbean, Europe, Latin America, and Brazil. Examination of the challenges and strategies related to interpreting and preserving the Diasporic experience at historic sites, in museums and other public settings. (Social Sciences)
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 540. Pedagogy of African Studies 3 Units

Description: Designed for teachers preparing to introduce African Studies materials to primary and secondary school students. (Social Sciences)
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 541. Cultural Heritage, Tourism, and Globalization 3 Units

Description: This course is designed to familiarize you with the anthropological literature on the origins, nature, and character of tourism. It will analyze the way cultural heritage sites become contested spaces, representative of memory, nationhood, history, and culture with particular emphasis on Jewish history and culture in Europe and African Americans in the U.S. (Social Sciences)

Note: Previously cross-listed with ANTH 532.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 542. Black Women's Voices - WR 3 Units

Prerequisite(s): At least 6 credit hours in Social Science or Humanities or consent of faculty.

Description: Global synopsis of black women's studies and social thoughts. Highlights roadblocks and bridges experienced. Captures race, gender, class and spatial dimensions. (Social Sciences)

Note: Cross-listed with WGST 543.

Note: Approved for the Arts & Sciences upper-level requirement in written communication (WR).

Note: Credit may not be earned for both PAS 542/WGST 543 and PAS 643/WGST 643.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 545. Southern Women: Black and White 3 Units

Term Typically Offered: Occasionally Offered

Description: Course focuses on questions of identity for southern women, black and white, by contrasting stereotypes and ideals with realities for these women in the slave, Jim Crow, and modern South. (Social Sciences)

Note: Cross-listed with WGST 545.

Note: Credit may not be earned for this course and PAS 645 or WGST 645.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 546. African Languages in the Diaspora 3 Units

Prerequisite(s): junior standing.

Description: Course investigates the intersections of linguistic behavior from the perspective of the global African Diaspora. Explores the many manifestations of African and other linguistic influences as seen through an analysis of various media. (Humanities)

Note: Credit may not be earned for this course and PAS 346.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 547. Language, Race, Class and Gender 3 Units

Prerequisite(s): Junior standing.

Description: Course investigates the intersections of linguistic behavior with questions of race, class and gender. Students will gain an understanding of the multiple characteristics of communication. (Humanities)

Note: Credit may not be earned for this course and WGST 547.

Note: Cross-listed with WGST 547.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 548. Black Museums and Cultural Heritage 3 Units

Prerequisite(s): 6 credit hours completed in Anthropology or Pan African Studies.

Description: Examination of historical and cultural dimensions of museums and heritage sites in Africa and Africa Diaspora. Representation of Africana ethnic groups depicted in museum setting and public culture. (Social Sciences)

Note: Graduate credit may not be earned for both PAS 548 and PAS 648.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 549. African Americans in Louisville, Kentucky 3 Units

Term Typically Offered: Occasionally Offered

Description: In-depth examination of the history of African Americans in Louisville, Kentucky, from the settlement of the trans-Appalachian west to the present. Through the use of primary, secondary and oral historical sources, the course will focus on the social, cultural, political and economic dimensions of African-American life in Kentucky's largest metropolitan area. (Social Sciences)

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 550. African Popular Culture 3 Units

Description: Examination of the popular arts of Africa, focusing on the variety of aesthetic forms, performance styles, and the sociocultural and political contexts in which they are found. (Humanities)

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 551. Studies in African-American Literature 3 Units

Prerequisite(s): Junior standing; ENGL 102 or ENGL 105.

Description: In-depth study of selected movements, topics, or groupings of African-American writers. (Humanities)

Note: Cross-listed with ENGL 550.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- PAS 557. African Philosophy** 3 Units
Term Typically Offered: Occasionally Offered
Prerequisite(s): PHIL 301, or PHIL 302, or PHIL 303, or PHIL 304.
Description: Descriptive and analytical introduction to the ideas and themes in African philosophy through careful readings of texts which address a cluster of topics. (Humanities)
Note: Cross-listed with PHIL 557.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PAS 566. Race and Gender in Psychological Research** 3 Units
Description: Critical review of psychology with respect to issues of race and gender. Examines theory and research paradigms, modern, postmodern and Afrocentric methodologies. (Social Sciences)
Note: Cross-listed with PSYC 566.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PAS 567. Post-Colonial Voices: Writing Experience in African Literature - WR** 3 Units
Prerequisite(s): ENGL 102 or ENGL 105; Junior standing.
Description: Examination of "post-coloniality" through a selection of fiction and literary criticism by African writers. Historical period: post-1900.
Note: Cross-listed with ENGL 567.
Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PAS 575. Genre Studies in African-American Literature** 3 Units
Prerequisite(s): Junior standing; ENGL 102 or ENGL 105.
Description: In-depth study of a selected genre of African-American literature. (Humanities)
Note: Cross-listed with ENGL 575.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PAS 577. The Harlem Renaissance** 3 Units
Prerequisite(s): Junior standing; ENGL 102 or ENGL 105.
Description: In-depth study of the literature of the Harlem Renaissance in relation to other literary and artistic productions of the period and to cultural and historical contexts. (Humanities)
Note: Cross-listed with ENGL 577.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PAS 578. The Music of the Black Church** 3 Units
Term Typically Offered: Fall, Spring
Description: This course is designed for the upper division or graduate student in music or Pan-African studies and explores the historical and musical development of African-American sacred music from slavery to the present; from Spirituals to traditional and contemporary Gospel music. Special emphasis is given to the impact that this music has had on African-American culture in the United States, which represents a synthesis of African and European cultures into a unique hybrid with its own tradition of development.
Note: Cross-listed with MUS 578.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PAS 581. Pan-African Art: Form and Content** 3 Units
Prerequisite(s): Consent of instructor.
Description: Similarities and differences in African-American folk art, Caribbean folk art and traditional African art. (Humanities)
Note: Cross-listed with ARTH 544.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PAS 586. Field Research** 3-6 Units
Prerequisite(s): 12 hours PAS credit or consent of instructor.
Description: On-site field study of a particular aspect of society in the African Diaspora.
Note: Maximum of 6 credit hours, depending upon project.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PAS 590. Studies in African History - WR** 3 Units
Prerequisite(s): Junior standing or faculty consent.
Description: Intensive study of a particular topic chosen by the instructor, for example, slavery and the slave trade, traditional kingdoms. (Social Sciences)
Note: Cross-listed with HIST 590.
Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).
Note: Nine prior hours of HIST or PAS is recommended.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PAS 601. Pan-African Research** 3 Units
Prerequisite(s): Admission to graduate school.
Description: Students learn the tools necessary to conduct research and challenge Eurocentric biases in traditional modes of inquiry. It asks: are there distinctive methods that are appropriate in studying people and issues from the African Diaspora and other Non-Western Societies? For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- PAS 602. Theories And Issues in Pan-African Studies** **3 Units**
Prerequisite(s): Admission to graduate school.
Description: PAS 602 explores the historical development, major theoretical perspectives, salient contemporary issues, long-term research agenda and future trends of the multi-disciplinary field of Pan-African Studies.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PAS 603. Epistemologies of Black Studies** **3 Units**
Term Typically Offered: Fall Odd Years
Description: The purpose of this course is to explore distinctively African approaches to knowledge, learning, and teaching. Because the course is designed to address conditions as well as conceptions of knowledge making, we will take up African American history, sociology, and the arts, as well as philosophy. The students will be introduced to different perspectives, which seek to examine the nature of African reality.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PAS 604. Thesis** **3 Units**
Grading Basis: Pass/Fail
Prerequisite(s): Completion of 24 hours toward MA in Pan-African Studies.
Description: Thesis research for the Masters of Arts in Pan-African Studies.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PAS 605. Special Topics in Pan-African Studies** **3 Units**
Description: Examination of a specific social, cultural or historical theme related to persons of African ancestry, past or present, in one or more regions of the world.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PAS 606. Independent Study** **1-3 Units**
Prerequisite(s): Graduate standing.
Description: Opportunity for the student, under the supervision of a sponsoring faculty member, to pursue individualized study related to research or practice that is not included in regular courses in the curriculum.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PAS 611. Race and Ethnicity in the Diaspora** **3 Units**
Term Typically Offered: Fall Odd Years
Description: Using a variety of critical, primary, and theoretical texts, this seminar probes race and ethnicity's significance in the African Diaspora. It analyzes and critiques these concepts' multifaceted ramifications, unearth the ways in which social relations, identities, institutional and political power relations, economic viability, individual freedom, group autonomy, and cultural invisibility, among other things, are defined and circumscribed by race and ethnicity across the Diaspora. The seminar focuses on the US, the Caribbean, and Brazil.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PAS 612. Gender, Race, Work, and Welfare** **3 Units**
Prerequisite(s): 9 hours of social sciences work at the 300 level or above; or consent of instructor.
Description: Introduction to theory and research on labor market and welfare state with focus on gender race/ethnicity as they influence women's experiences of and ideas about work and welfare.
Note: Cross-listed with PAS 512, WGST 512, WGST 612, and SOC 612.
Note: Credit may not be earned for both WGST 512/PAS 512 and SOC 612/WGST 612/PAS 512.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PAS 613. Seminar on Black Political Economy** **3 Units**
Description: Seminar focusing on the economic status and role of African Americans in the U.S. with emphasis on the southern United States.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PAS 614. History of Pan-African Social Thought** **3 Units**
Prerequisite(s): Graduate standing.
Description: Writings and critiques of the major African descended thinkers of the 20th century. Special emphasis on the ideas of Booker T. Washington, W.E.B. DuBois, Marcus Garvey, Martin Luther King, Jr., and Malcolm X.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PAS 615. Theories of Race and Racism** **3 Units**
Prerequisite(s): Students must be enrolled in a graduate program.
Description: This course provides an intensive examination of the evolution, meaning, and significance of race and racism as historical and social constructs. Prominent theories of race and racism are examined. (Social Sciences)
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PAS 616. African-American Philosophy** **3 Units**
Description: Analysis of works and theories of major recent and contemporary African-American philosophies within the themes of Pan-African debates.
Note: Cross-listed with PHIL 616.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PAS 617. African-American Public History** **3 Units**
Description: Examination of the key issues, primary and secondary sources, and research methods for studying the African-American experience. Exploration of the challenges and strategies related to interpreting and preserving the African-American experience at historical sites, in museums and in other public settings. (Social Sciences)
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 618. Museums and Culture: Exhibiting African Americans and Others 3 Units

Prerequisite(s): Restricted to graduate students.

Description: The ways in which the history and culture of African Americans and others have been depicted in the museums, expositions and "world fairs" of the United States.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 619. Advanced Seminar in African-American Studies 3 Units

Prerequisite(s): Graduate standing.

Description: An intensive examination of selected topics in African-American history and culture.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 620. Black Literature & Popular Culture 3 Units

Prerequisite(s): Restricted to graduate students.

Description: Explores the relationship between the black literacy and popular arts in Africa, the United States and the Caribbean taking into consideration a variety of aesthetic forms, performance styles, struggles, conflicts and pleasures that matter to the majority of contemporary black people in their richly-diverse lived experiences.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 621. Religions of the African Diaspora 3 Units

Description: Exploration of religious practices of the African World: Yoruba, Santeria, Vodun/Voodoo, Rastafarianism, and Gullah with an emphasis on their African and syncretic natures.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 622. Theories of the Pan-African Diaspora 3 Units

Prerequisite(s): PAS 602 and PAS 614; special permission is required for any Social Sciences prerequisite waivers.

Description: The course gives students a foundation on which to build their intellectual base, challenge the social construction of knowledge, and provide an epistemological stance for Black Studies. The course also highlights the role of human agency in research and scholarship as well as in political, social, and cultural movements.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 623. Qualitative Research Strategies and Pan-African Research 3 Units

Prerequisite(s): PAS 601.

Description: Introduction to the process elements, the tools and the analytical skills required to collect and analyze qualitative data. Approaches qualitative research designs and various qualitative research methodologies and modes of inquiry. (Social Sciences)

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 624. Quantitative Research Strategies and Pan-African Research 3 Units

Prerequisite(s): PAS 601.

Description: Principles of quantitative methodology. Specifically, students learn how to craft a research question, identify an appropriate sample, conduct a quantitative analysis, and interpret the results. (Social Sciences)

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 625. African Americans in Contemporary American Society 3 Units

Description: An intensive, multi-disciplinary examination of the status of African Americans in the Post-Civil Rights Era (since 1970). Focus specifically on the demography, politics, social-cultural, educational and economic realities of contemporary African Americans.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 626. Black Heritage Preservation 3 Units

Description: An introduction to the interpretive, legal, social and political aspects of historical preservation with a focus on the Black experience, preservation laws, and the power of public memory. Introduction to local, state, and national agencies responsible for site designation, oversight and protection of historic sites and legacies, as well as the research and documentation necessary to obtain historical site designations. (Social Sciences)

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 627. Underground Railroad in the Diaspora 3 Units

Description: Applied research on the people, events, causes, and methods employed in creating, sustaining, and operating a national and international Underground Railroad movement. (Social Sciences)

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 628. African-American Education 3 Units

Prerequisite(s): Must be enrolled in a graduate program.

Description: The purpose of this course is to immerse students in a critical discussion of the history and current debates around African-American education. It is the goal of this course to develop students' understanding of the importance of education in the lives of all Americans, particularly African Americans, and the struggle for equality that continues today. (Social Sciences)

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 630. The Life and Times of Malcolm X 3 Units

Prerequisite(s): Graduate standing.

Description: An examination of the career of Malcolm X that engages the intersections of his political thought and public advocacy with broader trends in the United States and world affairs including colonialism and decolonization, the U.S. Civil Rights Movement, and the Black Arts and Black Power movements. The course critically examines his ideas about culture, history, and identity, and analyzes the use to which the figure of Malcolm X is put in the United States; popular culture and historical discourses. (Social Sciences)

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 639. Public History in African Diaspora 3 Units

Description: Key issues, primary and secondary sources, and research methods for studying the experiences of persons of African ancestry in the Caribbean, Europe, Latin America, and Brazil. Examination of the challenges and strategies related to interpreting and preserving the Diasporic experience at historic sites, in museums and other public settings. (Social Sciences)

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 643. Black Women's Voices 3 Units

Prerequisite(s): Graduate standing.

Description: Global synopsis of black women's studies and social thoughts. Highlights roadblocks and bridges experienced. Captures race, gender, class and spatial dimensions.

Note: Cross-listed with WGST 643.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 645. Southern Women: Black and White 3 Units

Description: Course focuses on questions of identity of southern women, black and white by contrasting stereotypes and ideals with realities for these women in the slave, Jim Crow, and modern south.

Note: Cross-listed with WGST 645.

Note: Credit may not be earned for this course and PAS 545 or WGST 545.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 648. Black Museums and Cultural Heritage 3 Units

Description: Examination of historical and cultural dimensions of museums and heritage sites in Africa and the African Diaspora. Representation of Africana ethnic groups depicted in museum setting and public culture. (Social Sciences)

Note: Graduate credit may not be earned for both PAS 548 & PAS 648.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 649. African Americans in Louisville, Kentucky 3 Units

Description: In-depth examination of the history of African Americans in Louisville, Kentucky, from the settlement of trans-Appalachian west to present. Through the use of primary, secondary and oral historical sources, the course will focus on the social, cultural, political and economic dimensions of African-American life in Kentucky's largest metropolitan area. (Social Sciences)

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 650. Seminar on Black Culture: Herskovits 3 Units

Description: Examination of social science literature surrounding the origins, nature and function of African-American culture and its evolution over more than a hundred-year period. Ethnographic and theoretical perspectives will be examined in concert with government policies, funding agencies and scholars who acted as research "gatekeepers", as well as the historical counters during which these theories were developed. (Social Science)

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 657. African Philosophy 3 Units

Prerequisite(s): Graduate standing.

Description: This course gives students a general descriptive and analytical introduction to the ideas and themes in African philosophy through careful readings of the texts which address a cluster of topics.

Note: Cross-listed with PHIL 657.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 664. Approaching African-American Theatre 3 Units

Description: Theoretical approaches and practical methods of performing, designing, staging and teaching theatre, literature, and art that spring from an Afrocentric perspective. Designed to prepare students to integrate African-American topics into their teaching and to collaborate successfully as artists.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 686. Field Study 3-6 Units

Prerequisite(s): Admission to graduate school.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 701. Doctoral Exam Preparation 3-6 Units

Grading Basis: Pass/Fail

Prerequisite(s): Permission of the department's graduate studies director.

Description: Reading in preparation for the comprehensive and special topics examinations.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 702. Dissertation Research 2-9 Units

Grading Basis: Pass/Fail

Prerequisite(s): Permission of the department's graduate studies director.

Description: Conduct of research for dissertation.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PAS 703. Pro-Seminar, Pan-African Studies 0 Units

Grading Basis: Pass/Fail

Prerequisite(s): Permission of department's graduate studies director.

Description: Conduct of professional seminars and workshops.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Peace, Justice and Conflict Transformation (PEAC)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

PEAC 525. Peace, Justice & Conflict Transformation 3 Units

Term Typically Offered: Occasionally Offered

Prerequisite(s): Graduate standing.

Description: Introduces fundamental issues within the broad realm of Peace Studies and deepens student skills in critical thinking, conflict analysis, and problem solving. Core issues: conflict analysis, non-violent action, violence prevention, warism, peacebuilding, and gender and peace.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PEAC 545. Basic Mediation & Conflict Transformation 3 Units

Prerequisite(s): Graduate standing.

Description: Basic skills include understanding the place and role of mediation as a conflict resolution tool; applying techniques for constructive negotiation; understanding sources of conflict and recognizing conflict management styles; gaining practical experience in conflict resolution techniques and skill building; understanding stages of mediation; acquiring listening and communication skills; understanding directive, facilitative, and transformative styles of mediation.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PEAC 550. Service Learning in Peacebuilding 3 Units

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): PEAC 325 and PEAC 350.

Description: All students will complete service learning in peace-building after completing other requirements for certificate in Peace, Justice & Conflict Transformation. They will work within an approved organization whose focus is some aspect of peace, justice, or conflict transformation. The objective is for them to learn first-hand how principles and theories studied in previous classes are applied in the field. (Social Science)

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PEAC 575. Independent Study in Peace, Justice & Conflict Transformation 1-5 Units

Prerequisite(s): Minimum GPA of 3.0, or at least 45 semester hours credit, and permission of PJCT Director.

Description: Independent study is available to selected undergraduates or graduate students with a specific topic to focus upon that fits within the broad sphere of Peace, Justice & Conflict Transformation. Students will be supervised by either the director of the program or another individual appropriate for the selected topic.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Pharmacology and Toxicology (PHTX)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

PHTX 606. Seminar 1 Unit

Description: The fall semester of Pharmacology seminar is designed to introduce first- and second-year graduate students to the formal organization of a scientific presentation.

Note: Graded on a Pass-Fail basis.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- PHTX 616. Advanced Pharmacology** 1-12 Units
Description: Work conducted outside the thesis area and with a preceptor other than the thesis director. By special arrangement.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHTX 617. Laboratory Rotation Research** 1 Unit
Description: The purpose of this course is to provide students in search of a laboratory in which to perform thesis/dissertation research the opportunity to become acquainted with the research of particular faculty and the techniques used in that faculty's laboratory. Students will approximately 10-15 hours per week conducting literature surveys and conducting experiments under the direction of graduate faculty mentor. They will function as a member of the laboratory for the duration of the rotation. Rotations are for one-half semester each. Students will do two rotations in a semester. Course may be retaken once.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHTX 618. Topics in Pharmacology & Toxicology** 1-12 Units
Prerequisite(s): Department majors only.
Description: Topics of current interest in Pharmacology and Toxicology. By special arrangement.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHTX 619. Research** 1-12 Units
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHTX 625. Scientific Writing** 2 Units
Description: This course is to give students hands-on experience with writing and critiquing scientific papers and proposals. The course will involve both didactic lectures and student presentations and workshops. Students will be graded on their class involvement, presentations, and homework assignments. No special restrictions or conditions are stipulated.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHTX 631. Risk Assessment** 1 Unit
Description: This one-hour course will introduce students to the historical underpinnings of risk assessment, and to methods, policies, and procedures used by risk assessors in today's governmental bodies. At the conclusion of the course, students should understand how peer-reviewed publications, especially those demonstrating close response, are used in the derivation of acceptable exposure limits. Emphasis will be placed on the estimation of acceptable exposure limits for non-carcinogenic effects of orally encountered chemicals.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHTX 632. Analysis of Parametric & Non-parametric Data** 2 Units
Description: An introduction to descriptive and inferential statistics including exploratory analysis, graphing, descriptive methods, estimation, confidence intervals, hypothesis testing, correlation, and regression. Students will be introduced to the theory and application of one-, two- and multi-group parametric and non-parametric methods. In addition, students will learn how to calculate the odds or risk of developing disease given an exposure using simple logistic regression analysis. Students will give an oral presentation that incorporates statistical principles learned to their individual graduate research projects.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHTX 633. Career Opportunities in the Biomedical Sciences** 1 Unit
Grading Basis: Pass/Fail
Description: The goal of this course is to expose biomedical trainees to a range of diverse career options so that they can make confident and informed decisions about the way that they will move their career. Students will have the opportunity to hear from and to interact with professionals that hold positions in non-academic biomedical or biomedically related career fields. Students will complete an Individual Development Plan and learn how to compose a curriculum vita and a resume.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHTX 634. Introduction to Medical Product Regulatory Affairs** 1 Unit
Term Typically Offered: Spring Only
Prerequisite(s): Permission of the course director.
Description: This is a graduate-level course that will familiarize students with basic concepts of regulatory compliance during drug, biologic, and medical device development. Basic concepts to be taught are: 1) Product development life-cycles, focusing on phases of development and stages for interactions with regulatory agencies; 2) Quality control and assurance in the laboratory, manufacturer, and clinic the basis of good practices; 3) Familiarization with FDA guidance documents, ICH guidelines, and the code of federal regulations. Upon completion of the course, students should have an understanding of the relationship between regulators, drug or device developers (bench scientists and clinicians), manufacturers, and patients.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHTX 641. PRINCIPLES PHARMACOLOGY** 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): First-year Pharmacology graduate student or permission of course director.
Description: This is a graduate level course that will provide a foundation of the general principles of pharmacology upon which the students can subsequently build their knowledge in pharmacology. Major topics that will be covered include pharmacodynamics, receptor types and drug-receptor interactions, pharmacokinetics, biotransformation, and pharmacogenomics. The course will progress through the relevant portions of Katzung's Basic & Clinical Pharmacology to introduce these fundamental areas.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHTX 642. Principles, Applications, and Research Methods in Pharmacology 3 Units**Term Typically Offered:** Spring Only**Prerequisite(s):** First-year Pharmacology graduate student or permission of course director.**Description:** This is a Graduate level course providing a foundation of the general principles, applications, and research methods of pharmacology. The course will progress through Basic & Clinical Pharmacology chapters to introduce the fundamental areas of applied Pharmacology. This will be supplemented by faculty lectures on current research methods in Pharmacology. In addition, student presentations and discussion of assigned research articles will be used to reinforce the fundamental pharmacological principles, applications and research methods. Importantly, research papers and "flipped lectures" presented by students will also give them opportunities to practice presentation skills in delivering formal Pharmacology lectures/research results.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**PHTX 643. Environmental Toxicology** 3 Units**Term Typically Offered:** Fall Only**Prerequisite(s):** First year Pharmacology/Toxicology graduate student or permission of the course director.**Description:** This is a graduate level course that will provide a foundation of the general principles of toxicology upon which the students can subsequently build their knowledge in toxicology. A major focus of this course is on basic principles, mechanisms and common methods underpinning the science of toxicology. The major emphasis is for students to develop an understanding of how chemicals cause their effect (i.e. mechanisms of toxicity) including molecular and cellular changes through the lens of environmental toxicology. Students will develop a fundamental understanding of how chemicals may exert toxic effects to cause DNA damage and disrupt DNA repair resulting in various diseases highlighting cancer.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**PHTX 644. Organ Toxicology** 3 Units**Term Typically Offered:** Spring Only**Prerequisite(s):** First year Pharmacology graduate student or permission of the course director.**Description:** This is a graduate level course that will provide a foundation of the main concepts in organ toxicology and the methods used to study organ toxicology. Major topics that will be covered include common toxicities observed in the main body organs and standard as well as novel techniques for studying them. The course is based on Casarett and Doull's "Toxicology - the basic science of poisons" but may also include several specialist modules outside of the textbook.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**PHTX 652. Geriatric Pharmacology** 1 Unit**Prerequisite(s):** PHTX 395 or equivalent.**Description:** This course will be offered to senior graduate students and nursing students wishing to expand their knowledge on the pharmacokinetics, drug metabolism, toxicities, distribution and drug dosages and interaction in the elderly.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**PHTX 661. Molecular Mechanisms of Toxicology** 3 Units**Term Typically Offered:** Spring Only**Description:** Molecular interactions of drugs and toxicants on cellular processes; including foreign compound metabolism, signal transduction, cell cycle, DNA repair/DNA replication are covered and put in context topics in molecular epidemiology.**Note:** Crosslisted with BIOC 661.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**PHTX 667. Advanced Cell Biology** 3 Units**Term Typically Offered:** Spring Only**Prerequisite(s):** One quarter of graduate-level Biochemistry or consent of instructor.**Description:** Advanced treatment of contemporary cell biology including membrane structure and function, cytoskeleton, signal transduction, regulation of cell cycle, apoptosis, and molecular mechanisms of cellular differentiation. Spring semester.**Note:** Cross-listed with BIOC 667, ASNB 667, BIOL 667 and MBIO 667.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**PHTX 816. Special Project-Pharmacology** 1-16 Units**Description:** This course is to be arranged to fit individual needs to cover topics of current interest, to participate in research project or to receive some advance training.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Philosophy (PHIL)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

PHIL 501. Independent Study 1-3 Units**Description:** Opportunity for the student, under the supervision of a sponsoring faculty member, to pursue individualized study related to research or practice that is not included in regular courses in the curriculum.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- PHIL 502. Philosophy Capstone Seminar - CUE** **3 Units**
Term Typically Offered: Occasionally Offered
Prerequisite(s): 24 hours of PHIL courses; major in Philosophy.
Description: Seminar with variable content consisting in sustained and rigorous primary philosophical study and reflection; required of all philosophy majors as close to graduation as feasible.
Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHIL 505. Selected Topics** **1-3 Units**
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): To be determined by instructor, in the light of the topic chosen for that semester.
Description: Intensive investigation of one or more topics in Philosophy. May be repeated for credit when topic changes.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHIL 516. African-American Philosophy** **3 Units**
Term Typically Offered: Occasionally Offered
Prerequisite(s): PHIL 205 or PHIL 303 or PHIL 304.
Description: Analysis of works and theories of major recent and contemporary African-American philosophers within the themes of Pan-African debates.
Note: Cross-listed with PAS 516.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHIL 518. Feminist Philosophical Literature** **3 Units**
Prerequisite(s): Junior standing.
Description: Examination of central works by feminist philosophers in such subdisciplines as ethics, political philosophy, and epistemology.
Note: Cross-listed with WGST 560.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHIL 519. Topics in Philosophy of Race and Racism** **3 Units**
Description: Focused examination of philosophical issues involved in interdisciplinary inquires into the nature and functioning of race and racism.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHIL 521. Ethical Theory - WR** **3 Units**
Term Typically Offered: Fall Even Years
Prerequisite(s): One course in ethics or consent of instructor.
Description: Leading moral theories and contemporary debates in philosophical ethics.
Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHIL 528. Philosophy of Mind** **3 Units**
Term Typically Offered: Occasionally Offered
Prerequisite(s): Junior standing or consent of instructor.
Description: Focuses on philosophical questions concerning the nature of mind. Central topics include the relation between mind and matter, and the nature of consciousness.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHIL 529. Philosophy of Emotions** **3 Units**
Term Typically Offered: Occasionally Offered
Prerequisite(s): One course in philosophy or consent of instructor.
Description: A philosophical study of the nature of emotions. The course often also includes an examination of emotions' relationship to cognition and behavior, and of their moral, political, and aesthetic values.
Note: Cross-listed with PHIL 629.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHIL 531. Aesthetics** **3 Units**
Description: An examination of philosophical theories of art, works of art, creative activity, and aesthetic experience, from Plato to the present.
Note: Credit may not be earned for both PHIL 531 and PHIL 631.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHIL 535. Political Philosophy** **3 Units**
Term Typically Offered: Occasionally Offered
Prerequisite(s): Two courses in philosophy and/or political science.
Description: Theories of political forms and ideals, and core concepts in political life, such as justice, freedom, and equality. Attention to how ideals may be realized or frustrated.
Note: Credit may not be earned for both PHIL 535 and PHIL 635.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHIL 536. Philosophy of Science** **3 Units**
Term Typically Offered: Occasionally Offered
Prerequisite(s): Junior standing or consent of instructor.
Description: This course provides an introduction to the main philosophical questions concerning scientific knowledge and methodology.
Note: Cross-listed with BETH 636.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- PHIL 538. Critical Social Theory** 3 Units
Term Typically Offered: Occasionally Offered
Description: Critical Theory examines the relation between conceptual thinking and concrete social reality. It focuses on concepts such as social justice, freedom, progress, identity, and culture by studying their real-life meanings and implications. This course focuses on the school of thought known as the "Frankfurt School" as well as on its legacy and significance for feminism, gender and queer theory, and critical philosophy of race.
Note: Cross-listed with SCHG 538.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHIL 540. Epistemology - WR** 3 Units
Term Typically Offered: Occasionally Offered
Prerequisite(s): Junior standing or consent of instructor.
Description: This course focuses on philosophical questions concerning knowledge and belief. It will examine such issues as how beliefs are acquired and justified, the possible limits to knowledge, and issues of epistemic justice.
Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).
Note: Credit may not be earned for both PHIL 540 and PHIL 640.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHIL 541. Recent Topics in the Philosophy of Language** 3 Units
Term Typically Offered: Occasionally Offered
Prerequisite(s): Junior standing or consent of instructor Current theory and research in the philosophy of language.
Description: Note: cross-lists with PHIL 641 and LING 641
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHIL 557. African Philosophy** 3 Units
Term Typically Offered: Occasionally Offered
Prerequisite(s): PHIL 301, or PHIL 302, or PHIL 303, or PHIL 304.
Description: Descriptive and analytical introduction to the ideas and themes in African philosophy through careful readings of texts which address a cluster of topics.
Note: Cross-listed with PAS 557.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHIL 572. Phenomenology** 3 Units
Prerequisite(s): PHIL 303 or consent of instructor.
Description: The development of the phenomenological method and its use from Husserl to the present.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHIL 580. Foundations of Bioethics** 3 Units
Prerequisite(s): One Philosophy course at 300-level or above, or consent of instructor.
Description: Grounding in the major theories and methods of bioethical decision-making, including contemporary controversies about the role of theory, principles, cases, narrative, and virtues.
Note: Cross-listed with BETH 680.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHIL 581. Current Controversies in Health Care Ethics** 3 Units
Prerequisite(s): One Philosophy course at 300-level or above, or consent of instructor.
Description: Topics in health care ethics currently attracting the most attention in both professional and public discussions. A variety of viewpoints on these topics will be considered.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHIL 582. Health and Social Justice** 3 Units
Term Typically Offered: Occasionally Offered
Prerequisite(s): Admission into Bioethics MA program, or consent of instructor.
Description: An interdisciplinary approach to a wide array of issues pertaining to health and health care that arise at the intersection of gender, race, sex, disability, class, and culture.
Note: Cross-listed with PHIL 682, WGST 682, BETH 682, WGST 582.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHIL 583. Health Care, Justice & Community** 3 Units
Prerequisite(s): One Philosophy course at 300-level or above, or consent of instructor.
Description: Examines theories of justice and equality as they apply to issues in health care delivery, considers explanations for why disparities exist, and the practical ways that communities have addressed inequalities.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHIL 584. Clinical Ethics** 3 Units
Term Typically Offered: Spring Odd Years
Prerequisite(s): Junior standing or consent of instructor Application of ethical principles, virtues, and cases in the context of clinical care, with a practical approach toward ethics consultation and conflict resolution.
Description: Common kinds of clinical ethics challenges along with the case-based and legal history of decisions in such cases. Experience of clinical care and clinical ethics.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHIL 590. Philosophical Foundations of Diversity, Equity, and Inclusion**3 Units****Term Typically Offered:** Fall Only

Description: This course will provide an overview of the theory and practice of diversity. Diversity is understood as the many sociocultural differences between individuals and the differences that those differences make for those individuals. In this course, we will explore the historical context of oppression, the oppression framework for understanding diversity, privilege, social identity, the role of the body in diversity, stereotypes, and the personal experiences of both those who are oppressed and those who are privileged. Students will also have a substantial opportunity to examine how these general themes impact their particular area of study, work, or interest. Students pursuing that certificate should enroll in PHIL 690.

Note: This is the core course for the Diversity Literacy Certificate.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHIL 601. Independent Study**1-3 Units**

Description: Directed study and research.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHIL 602. Independent Study**1-3 Units**

Description: Directed study and research.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHIL 605. Special Topics**1-3 Units**

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): To be determined by instructor, in the light of the topic chosen for that semester.

Description: Intensive investigation of one or more topics in Philosophy. May be repeated for credit when topic changes.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHIL 616. African-American Philosophy**3 Units**

Description: Analysis of works and theories of major recent and contemporary African-American philosophers within the themes of Pan-African debates.

Note: Cross-listed with PAS 616.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHIL 619. Topics in Philosophy of Race and Racism**3 Units**

Description: Focused examination of philosophical issues involved in interdisciplinary inquiries into the nature and functioning of race and racism.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHIL 621. Ethical Theory**3 Units**

Prerequisite(s): One course in ethics, or consent of instructor.

Description: Recent developments in ethical theory, such as examination of the status of moral facts; moral realism; impartiality and personal attachments; or moral agency.

Note: Cross-listed with BETH 621.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHIL 629. Philosophy of Emotions**3 Units**

Term Typically Offered: Occasionally Offered

Prerequisite(s): One course in philosophy or consent of instructor.

Description: A philosophical study of the nature of emotions. The course often also includes an examination of emotions' relationship to cognition and behavior, and of their moral, political, and aesthetic values.

Note: Cross-listed with PHIL 529.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHIL 631. Aesthetics**3 Units**

Description: An examination of philosophical theories of art, works of art, creative activity, and aesthetic experience, from Plato to the present.

Note: Credit may not be earned for both PHIL 531 and PHIL 631.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHIL 635. Political Philosophy**3 Units**

Prerequisite(s): Two courses in philosophy and political science.

Description: The main concepts of contemporary political thought: rights, law, power, ideology, legitimacy, democracy, tyranny, the state, and justice, with the focus on the topic of political action in both its individual and collective forms.

Note: Credit cannot be earned for both PHIL 535 and PHIL 635.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHIL 638. Critical Social Theory**3 Units**

Description: A critical examination of interdisciplinary theories that seek to understand and explain social formations while at the same time uncovering ways that such formations can be unjust and irrational.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHIL 640. Epistemology**3 Units**

Description: Conceptual and historical background to analysis of knowledge claims; intensive study of theoretical approaches to knowledge, such as naturalized epistemology, socialized epistemology, feminist epistemology, postmodern critiques of normative conceptions of knowledge.

Note: Credit may not be earned for both PHIL 540 and PHIL 640.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHIL 641. Recent Philosophy of Language 3 Units

Description: Intensive study of current theory and research in the philosophy of language.

Note: Cross-listed with LING 641.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHIL 657. African Philosophy 3 Units

Prerequisite(s): Graduate standing.

Description: Descriptive and analytical introduction to the ideas and themes in African philosophy through careful readings of texts which address a cluster of topics.

Note: Cross-listed with PAS 657.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHIL 680. Foundations of Bioethics 3 Units

Prerequisite(s): Restricted to graduate students.

Description: Grounding in the major theories and methods of bioethical decision-making, including contemporary controversies about the role of theory, principles, cases, narrative, and virtues.

Note: Cross-listed with BETH 680 and PHIL 580.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHIL 681. Current Controversies in Health Care Ethics 3 Units

Prerequisite(s): Restricted to graduate students.

Description: Topics in health care ethics currently attracting the most attention in both professional and public discussions. A variety of viewpoints on these topics will be considered.

Note: Cross-listed with BETH 681, PHIL 581.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHIL 682. Health and Social Justice 3 Units

Term Typically Offered: Occasionally Offered

Prerequisite(s): Admission into Bioethics MA program, or consent of instructor.

Description: An interdisciplinary approach to a wide array of issues pertaining to health and health care that arise at the intersection of gender, race, sex, disability, class, and culture.

Note: Cross-listed with BETH 682, WGST 682, PHIL 582, WGST 582.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHIL 683. Race, Medicine, and Health 3 Units

Term Typically Offered: Spring Even Years

Prerequisite(s): Only for BETH 683: Admission to a Philosophy Department graduate program (MA or certificate), or consent of instructor.

Description: An in-depth study of racial disparities in health outcomes and in interactions with the health care system, and an examination of initiatives within the system to advance racial equity

Note: Cross-listed with BETH 683.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHIL 684. Clinical Ethics 3 Units

Prerequisite(s): Admission into the Bioethics MA program or consent of instructor.

Description: Application of ethical principles, virtues, and cases in the context of clinical care, with a practical approach toward ethics consultation and conflict resolution.

Note: Cross-listed with BETH 684.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHIL 685. Health Care Ethics Internship 3 Units

Grading Basis: Pass/Fail

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): Admission to Bioethics MA program or consent of instructor.

Description: Capstone for Bioethics MA program. Students will complete a community internship and present their results to their peers and program faculty.

Note: Cross-listed with BETH 685.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHIL 690. Philosophical Foundations of Diversity, Equity, and Inclusion 3 Units

Description: This course will provide an overview of the theory and practice of diversity. Diversity is understood as the many sociocultural differences between individuals and the differences that those differences make for those individuals. In this course, we will explore the historical context of oppression, the oppression framework for understanding diversity, privilege, social identity, the role of the body in diversity, stereotypes, and the personal experiences of both those who are oppressed and those who are privileged. Students will also have a substantial opportunity to examine how those general themes impact their particular area of study, work, or interest.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHIL 691. Capstone in Diversity Literacy **3 Units**

Term Typically Offered: Spring Only

Prerequisite(s): Admission to the Diversity Literacy program or consent of instructor; PHIL 690.

Description: Students will build upon their prior coursework to conceive and develop a culminating project that advances diversity in each student's chosen field.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHIL 695. Thesis Guidance **3 Units**

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHIL 696. Thesis Guidance **3 Units**

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Physics and Astronomy (PHYS)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

PHYS 501. Independent Study **1-3 Units**

Description: Independent research conducted with the approval and supervision of a faculty member.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHYS 502. Independent Study **1-3 Units**

Description: Independent research conducted with the approval and supervision of a faculty member.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHYS 507. Solar System Astronomy **3 Units**

Prerequisite(s): PHYS 300; MATH 206 or ENGR 102.

Description: This is an advanced course in solar system astrophysics, and will cover orbital mechanics, the nature of light, astronomical instrumentation, solar physics, planetary atmospheres/geophysics, comets/asteroids, interplanetary dust and exo-planets.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHYS 517. Physics of Climate **3 Units**

Term Typically Offered: Spring Odd Years

Prerequisite(s): MATH 206 or ENGR 102 (or equivalent) or permission of instructor.

Description: Introduction to the physics of Earth's climate system, including the energy budget of the atmosphere, oceans, and cryosphere, shortwave and longwave radiation, the effects of clouds and aerosols, and models of the greenhouse effect, climate sensitivity, atmosphere-ocean feedbacks, and climate change.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHYS 518. Space Weather **3 Units**

Term Typically Offered: Spring Even Years

Prerequisite(s): MATH 206 or ENGR 102 (or equivalent), or permission of instructor.

Description: This course provides a comprehensive overview of the physics and effects of space weather. Space weather refers to conditions on the Sun and in the solar wind, magnetosphere, ionosphere, and thermosphere that can influence the performance and reliability of space-borne and ground-based technological systems, and affect human life or health.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHYS 520. Vibrations and Sound **3 Units**

Term Typically Offered: Occasionally Offered

Prerequisite(s): PHYS 298, PHYS 299 and MATH 206.

Description: Vibrating bodies, propagation of sound waves, physical acoustics, and ultrasonics.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHYS 530. Thermal Physics **3 Units**

Prerequisite(s): PHYS 299; MATH 301 or ENGR 201.

Description: The laws of thermodynamics, thermodynamic reasoning, and elements of statistical mechanics.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHYS 531. Introductory Statistical Physics **3 Units**

Prerequisite(s): PHYS 530.

Description: Elementary probability theory applied to the understanding of properties of macroscopic matter in terms of their microscopic constituents. Kinetic theory of gases, transport phenomena. Equations of state derived from ensemble theory.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- PHYS 541. Electromagnetic Fields** 3 Units
Term Typically Offered: Occasionally Offered
Prerequisite(s): PHYS 300; PHYS 350 or MATH 405 or ENGR 205; MATH 301 or ENGR 201.
Description: Electrostatic and magnetostatic fields in free space and in material media, solutions of Poisson's equation, time dependent fields, Maxwell's equations.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHYS 542. Electromagnetic Radiation** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): PHYS 541.
Description: Poisson's equation and LaPlace's Equation, propagation of electromagnetic fields with applications to optics and microwave physics.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHYS 545. Advanced Optics** 3 Units
Prerequisite(s): PHYS 355 and PHYS 542; or consent of instructor.
Description: Topics in optical physics including optical system design, lasers, and quantum optics.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHYS 546. Advanced Optics Lab** 1 Unit
Prerequisite(s): PHYS 355 or equivalent.
Fee: An additional \$25.00 is charged for this course.
Description: Laboratory experiments illustrating fundamental optical phenomena, the interaction of light and matter, lasers, and quantum optics.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHYS 547. Fundamentals of Lasers** 3 Units
Term Typically Offered: Occasionally Offered
Prerequisite(s): PHYS 355; and PHYS 542 or ECE 473; or consent of instructor.
Description: Topics to be discussed include interaction of light with matter, optical amplifiers, laser resonators, Gaussian and higher order optical beams, non-linear optics, and ultra-fast laser pulses.
Note: Cross-listed with ECE 540.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHYS 555. Elementary Quantum Mechanics** 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): PHYS 300; PHYS 350 or MATH 405 or ENGR 205; PHYS 460.
Description: General concepts of quantum mechanics. Schrodinger equation and solutions in one, two and three-dimensions, hydrogen atom, and orbital angular momentum.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHYS 556. Quantum Theory of Matter** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): PHYS 555.
Description: Spin and general angular momentum, perturbation theory, variational principle, applications, identical particles, and scattering.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHYS 561. Mathematical Physics I** 3 Units
Prerequisite(s): PHYS 350 or MATH 405 or ENGR 205.
Description: Selected mathematical techniques and their applications to various fields of physics.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHYS 562. Mathematical Physics II** 3 Units
Prerequisite(s): PHYS 350 or MATH 405 or ENGR 205.
Description: Selected mathematical techniques and their applications to various fields of physics.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHYS 563. Fluid Dynamics** 3 Units
Term Typically Offered: Spring Odd Years
Prerequisite(s): MATH 301 or ENGR 201 (or equivalent), or permission of instructor.
Description: An introduction to nonlinear fluid dynamics, covering kinematics (strain, rotation, transport), nonlinear conservation laws (mass, momentum, energy; dimensions forms), vorticity dynamics, viscous flows, boundary layers, shear instability, and turbulence. Concepts are illustrated with applications drawn from aerodynamics (lift and drag on airfoils, propulsion of fish and birds), biofluids (flow in blood vessels), compressible flow (shock waves), geophysical fluid dynamics (waves, shear instability), and turbulence (energy cascades, modeling strategies).
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHYS 565. Advanced Computational and Numerical Methods in Physics** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): PHYS 350 or PHYS 561.
Fee: An additional \$25.00 is charged for this course.
Description: Modern computational and numerical methods in physics with application to problems in different branches of physics.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHYS 570. Atomic and Molecular Physics** 3 Units
Term Typically Offered: Occasionally Offered
Prerequisite(s): PHYS 541 and PHYS 555; or consent of instructor.
Description: The structure of atoms and diatomic molecules, the production of coherent radiation and its interaction with matter.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- PHYS 575. Solid State Physics** 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): PHYS 541 and PHYS 555, or consent of instructor.
Description: Crystal structure, elastic waves, lattice dynamics, phonons, band theory of solids and conductivity phenomena.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHYS 580. Nuclear Physics** 3 Units
Term Typically Offered: Occasionally Offered
Prerequisite(s): PHYS 541 and PHYS 555; or consent of instructor.
Description: Phenomenological study of nuclear properties. Nuclear structure and reactions, radioactive decay, interaction of charged particles with matter.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHYS 585. Elementary Particle Physics** 3 Units
Term Typically Offered: Spring Even Years
Prerequisite(s): PHYS 541 and PHYS 555, or consent of instructor.
Description: Properties of elementary particles. Detectors and accelerators. Weak and electromagnetic interactions. Quark model of hadrons, strong interactions.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHYS 589. General Relativity** 3 Units
Term Typically Offered: Spring Even Years
Prerequisite(s): PHYS 460; MATH 301 or ENGR 201.
Description: Review of classical gravitation and special relativity, Riemannian geometry, Einstein field equations, exact solutions, tests of the theory, gravitational collapse and black holes, gravitational waves, cosmology.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHYS 590. Astrophysics** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): PHYS 307; PHYS 350 or MATH 405 or ENGR 205 (or equivalent).
Description: Physics applied to the interstellar medium; the atmospheres, structure, and evolution of stars; galaxies.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHYS 595. Special Topics** 1-3 Units
Description: Introduction to an advanced topic or elaboration of an intermediate topic not treated comprehensively in a regular course.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHYS 601. Quantum Mechanics Laboratory** 3 Units
Prerequisite(s): PHYS 621 or PHYS 555 (may be taken concurrently).
Fee: An additional \$25.00 is charged for this course.
Description: Laboratory exercises demonstrating the principles of Quantum Mechanics.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHYS 605. Theoretical Mechanics** 3 Units
Prerequisite(s): PHYS 460 and PHYS 561, or consent of instructor.
Description: Analytical dynamics of systems of particles and rigid bodies. Hamiltonian and Lagrangian formulations, special relativity, canonical transformations, Hamilton-Jacobi theory and action-angle variables.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHYS 611. Electromagnetic Theory I** 3 Units
Prerequisite(s): PHYS 542 and PHYS 561, and consent of instructor.
Description: Microscopic and macroscopic Maxwell's equations; the energy-momentum tensor; multipole radiation; radiation from accelerated charges; scattering and dispersion; and covariant formulation.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHYS 612. Electromagnetic Theory II** 3 Units
Prerequisite(s): PHYS 542 and PHYS 561, and consent of instructor.
Description: Microscopic and macroscopic Maxwell's equations; the energy-momentum tensor; multipole radiation; radiation from accelerated charges; scattering and dispersion; and covariant formulation.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHYS 621. Quantum Mechanics I** 3 Units
Prerequisite(s): PHYS 556 and PHYS 605, and consent of instructor.
Description: Nonrelativistic quantum mechanics. Hilbert space formalism, Schrodinger and Heisenberg representations, angular momentum theory, perturbation theory, scattering theory. Systems of identical particles and symmetries. Applications.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHYS 622. Quantum Mechanics II** 3 Units
Prerequisite(s): PHYS 556 and PHYS 605, and consent of instructor.
Description: Nonrelativistic quantum mechanics. Hilbert space formalism, Schrodinger and Heisenberg representations, angular momentum theory, perturbation theory, scattering theory. Systems of identical particles and symmetries. Applications.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHYS 625. Statistical Mechanics** 3 Units
Prerequisite(s): PHYS 530 and PHYS 555, and consent of instructor.
Description: Application of ensemble or information theory to derivation of the laws of thermodynamics for classical or quantum systems. Properties of perfect and imperfect gases, magnetic phenomena, fluctuation phenomena, and the Onsager equations.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHYS 640. Solid State Physics I 3 Units

Prerequisite(s): PHYS 575, and concurrent registration in Quantum Mechanics, and consent of instructor.

Description: Quantum mechanical foundation of the theory of solids, the many-body problem, the band approximation, and other approximate methods. Electron-photon interaction, theory of superconductivity, electronic transport processes.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHYS 641. Solid State Physics II 3 Units

Prerequisite(s): PHYS 575, and concurrent registration in Quantum Mechanics, and consent of instructor.

Description: Quantum mechanical foundation of the theory of solids, the many-body problem, the band approximation, and other approximate methods. Electron-photon interaction, theory of superconductivity, electronic transport processes.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHYS 650. Research Methods in Physics & Astronomy 3 Units

Grading Basis: Pass/Fail

Fee: An additional \$25.00 is charged for this course.

Description: A survey of research methodologies. Topics may include modeling and simulation, experimental, theoretical, and computational techniques used in any branch of Physics and Astronomy, particle detector technologies, advanced handling of data statistics, data mining, laboratory safety, and research ethics.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHYS 670. Special Topics 1-12 Units

Prerequisite(s): Concurrent or previous registration in PHYS 605, PHYS 611, or PHYS 621; and consent of instructor.

Description: One or more advanced topics not treated comprehensively in the regular courses.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHYS 690. Independent Study 1-12 Units

Prerequisite(s): Consent of instructor.

Description: Advanced study conducted under the direction of a faculty member.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHYS 695. Research Seminar 1-12 Units

Prerequisite(s): Consent of instructor.

Description: Regular but informal meetings of faculty members and graduate students active in an area of research to discuss problems of mutual interest, and to review the current literature.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHYS 699. Research 1-12 Units

Prerequisite(s): Consent of instructor.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Physiology (PHZB)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

PHZB 602. Physiological Concepts for General Life Sciences 2 Units

Description: This course covers the fundamental function of membranes; autonomic (ANS), hypothalamic, and central (CNS) neural control; and for integrated function of muscle, heart, circulatory, renal, endocrine, reproduction, and gastrointestinal organ systems. Emphasis is placed on physiological mechanisms for integrated feedback control of organ and tissue function in humans. Overall, this course offers a solid basis in physiological concepts for post-baccalaureate life-science graduate students to enhance their advanced studies of life sciences. This course teaches by combined didactic lecture and student problem-solving class sessions, and by concept-problem reviews. This course is offered only on a letter-grade basis. The Course Faculty reserves the right to make changes in this syllabus when necessary to meet learning objectives and course management.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHZB 604. Stem Cell Biology and Regenerative Medicine 3 Units

Term Typically Offered: Fall Only

Prerequisite(s): Permission from course director.

Description: This course will provide a comprehensive overview on this intriguing and highly debated topic. The course will focus on the biology of stem cells and their role in health and disease with emphasis on development, carcinogenesis and tissue engineering. Lectures on various aspects of stem cells from renowned experts will cover both embryonic, induced pluripotent and adult stem cells. Specific lectures will include stem cell types present in the blood, liver, brain, muscle, kidney, pancreas, prostate, lung, gut, skin, and eye. Fellows/graduate students will also be educated on therapeutic cloning as well as bio-ethical issues and existing laws governing stem cell research.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- PHZB 605. Systemic Physiology I** 5 Units
Prerequisite(s): Admitted into SIGS.
Description: The first of two human physiology courses that are offered the first year of the graduate programs in the Department of Physiology and Biophysics and other basic science departments at the SOM. This course contains four lectures and one hour of recitation/application of the preceding four lectures per week. Mandatory attendance is required for all class sessions.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHZB 606. Systemic Physiology II** 5 Units
Prerequisite(s): Admitted into SIGS.
Description: The second of two human physiology courses that are offered the first year of the graduate programs in the Department of Physiology and Biophysics. This course contains four lectures and one hour of recitation/application of the preceding four lectures per week. Mandatory attendance is required for all class sessions.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHZB 607. Principles of Presentations: Self, Science, Interviews** 3 Units
Description: This course will provide instruction in best practices for oral-based presentations. There will be multiple oral presentation topics covered, including: Basic Presentations; Using Visual Aids, Charts and Figures; Distilling and Presenting a Clear and Understandable Hypothesis and Specific Aims; Interviews; and Scientific Poster Presentations. Students will attend lectures, participate in small group discussions and present five different types of oral-based presentations. A mid-term and final exam (each 50% of overall grade) will be used to assess student understanding of the knowledge centered on making clear, concise and purposeful oral presentations.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHZB 608. Physiological Concepts Related to the Metabolic Syndrome** 3 Units
Prerequisite(s): BIOL 240 and BIOL 242, or equivalents; CHEM 341 and CHEM 342, or equivalents.
Description: This course will provide students with the basic physiological and biochemical concepts necessary to understand the factors involved in the development of the Metabolic Syndrome. Students will 1) learn the risk factors for metabolic syndrome; 2) learn the diseases and medical complications associated with metabolic syndrome; 3) understand the role of insulin resistance, obesity, hypertension and atherosclerosis in the onset of metabolic syndrome; and 4) survey the current and future approaches to diagnosis and treatment of the metabolic syndrome.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHZB 609. Integrated Systemic Physiology** 3 Units
Prerequisite(s): PHY 601 or PHZB 601 and consent of instructor.
Description: Designed to provide reinforcement, expansion and integration of basic physiologic concepts of human organ systems.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHZB 611. Advanced Human Cardiovascular Physiology** 3 Units
Prerequisite(s): PHZB 605 or consent of instructor.
Description: Utilizes lectures on the physiological and biochemical processes in the heart, blood vessels and blood elements to provide more detailed mechanisms from molecular to systematic levels and normal to pathological states.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHZB 615. Clinical Physiology** 6 Units
Prerequisite(s): PHZB 605 & PHZB 606.
Description: This is a 6-credit hour course that uses clinical situations to examine and reinforce mechanisms important to understanding systemic physiology. There are six areas covered: 1) electrical functioning of the heart, 2) blood pressure and circulatory control mechanisms, 3) ventilation and perfusion of the lungs, 4) gastrointestinal blood flow and acid production, 5) blood flow and oxygen utilization by the heart, and 6) control of the many endocrine functions. This course utilizes a combination of faculty-lead teaching techniques that include: team based learning (TBL), problem based learning (PBL), and in-class exercises. All course materials have been prepared by the supervising faculty and will be available to students online as needed.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHZB 616. Selected Topics in Physiology and Biophysics** 1-12 Units
Description: Detailed discussion of physiological and biophysical problems of particular interest to students and staff. Topics will be announced in the schedule.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHZB 617. Seminar in Physiology and Biophysics** 1 Unit
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHZB 619. Research** 1-20 Units
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHZB 620. Thesis** 1-6 Units
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHZB 621. Physiological Adaptions to Exercise, Immobility and Physical Inactivity** 3 Units
Term Typically Offered: Spring Only
Description: This course is an in-depth study of the physiological adaptations that occur due to exercise, immobilization, and physical inactivity. The course expands the knowledge on how the body responds, adjusts, and adapts to stress. Health aspects of exercise will be emphasized.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHZB 625. Experimental Physiology Methods 1 Unit

Prerequisite(s): Admitted into SIGS.

Description: Experimental Physiology Methods is a first course available to matriculating students in the initial year of graduate physiology programs. This course is designed to broadly introduce the use of the scientific methods on studying hypothesis-related research in physiology. This course is now designed to be taken by all matriculating graduate students, but only 1 credit hour (instead of the previous listing for 3). Beginning doctoral students will take this course in concurrence with the general "methods course" by the Interdepartmental Programs in Basic Science each fall semester.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHZB 630. Biomedical Applications of Physiology in the Eye 3 Units

Description: This course gives the basic physics and advanced physiologic principles that relate to function of the eye as an organ system, uncovers the physics behind basic instruments used for diagnostics of eye health, introduces the student to various professions that are involved in eye health, and discusses the biomedical aspects of several problems that are frequently encountered in medical eye health. Overall, this course offers a solid background in physiology, pathophysiology, measurements methods, and biomedical aspects of the eye to well-prepare a student for pursuit of a career in professions related to eye health.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHZB 799. Dissertation 1-12 Units

Prerequisite(s): Permission of departmental chair.

Description: The terminal research course for the PhD degree to finalize data analyses and manuscript preparation for the doctoral dissertation.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHZB 816. Special Project-Physiology 1-16 Units

Prerequisite(s): Consent of Department Chair.

Description: A special course arrangement to provide an in-depth exposure to a specific area of physiology (such as circulatory mechanisms in shock) that involves the interaction of basic science research and clinically relevant problems.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Planning (PLAN)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

PLAN 501. Urban Environmental Quality 3 Units

Prerequisite(s): Consent of instructor.

Description: A study of environmental aspects of urban areas and analysis of inter- and intra-city variations in environmental quality.

Note: Cross-listed with GEOG 561.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PLAN 511. Planning Theory & History 3 Units

Term Typically Offered: Fall Only

Description: This course will introduce the historic foundation of modern urban planning, and investigate the central themes in planning theory, using both historical and contemporary contexts to assist in the understanding of its role in shaping planning thought and practice.

Note: Cross-listed with PLAN 601, PADM 507, PADM 607, UPA 684.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PLAN 600. Planning History and Issues 3 Units

Prerequisite(s): Consent of instructor.

Description: The history of planning and contemporary issues with a special emphasis on the role of planners, zoning and law.

Note: Cross-listed with GEOG 628.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PLAN 601. Planning Theory and History 3 Units

Term Typically Offered: Fall Only

Description: This course will introduce the historic foundation of modern urban planning, and will investigate the central themes in planning theory, using both historical and contemporary contexts to assist in the understanding of its role in shaping planning thought and practice.

Note: Cross-listed with PLAN 511, PADM 507, PADM 607, UPA 684.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PLAN 602. Research Methods for Public Affairs 3 Units

Description: Introduction to the scope and methods of applied research for the public and nonprofit sectors. Focuses on problem structuring through logical methods, exploring problems through observation and other methods of data collection, analyzing and summarizing findings using both qualitative and quantitative methods.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PLAN 603. Urban Economics **3 Units**

Prerequisite(s): PLAN 500 and ECON 500, or consent of instructor.
Description: Application of economic theory to urban policy issues including metropolitan development and job creation, poverty, crime, transportation, environment, spatial structure, and other issues.
Note: Cross-listed with ECON 605, UPA 603, and PADM 640.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PLAN 604. Applied Research Methods **3 Units**

Term Typically Offered: Fall, Spring
Description: This course is designed to provide students with the basic analytic tools that are commonly used by professional planners and policy analysis in their daily practice, with a special emphasis on techniques for population and economic analysis. The course will instruct students in foundational statistical methods and techniques, as well as additional analytical tools, including the assumptions underlying the tools and methods and strengths and weaknesses of the tools and methods.
Note: Cross-listed with PADM 601 and URBS 504.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PLAN 605. Land Use & Planning Law **3 Units**

Term Typically Offered: Spring Only
Description: Examination of legal issues related to planning and land use activities in the U.S. It explores the legal standards by which land use is regulated, planned. Students will study various legal and regulatory tools, including ordinances, state and federal legislation, and legal decisions. Considerable attention will be given to planning perspectives on legal problems, as well as legal perspectives on planning problems.
Note: Cross-listed with LAW 904 and UPA 678.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PLAN 606. Internship & Professional Practice **3 Units**

Term Typically Offered: Fall Only
Description: Application of internship experience to government organization; the role of planning in governmental decision-making; the planner's relations with citizens, politicians and administrators; strategies for dealing with conflict, pressure, and uncertainty; and ethics.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PLAN 607. Land Use Planning **3 Units**

Description: This course provides an understanding of the history and current characteristics of land use planning and policy. Topics include the comprehensive plan, regulatory controls such as zoning, fiscal mechanisms of control, land use and environmental disputes, regional planning, and growth management.
Note: Cross-listed with UPA 683.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PLAN 608. Geographic Information Systems **3 Units**

Prerequisite(s): Consent of instructor.
Description: Application of GIS to real world projects. An emphasis will be placed on the development of a digital spatial database.
Note: Cross-listed with GEOG 657 and UPA 629.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PLAN 609. Public Budgeting and Finance **3 Units**

Description: Examines public budgeting and finance from economic, political, and institutional perspectives. Topics include: budget process, approaches and techniques of budgeting, ethics, intergovernmental fiscal relations, revenue-raising, capital budgeting, debt administration and risk management.
Note: Cross-listed with UPA 647 and PADM 604.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PLAN 610. Public Management **3 Units**

Description: Administration of the organization from the point of view of top level management. Formulation and administration of policies and practices. Development of long-range strategic plans as well as the diagnosis, analysis, and evaluation of specific organizational problems.
Note: Cross-listed with UPA 672 and PADM 605.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PLAN 611. Human Resources Management **3 Units**

Description: Basic theories, public policies, laws, regulations, problems, and prospects of human resource development and management within the context of the public sector.
Note: Cross-listed with PADM 642 and UPA 667.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PLAN 612. Mediation and Dispute Resolution **3 Units**

Description: Designed principally for incipient practitioners of the mediation process. Class participation serving as a mediator in cases presented to the class, and a short paper depicting mediating in process are the course requirements.
Note: Cross-listed with PADM 648 and POLS 628.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PLAN 613. Foundations of Public Administration **3 Units**

Description: Using the classic writings in the field of public administration for the past 150 years, the course explores the theoretical foundations of public administration and applies the theories to current practice in public administration.
Note: Cross-listed with PADM 600, POLS 625, and UPA 661.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PLAN 614. Real Estate Market Analysis 3 Units

Prerequisite(s): GEOG 327 or Urban Economics or consent of the instructor.

Description: Covers concepts, methodologies and analytical tools used in urban real estate market analysis, with a particular emphasis on site selection using GIS applications.

Note: Cross-listed with GEOG 635.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PLAN 615. Spatial Statistics 3 Units

Prerequisite(s): PLAN 602 or consent of instructor.

Description: The analysis of spatial patterns and processes through the use of spatially-based statistics.

Note: Cross-listed with GEOG 656.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PLAN 616. Analytical Urban Geography 3 Units

Term Typically Offered: Occasionally Offered

Prerequisite(s): PLAN 618 or consent of instructor.

Description: Advanced analysis of urban spatial processes and patterns with an emphasis on qualitative models.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PLAN 617. Housing and Community Development 3 Units

Description: Examines issues in housing and community development.

Note: Cross-listed with UPA 648 and PADM 626.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PLAN 618. Urban Demography and GIS 3 Units

Term Typically Offered: Spring Only

Prerequisite(s): Graduate standing.

Description: This course will introduce students to geographic information systems (GIS) as an analytical tool with which to study urban demographic issues. The material will be geared towards students in the urban planning, public administration, and urban studies programs, with a focus on demographic data and issues frequently encountered by planners, policymakers, and policy analysts. Topics that will be covered include migration, housing and neighborhood development, segregation, and land use.

Note: Cross-listed with SUST 518, URBS 518, PADM 621.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PLAN 620. Environmental Policy 3 Units

Term Typically Offered: Fall Only

Description: Survey of environmental issues and policies designed to address those issues.

Note: Cross-listed with PADM 627, UPA 679, and POLS 627.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PLAN 622. Urban Design 3 Units

Description: Covers theories, principles, and processes of urban design, including applications to actual design problems.

Note: Cross-listed with UPA 682.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PLAN 624. Urban Transportation Planning 3 Units

Prerequisite(s): ECON 605, PADM 640, PLAN 603, or UPA 603.

Description: Analysis of characteristics and costs of existing and innovative urban transportation systems. Role of planning methods in estimating transportation usage and choosing optimal plans.

Note: Cross-listed with UPA 690.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PLAN 625. Historic Preservation and Sustainable Practice 3 Units

Term Typically Offered: Spring Only

Description: This course is a graduate level course on historic preservation, examining sustainable practices in Louisville and other regions. The course examines architecture and the built environment as it relates to historic preservation, urban revitalization, and the contributions of other disciplines such as urban planning, economics, and political science to the principles and practice of preservation.

Note: Cross-listed with PADM 651 and UPA 651.

Note: Course fee.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PLAN 626. Economic Development 3 Units

Description: The course provides an introduction to the many facets of economic development, including the context theory, process and practice of economic development planning and policy.

Note: Cross-listed with PADM 645, UPA 640, POLS 603.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PLAN 628. Economic Conditions and Forecasting 3 Units

Prerequisite(s): ECON 600 or ECON 605/UPA 603/PLAN 603/PADM 640.

Description: Develops quantitative tools for the analysis and forecasting of economic phenomena. Both structural & time models are presented. Basic Econometric methods are used to fit models and evaluate their forecasting properties.

Note: Cross-listed with ECON 620 and UPA 624.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PLAN 631. Real Estate Principles 3 Units

Description: The course provides decision makers with an understanding of real estate that will enable them to make informed business and development decisions relating to real estate development.

Note: Cross-listed with FIN 631.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- PLAN 632. Independent Study** 1-6 Units
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PLAN 633. Real Estate Development** 3 Units
Description: An introduction to real estate development as an entrepreneurial opportunity and to the study of the interrelationship dynamics of marketing, finance, property management, site acquisition and disposition.
Note: Cross-listed with FIN 633.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PLAN 634. Real Estate Finance and Investment** 3 Units
Description: Introduction to financial and investment analysis with applications to real estate.
Note: Cross-listed with FIN 634.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PLAN 635. Comparative Urban Development** 3 Units
Description: Examines urban development in a cross national perspective. Traces the formulation, strategy and implementation or management of urban development policy in a number of nations. While the emphasis is on North America and West Europe, the lessons have broader relevance for other parts of the world, and will be applied to developing areas.
Note: Cross-listed with UPA 623.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PLAN 636. Site Planning** 3 Units
Description: This course introduces art and aesthetics of site planning through lectures, readings, discussions, site visits, and a studio project.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PLAN 638. Urban Justice & Policy** 3 Units
Prerequisite(s): For Law School students: LAW 802, LAW 804, LAW 806, LAW 810, LAW 811, LAW 803, LAW 805, LAW 807, LAW 808, LAW 812, unless approved by Associate Dean of Academic Affairs.
Description: All other students: must be a graduate student in good standing unless waived by the professor teaching the course. For other students: graduate status or permission of instructor. An interdisciplinary study of various theories and concepts of justice in cities. Students will study selected urban policy problems through the perspectives of diverse theories and concepts of justice.
Note: Cross-listed with LAW 846, SUST 638, UPA 638.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PLAN 650. Capstone Studio** 6 Units
Term Typically Offered: Fall, Spring
Description: This course integrates the various elements of the planning program while providing the opportunity to work on real planning problems.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PLAN 652. Neighborhood Planning Studio** 3 Units
Description: The course introduces skills, practices, and values fundamental to successful neighborhood planning as well as explores the various planning approaches upon which the field is based.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PLAN 663. Social Equity and the Public Sector** 3 Units
Description: This course will provide a comprehensive review of social equity in American public administration. There is a course fee of \$12.50/credit hour.
Note: Cross-listed with PADM 663 and UPA 663.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PLAN 664. Cultural Competency and Action** 3 Units
Description: This course primarily focuses on the professional development of public administrators. It seeks to improve their knowledge about diverse issues of discrimination and prejudice in the public sector. It provides a framework for examining factors related to discrimination as well as racism, sexism, and heterosexism in terms of political history, power, stereotyped perceptions and practices across society, groups and among individuals. There is a course fee of \$12.50/credit hour.
Note: Cross-listed with PADM 664 and UPA 664.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PLAN 670. Sustainable Development and Planning** 3 Units
Term Typically Offered: Spring Only
Description: The course is designed to address the institutions and governance in sustainable development, and will take an interdisciplinary approach. The course will support the proposed interdisciplinary MA/MS in Sustainability degree, anticipated for a Fall 2015 start.
Note: The course will be open to graduate students in any program at UofL.
Note: Cross-listed with PADM 670, UPA 670.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PLAN 675. Introduction to Sustainability 3 Units

Prerequisite(s): Graduate standing.
Description: It is a graduate survey course of theory, issues and challenges in the area of sustainability. Open to any graduate student at UofL.
Note: Cross-listed with PADM 675, UPA 675.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PLAN 676. Sustainable Social-Ecological Systems 3 Units

Prerequisite(s): Graduate standing.
Description: The course is designed to address the social and ecological frameworks for understanding and applying sustainability concepts in both theory and practice. The course will be open to graduate students in any program at UofL.
Note: Cross-listed with PADM 676 and UPA 676.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PLAN 680. Special Topics in Urban Planning 1-6 Units

Description: An advanced study of a selected topic in urban planning.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Political Science (POLS)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

POLS 501. Topics in American Politics 3 Units

Term Typically Offered: Occasionally Offered
Description: An examination of one or more issues in the field of American politics.
Note: Topics to be varied from year to year.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

POLS 502. Topics in Comparative Politics 3 Units

Term Typically Offered: Occasionally Offered
Description: An examination of one or more issues in the field of comparative politics. May focus on a particular region or country. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

POLS 504. Topics in Political Theory - WR 3 Units

Prerequisite(s): Senior standing or faculty consent.
Description: An examination of one or more selected topics in the study of political philosophy. Individual research projects and reports are required.
Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

POLS 505. Topics in Urban and Public Policy 3 Units

Description: An interdisciplinary study of metropolitan problems, providing an opportunity to probe into basic long-range trends and human factors.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

POLS 506. Topics in International Relations 3 Units

Prerequisite(s): Consent of instructor.
Description: An advanced focus on one or more selected topics in world politics. Research projects, reports and simulations will likely be required. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

POLS 507. Topics in Digital Politics 3 Units

Description: Investigation of the role of information technology in politics and policy-making with a focus on real-world applications. Topics may include political campaigns, interest group advocacy, and e-government. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

POLS 510. Louisville Metro Council Internship 3 Units

Term Typically Offered: Fall Only
Prerequisite(s): Consent of instructor.
Description: Practical internship in government.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- POLS 511. Internship II** **3 Units**
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Consent of instructor.
Description: Practical internship in government, nonprofit, or private sector.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- POLS 512. Frankfort Legislative Internship** **3 Units**
Description: This course offers students the opportunity to experience working in the office of an elected member of Kentucky General Assembly. Interns work an average of 16 hours per week during the legislative session. Intern responsibilities may vary, depending on the intern's experience and interests as well as the needs of the office. The primary objectives of the intern program include: providing students the opportunity to gain first-hand experience working in government and politics, generating insight into the realities of the political process and how it relates to traditional theoretical perspectives of political science, and educating students about the possibilities of public service and politics as a career choice.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- POLS 520. Coping with Conflict** **3 Units**
Fee: An additional \$100.00 is charged for this course.
Description: This active-learning course involves students negotiating and then analyzing realistic hypothetical cases related to local, national, and international issues found within the North American countries.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- POLS 530. International Negotiation** **3 Units**
Fee: An additional \$115.00 is charged for this course.
Description: An examination of the politics of interstate bargaining. Various theoretical perspectives are examined as well as several real world examples. Students will participate in role-playing exercises.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- POLS 552. Politics through Film** **2-3 Units**
Description: An examination of authority patterns, political change, using cinematic portrayals as the primary literature base for investigation.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- POLS 563. Women in Developing Countries - WR** **3 Units**
Description: Follows the progress of the international women's movement by focusing on the emergence of women leaders and their work in developing countries since the First World Conference on Women, 1975 to the present.
Note: Cross-listed with WGST 558.
Note: Approved for the Arts and Sciences upper-level requirement in Written Communication (WR).
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- POLS 568. Feminist Theory - WR** **3 Units**
Description: Survey of the history and scope of the feminist tradition with emphasis upon liberal, radical, Marxist, socialist, psychoanalytic, and postmodern approaches to feminist theory.
Note: Cross-listed with WGST 556.
Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).
Note: Credit may not be earned for both WGST 556/POLS 568 and WGST 656/POLS 668.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- POLS 602. Urban Political Economy** **3 Units**
Description: Examines the role of public/private sectors in shaping policy in community and consequences for urban growth and quality of life.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- POLS 603. Economic Development** **3 Units**
Description: The use and application of static and dynamic models for urban community development. Includes economic base industry and firm location models, and community growth. Topics include transportation, energy, pollution, income distribution, and employment.
Note: Cross-listed with PADM 645, UPA 640 and PLAN 626.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- POLS 605. Management of Nonprofit Organizations** **3 Units**
Description: Management of nonprofit organizations is a graduate seminar in the Masters of Public Administration program. Its purpose is to apply management theories and concepts to nonprofit organizations. As such, the emphasis of this seminar will be relating how non-profits are managed in a time of scarce resources. Furthermore, students will understand challenges faced by managers as they seek to meet mission objectives, attract public and private support, work with and motivate volunteers, collaborate with other sectors, and meet the challenges of meeting performance objectives.
Note: Cross-listed with PADM 609.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- POLS 609. Seminar in Urban Problems** **3 Units**
Description: Exploration of field of urban politics/government with focus on urban institutions, governance and selected urban problems and policies.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- POLS 615. Administrative Law and Process** **3 Units**
Description: Study of processes of law-making and application by governmental executive departments. Encompasses substantive issues facing agencies in designing and implementing effective regulation and court efforts to interpret and control agencies' activities.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- POLS 619. Seminar in Public Policy** **3 Units**
Term Typically Offered: Fall, Spring
Description: Survey of major theories of the policy process and the methodology of policy analysis.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- POLS 620. Topics in Public Policy** **3 Units**
Description: An examination of one or more selected topics in the study of public policy.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- POLS 625. Foundations of Public Administration** **3 Units**
Description: Using the classic writings in the field of public administration for the past 150 years, the course explores the theoretical foundations of public administration and applies the theories to current practice in public administration.
Note: Cross-listed with UPA 661, PADM 600, & PLAN 613.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- POLS 627. Environmental Policy** **3 Units**
Description: Survey of environmental issues and policies designed to address these issues.
Note: Cross-listed with PADM 627, PLAN 620, UPA 679.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- POLS 628. Mediation and Dispute Resolution** **3 Units**
Description: Designed principally for incipient practitioners of the mediation process. Class participation, serving as a mediator in cases presented to the class, and a short paper depicting mediating in process are the course requirements.
Note: Cross-listed with PADM 648 and PLAN 612.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- POLS 629. Seminar in American Politics** **3 Units**
Term Typically Offered: Fall Odd Years
Description: Survey of major theories and research on American political institutions and political behavior.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- POLS 630. Topics in American Politics** **3 Units**
Description: An examination of the research in one or more selected topics in the field of American politics.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- POLS 638. Seminar in American Foreign Policy** **3 Units**
Description: Issues and perspectives in American foreign policy topics include theories of American foreign policy, historical epochs in the Cold War era, alternative strategies in nuclear deterrence, America's responses to the post-Cold War environment.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- POLS 639. Seminar in International Relations** **3 Units**
Description: Study of world politics, focusing on central theoretical perspectives and substantive issues affecting interstate conflict and cooperation.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- POLS 640. Topics in International Relations** **3 Units**
Description: Study of selected substantive or theoretical issues involving world politics.
Note: Topics will vary from semester to semester.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- POLS 641. Clash of Civilizations in the 21st Century** **3 Units**
Description: This course examines three major civilizations (Western, Islam, and Chinese) and their roles in international relations in the 21st century.
Note: Cross-listed with AST 641.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- POLS 644. Law, Diplomacy and Power: The Foreign Relations of the U.S.** **3 Units**
Term Typically Offered: Fall, Spring
Description: This course explores the evolution of U.S. foreign relations from the founding to the present-day, focusing on the interplay of legal, diplomatic, and power-driven motives and themes. It analyzes the records of prominent U.S. foreign policy makers, appraising their objectives and strategies, their errors and accomplishments, within changing international contexts.
Note: Cross-listed with POLS 444.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- POLS 647. Seminar in Latin America** 3 Units
Term Typically Offered: Occasionally Offered
Description: A survey of major theories and research on Latin American political institutions, political behavior, socioeconomic processes, and critical public policy issues across the region.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- POLS 649. Seminar in Comparative Politics** 3 Units
Description: Survey of major theories, concepts, approaches of comparative politics, development of the field and methodology of comparative political analysis.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- POLS 650. Topics in Comparative Politics** 3 Units
Description: Study of politics and government in selected countries/regions, or study of processes, institutions or policies from a cross-national perspective.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- POLS 668. Feminist Theory** 3 Units
Description: Survey of the history and scope of the feminist tradition with emphasis upon liberal, radical, Marxist, socialist, psychoanalytic, and postmodern approaches to feminist theory.
Note: Cross-listed with WGST 656.
Note: Credit may not be earned for both WGST 556/POLS 568 and WGST 656/POLS 668.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- POLS 670. Research Design** 3 Units
Description: This course addresses how the scientific method applies to studying social and political phenomena. It offers a survey of the various qualitative and quantitative data collection and analysis methods used in social and political research.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- POLS 671. Introduction to Data Analysis** 3 Units
Description: This course is an introduction to quantitative statistical methods.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- POLS 672. Qualitative Research** 3 Units
Term Typically Offered: Spring Even Years
Prerequisite(s): No Prerequisites or corequisites: No Corequisite: No This course introduces students to the principles and tools used to design and conduct qualitative research in political science.
Description: We will examine the nature of inference and explanation, research design, and conceptualization. Then, we will examine qualitative data generation techniques such as archival research and comparative historical analysis; process tracing; interviewing and focus groups; ethnographic and participant observation; and discourse and content analysis. Throughout the course we will examine scholarship from both the positivist and interpretivist approaches to qualitative research and devote time to examining research ethnics and researcher responsibilities. The course is designed to assist students to think about how to use qualitative research methods to answer their own questions about politics.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- POLS 691. Independent Study I** 1-12 Units
Description: Individualized study in a selected subject area with approval of and supervision by a faculty member. Credit according to achievement.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- POLS 692. Independent Study II** 1-12 Units
Description: Individualized study in a selected subject area with approval of and supervision by a faculty member. Credit according to achievement.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- POLS 695. Directed Research** 3 Units
Prerequisite(s): Student must be in last semester of his/her course work.
Description: An intensive independent research project directed by a department faculty member. Intended for students completing the non-thesis degree option.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- POLS 699. Thesis Guidance** 1-6 Units
Term Typically Offered: Fall, Spring, Summer
Description: This course provides an opportunity for students to conduct their thesis research under the supervision of a faculty advisor, complete the writing, and defend it before a faculty committee.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Psychology (PSYC)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that

they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

PSYC 516. Introductory Mathematical Psychology 3 Units

Prerequisite(s): PSYC 201.

Description: Survey of basic applications of probability and mathematics to models and theories in learning, perception, and social psychology. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PSYC 524. Psycholinguistics 3 Units

Term Typically Offered: Spring Only

Prerequisite(s): PSYC 307 or ENGL 325 or LING 325 or LING 518.

Description: Psychological aspects of language and their significance for analysis and understanding of cognitive and social processes.

Note: Cross-listed with LING 524.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PSYC 544. Animal Behavior and Behavioral Ecology 3 Units

Prerequisite(s): PSYC 201 or consent of instructor.

Description: Survey of sensory and behavioral characteristics of animal species, with stress upon ecological variables.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PSYC 566. Race and Gender in Psychological Research 3 Units

Description: Critical review of psychology with respect to issues of race and gender. Examines theory and research paradigms, modern, postmodern and Afrocentric methodologies.

Note: Cross-listed with PAS 566.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PSYC 571. Special Topics in Psychology 3-4 Units

Term Typically Offered: Occasionally Offered

Prerequisite(s): Consent of instructor.

Description: Survey and analysis of current theory, research and application in a specialized topic of current interest.

Note: Undergraduate, Psychology Honors, or graduate credit available with consent of instructor.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PSYC 581. Introduction to Health Psychology 3 Units

Prerequisite(s): PSYC 201 or consent of instructor.

Description: Survey of theory and research on psychological factors which contribute to health and well-being, and to the occurrence, severity, and remediation of illness and disease.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PSYC 582. Introduction to Clinical Psychology 3 Units

Prerequisite(s): Junior, Senior, or master's-level student with 9 or more credit hours in Psychology beyond PSYC 201.

Description: Examines the history, theoretical foundations, and methods of clinical psychology. Emphasis on areas of clinical practice, along with understanding how basic research methods are employed to explore clinical questions and support clinical practice.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PSYC 591. Graduate Psychology Research 1-6 Units

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): Admission to the Experimental Psychology Combined BS/MS program; permission of instructor.

Description: Designing of experiments, collection of data, and statistical analysis, under the supervision of a sponsoring faculty member.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PSYC 592. Graduate Psychology Research 3 Units

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): Admission to the Experimental Psychology Combined BS/MS program; permission of instructor.

Prerequisite(s): Admission to the Experimental Psychology Combined BS/MS program; permission of instructor.

Description: An independent study class involving research on a focused topic in Psychology. Students register for individual sections of PSYC 592 after contacting a faculty mentor and arriving at an agreed-upon course of work for the semester. Each psychology research experience is unique to the particular student and faculty research lab in which it occurs.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PSYC 595. Honors Psychology Research 3 Units

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): Admission to the Experimental Psychology Combined BS/MS program; permission of instructor; acceptance into Psychology Honors Program.

Prerequisite(s): Admission to the Experimental Psychology Combined BS/MS program; permission of instructor; acceptance into Psychology Honors Program.

Description: Designing of experiments, collection of data, statistical analysis, and report writing in support of the honors thesis.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

<p>PSYC 596. Honors Psychology Thesis - WR 3 Units Term Typically Offered: Fall, Spring, Summer Prerequisite(s): PSYC 591 or PSYC 595; Admission to the Experimental Psychology Combined BS/MS program; permission of instructor; acceptance into Psychology Honors Program. Description: Designing of experiments, collection of data, statistical analysis, and report writing in support of the honors thesis. Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).</p>	<p>PSYC 605. Independent Study (Research) 1-9 Units Prerequisite(s): Consent of instructor. Description: Opportunity for the student, under the supervision of a sponsoring faculty member, to pursue individualized study/research. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p> <p>PSYC 600. Research in Cognition 1-3 Units Prerequisite(s): Consent of area coordinator. Description: Supervised research on topics in cognition. Note: May be repeated.</p>	<p>PSYC 606. Professional Development Lab 1-3 Units Grading Basis: Pass/Fail Prerequisite(s): Clinical psychology program. Description: An orientation course for newly-enrolled graduate students in clinical psychology. Covers tools needed to succeed in graduate school (e.g., computer technology and library skills), introduces faculty research areas, provides discussion of issues related to clinical supervision and ethical behavior, and provides students with assistance in developing and implementing research ideas for their thesis projects. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p> <p>PSYC 601. History of Modern Psychology 3 Units Description: An advanced course in the history and development of theories and systems of modern psychology. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>PSYC 607. Statistics 3 Units Prerequisite(s): PSYC 301 or equivalent or consent of instructor. Description: Analysis of psychological data for masters students. Topics surveyed include analysis of variance and multiple regression. Use of statistical computer packages is emphasized. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>PSYC 602. Research in Experimental Psychology 1 Unit Prerequisite(s): Restricted to doctoral students in Psychological & Brain Sciences. Description: Covers topics related to research in Experimental Psychology. Note: May be repeated.</p>	<p>PSYC 609. Topical Seminar in Psychology 3 Units Prerequisite(s): Major in psychology or related area and consent of instructor. Description: Seminars dealing with interdisciplinary issues of modern psychology. Subject matter to be indicated in semester schedules. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p> <p>PSYC 603. Master's Degree Research 1-6 Units Prerequisite(s): Consent of instructor. Description: Research leading to master's degree, to be planned and carried out under the guidance and direction of a committee of faculty members. This research can take the form of either a master's thesis project or a research portfolio as specified by the student's program. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>PSYC 610. Advanced Statistics I 3 Units Prerequisite(s): Admission to the doctoral program or consent of instructor. Description: Review of elementary statistics from a theoretical point of view; probability theory including sample spaces, random variables, density and distribution functions, expectations, and moments; estimation and properties of estimators; hypothesis testing, regression and correlation, and nonparametric methods. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>PSYC 604. Independent Study (Reading) 1-6 Units Grading Basis: Pass/Fail Prerequisite(s): Consent of instructor. Description: Opportunity for the student, under the supervision of a sponsoring faculty member, to pursue individualized study. Pass/Fail grading. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>PSYC 611. Advanced Statistics II 3 Units Prerequisite(s): PSYC 610. Description: A second course for graduate students in experimental design and statistical analysis. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>

<p>PSYC 612. Advanced Statistics III 3 Units Prerequisite(s): PSYC 610 and PSYC 611. Description: Develops a facility on the part of the student in the application of the techniques of multivariate analysis of variance, regression analysis, multidimensional scaling. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>PSYC 631. Sensation and Perception 3 Units Prerequisite(s): Graduate doctoral program standing or permission of instructor. Description: An introductory course to human perception. Course covers perception from neurophysiological encoding and processing of physical stimulation to conscious perception. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>PSYC 613. Research Methods in Vision and Hearing Science 3 Units Description: Survey of basic research methods in vision and hearing science. Includes signal detection theory; information theory, psychophysics, analysis techniques; measurement of light and sound, recording and imaging techniques, and clinical methods. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>PSYC 632. Principles of Visual Science 3 Units Prerequisite(s): PSYC 631, or PSYC 642, or PSYC 643, or consent of instructor. Description: An introduction to the structure and functioning of the visual system including normal and disrupted visual performance. Surveys and integrates findings from neuroanatomical, electrophysiological, psychophysical and clinical research. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>PSYC 614. Advanced Multivariate Modeling 3 Units Prerequisite(s): SOC 610, or PSYC 612, or equivalent. Description: Multivariate statistical techniques in both theoretical and applied sociological research settings. Note: Cross-listed with SOC 616. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>PSYC 633. Visual Processes 3 Units Prerequisite(s): Enrollment in doctoral program or consent of instructor. Description: A consideration of the low-level processes and mechanisms of seeing, including: 1) the sampling and filtering of the image in the eye, 2) the neural representation of the image, and 3) the interpretation of this representation. Emphasis is on form, color and motion abilities. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>PSYC 620. Human Learning 3 Units Prerequisite(s): Consent of instructor. Description: Analysis of basic concepts of conditioning and discussion of major theoretical issues. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>PSYC 634. Intermediate-Level Vision 3 Units Prerequisite(s): Enrollment in doctoral program or consent of instructor. Description: The following topics covered in this course will emphasize the integration of the various approaches such as psychophysics, cognition, neuroscience, computational theory, etc; Stereopsis and 3-D Space Perception; Texture Segregation and Visual Search; Visual Surface Perception; Structure from Motion. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>PSYC 621. Cognitive Processes 3 Units Prerequisite(s): Consent of instructor. Description: Discussion of attention, memory, thinking, and concept learning; language; and problem solving. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>PSYC 635. Sensory Neuroscience 3 Units Description: Consideration of sensory systems, towards the goal understanding how multisensory input is integrated to form perceptions. Major topics include transduction and neuron coding principles; development, plasticity, and cross-modal plasticity; visual-motor interactions; eye movements, attention and consciousness. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>PSYC 622. Proseminar in Cognition 1-3 Units Prerequisite(s): Consent of area coordinator. Description: Critical study of theory and research in cognitive psychology. Note: May be repeated. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>PSYC 636. Human Memory 3 Units Prerequisite(s): Two semesters of cognitive psychology. Description: Survey of major theories and research pertaining to memory, including memory disorders, memory development, and related cognitive processes. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>PSYC 624. Language and Cognition 3 Units Prerequisite(s): LING 325 or LING 327 or graduate standing. Description: Examination of the theory and research on the relationship between fundamental processes of cognition and linguistics processes, e.g., organization of thought, memory, discourse, and text. Note: Cross-listed with LING 624. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	

- PSYC 637. Thinking and Problem Solving** 3 Units
Prerequisite(s): Consent of instructor.
Description: Analysis of major research and theory pertaining to concept learning, deductive reasoning, and problem solving.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PSYC 638. Cognitive and Behavioral Decision Sciences** 3 Units
Prerequisite(s): Enrollment in Psychology PhD Program or Permission of Instructor.
Description: Study of information processing and cognitive theories of decision-making and reasoning.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PSYC 642. Behavioral Neuroscience** 3 Units
Prerequisite(s): Enrollment in doctoral program or consent of instructor.
Description: Survey of the neural and physiological factors which influence behavior.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PSYC 643. Principles of Neuroscience** 3 Units
Prerequisite(s): PSYC 642 and PSYC 531, or consent of instructor.
Description: A survey of the processes underlying the functioning of neurons and neural systems.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PSYC 645. Cognitive Neuroscience** 3 Units
Prerequisite(s): Consent of instructor.
Description: Neuroanatomical basis of cognitive and motor functions, including attention, memory, and language. Primary focus on brain imaging studies of cognition in normal adults.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PSYC 646. Principles of Hearing Science I** 3 Units
Prerequisite(s): Permission of instructor.
Description: The first in a two-course sequence in Hearing Science. It will survey contemporary theory and research in audition, with emphasis on modern mathematical and psychological methods. Major topics will include the anatomy and physiology of the auditory system, measurement and control of sound, auditory signal analysis, and basic auditory abilities such as detection, discrimination, and masking.
Note: Cross-listed with AUDI 648.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PSYC 647. Principles of Hearing Science II** 3 Units
Prerequisite(s): PSYC 646 or consent of instructor.
Description: This is the second course in a two-course sequence in Hearing Science. It will survey research on phenomena in audition that are thought to result from high-level processing in the brain and auditory pathway. Topics will include loudness perception, pitch perception, space perception, auditory object and pattern perception, music perception, and speech perception.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PSYC 651. Introduction to Computer Programming for Psychology** 3 Units
Description: The objective of this course is a broad introduction to how the MATLAB programming language is used in psychology. No prior knowledge of programming languages will be assumed.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PSYC 656. Professional and Ethical Issues in Clinical Psychology** 3 Units
Prerequisite(s): Admission to the Clinical Psychology Doctoral Program or consent of instructor.
Description: An examination of the ethical principles and professional issues in the field of clinical psychology, including aspects related to clinical research. Emphasis is on developing ethical decision-making skills through case-based practice
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PSYC 661. Advanced Developmental Psychology** 3 Units
Prerequisite(s): Consent of instructor.
Description: Survey of the major areas of developmental psychology and of special problems encountered in research with infants and children.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PSYC 670. Advanced Social Psychology** 3 Units
Prerequisite(s): PSYC 372 or consent of instructor.
Description: Advanced study of major areas in social psychology: social learning, person perception, attitudes and attitude change, group dynamics, social structure, and change.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PSYC 673. Advanced Personality Theory** 3 Units
Prerequisite(s): PSYC 375 and consent of instructor.
Description: A selective and critical examination of current theory and research in the area of personality.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PSYC 675. Social Psychology Methods** 1-3 Units
Description: Presentation and use of current methods in the field of social psychology. Emphasis on developing professional skills.
Note: May be repeated.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- PSYC 679. Introduction to Assessment and Clinical Skills** 3 Units
Prerequisite(s): Enrollment in psychology doctoral program or permission of director of training.
Description: A general introduction to psychological assessment, test development, psychometric theory, basic interviewing, legal considerations, theories of prediction and clinical judgment. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PSYC 680. Intellectual and Cognitive Assessment** 3 Units
Prerequisite(s): PSYC 679 and clinical psychology program, or permission of director of clinical training.
Description: Administration, scoring, and interpretation of intelligence, aptitude, and academic achievement tests. Psychometric properties and applications are considered.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PSYC 681. Behavioral and Personality Assessment** 3 Units
Prerequisite(s): Clinical psychology program or permission of Director of Clinical Training.
Description: Covers administration, scoring, and interpretation of the MMPI/Rorschach (Exner system), and principles of cognitive and behavioral assessment techniques. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PSYC 683. Advanced Research Methods in Psychology** 3 Units
Prerequisite(s): Enrollment in psychology doctoral program or permission of director of graduate studies.
Description: Advanced research methods employed in clinical and experimental psychology. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PSYC 684. Psychological Interventions** 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): Consent of Clinical Psychology Doctoral Program Director of Clinical training.
Description: Presents theory and techniques in one or more major therapeutic intervention orientations, along with considerations in applying these interventions such as special populations and varying modalities. Integrated laboratory allows students to apply techniques. Emphasis on empirically validated techniques. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PSYC 685. Clinical Psychology Practicum** 1-3 Units
Grading Basis: Pass/Fail
Prerequisite(s): Enrollment in clinical psychology doctoral program.
Description: Supervised experience in psychological assessments and interventions utilizing various evaluation techniques and treatment approaches.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PSYC 686. Supervised Clinical Psychology Practicum** 1-6 Units
Grading Basis: Pass/Fail
Prerequisite(s): PSYC 685 and clinical psychology program.
Description: Supervised experience for specialized problems or in particular techniques, typically for the most advanced students.
Note: May be repeated.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PSYC 687. Topical Seminar in Clinical Psychology** 3 Units
Prerequisite(s): Consent of instructor.
Description: Survey in depth of current theories, practice, and research in selected areas relevant to clinical psychology. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PSYC 689. Clinical Psychopathology** 3 Units
Prerequisite(s): Consent of instructor; non-psychology majors must receive permission of instructor to enroll.
Description: A review of the causes and manifestations of psychopathology, with particular emphasis on the relevance of the research literature to the analysis and treatment of clinical cases. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PSYC 690. Practicum in College Teaching** 1-3 Units
Prerequisite(s): Permission of instructor.
Description: Guidance and training in college teaching of undergraduate psychology courses. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- PSYC 691. Program Evaluation** 2-3 Units
Description: Review of issues and methods for the assessment of services or treatment efficacy, program effectiveness, and organizational performance in the health and human service areas. Prepares students for conceiving, planning and budgeting, reporting, and implementing program evaluations, need assessments, and client satisfaction studies. Includes preparation for application.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PSYC 692. Program Evaluation Project** 1 Unit
Prerequisite(s): PSYC 691.
Description: Focus is on using the evaluation methods and organizational approaches reviewed in prerequisite coursework for students to carry out actual program evaluation projects. Includes writing proposals, collecting and analyzing data, preparing reports, and working with organizations to help in the utilization of findings for organizational decisions and policies. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PSYC 693. Interviewing Skills Practicum** 1 Unit
Grading Basis: Pass/Fail
Prerequisite(s): Acceptance into doctoral clinical program or consent of instructor.
Description: For first-year clinical doctoral students to receive training in basic interviewing skills, on which all future assessment and psychotherapy skills build. Involves a series of skills modules and videotaped role-play interviews, culminating in a live client interview in the Psychological Services Center. Supervision and training in this course is provided by advanced doctoral students under the supervision of a faculty member.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PSYC 694. Supervision Practicum** 1 Unit
Grading Basis: Pass/Fail
Prerequisite(s): Enrollment in doctoral clinical program.
Description: A companion course to PSYC 693. Students registered for this course will be fourth-year doctoral students (in exceptional cases, third-year students) who wish to develop their supervisory skills. Under the supervision of a faculty member, students registered for these courses will train first-year students acquiring interviewing skills in PSYC 693.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PSYC 696. Clinical Aspects of Child Psychopathology** 3 Units
Prerequisite(s): Consent of instructor or enrollment in clinical psychology doctoral program.
Description: A review of current diagnostic and therapeutic techniques used by clinical psychologists in treating children.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PSYC 697. Psychotherapy Research** 3 Units
Prerequisite(s): PSYC 683 or PSYC 684, or consent of instructor.
Description: An examination of psychotherapy research designed to evaluate the current status of psychotherapy and to develop psychotherapy research techniques.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PSYC 701. Dissertation Research** 1-12 Units
Prerequisite(s): Satisfactory completion of preliminary examination and permission of dissertation director.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PSYC 785. Clinical Psychology Practicum in Professional Settings** 1-10 Units
Grading Basis: Pass/Fail
Prerequisite(s): Clinical psychology program.
Description: Experience in clinical psychology in professional settings under the supervision of professional clinical psychologists.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PSYC 791. Multicultural Counseling Skills: Psychotherapy with Ethnically & Racially Diverse Clients** 1-3 Units
Description: This course will help students learn to connect with and engage racially diverse clients in treatment, with an emphasis on culturally competent counseling skills. Students will demonstrate an ability to conceptualize cases from a CBT orientation, incorporating relevant ethnic, racial, social, cultural and economic factors in to the conceptualization. Students will demonstrate reliable use of Functional Analytic Psychotherapy (FAP) to improve rapport and connect with racially different clients. Students will be able to incorporate FAP into CBT approaches for the treatment of psychopathology and other difficulties in an individualized and culturally competent manner.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PSYC 792. Power, Privilege, and Psychopathology** 3 Units
Prerequisite(s): Consent of Clinical Psychology Doctoral Program Director of Clinical Training.
Description: This course is designed for clinical psychology graduate students hoping to advance their research and clinical skills related to issues of power and privilege. Topics include coverage of how issues of power and privilege influence the conceptualization of psychopathology and play a role in the development and implementation of psychological interventions, as well as identification of biases and oppressive ideologies that may influence research and clinical work with individuals from marginalized groups. Course assignments include papers, presentations, essays, and discussion questions.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PSYC 793. Treatment of Trauma in Diverse Populations 1-3 Units

Description: This course will introduce students to clinical assessment and treatment issues as they relate to culture, race, and trauma. Students will demonstrate an ability to conceptualize cases from a CBT orientation, incorporating relevant ethnic, racial, social, cultural and economic factors in to the conceptualization. Students will demonstrate reliable use of structured interviews and self-report measures, with an understanding of the limitations of such measures in minority populations. Students will be able to assess trauma-related symptomology and differentiate it from other psychopathological conditions. Students will apply empirically validated CBT approaches to the treatment of trauma and common comorbidities in an individualized and culturally competent manner.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PSYC 795. Clinical Internship 0 Units

Grading Basis: Credit/No Credit

Prerequisite(s): Doctoral candidacy and classification is GD or GC; program plan is PhD in Clinical Psychology.

Description: This non-credit course is for clinical psychology doctoral students completing their one-year required internship.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Public Administration (PADM)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

PADM 507. Planning Theory & History 3 Units

Term Typically Offered: Fall Only

Description: This course will introduce the historic foundation of modern urban planning, and investigate the central themes in planning theory, using both historical and contemporary contexts to assist in the understanding of its role in shaping planning thought and practice.

Note: Cross-listed with PLAN 511, PLAN 601, PADM 607, UPA 684.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PADM 600. Foundations of Public Administration 3 Units

Description: Using the classic writings in the field of public administration for the past 150 years, the course explores the theoretical foundations of public administration and applies the theories to current practice in public administration.

Note: Cross-listed with POLS 625, PLAN 613, & UPA 661.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PADM 601. Applied Research Methods 3 Units

Term Typically Offered: Fall, Spring

Description: This course is designed to provide students with the basic analytic tools that are commonly used by professional planners and policy analysis in their daily practice, with a special emphasis on techniques for population and economic analysis. The course will instruct students in foundational statistical methods and techniques, as well as additional analytical tools, including the assumptions underlying the tools and methods and strengths and weaknesses of the tools and methods.

Note: Cross-listed with PLAN 604 and URBS 504.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PADM 603. Program Evaluation 3 Units

Description: This course will cover the key concepts and issues in program evaluation, including performance measurement, threats to validity, data sources and measurement issues, and research design. The primary objective of this course is for the student to understand the professional practice of program evaluation and the ethical considerations that guide the professional evaluator.

Note: Cross-listed with UPA 621.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PADM 604. Public Budgeting and Finance 3 Units

Description: Examines public budgeting and finance from economics, political, and institutional perspectives. Topics include: budget process, approaches and techniques of budgeting, ethics, intergovernmental fiscal relations, revenue-raising, capital budgeting, debt administration and risk management.

Note: Cross-listed with UPA 647 and PLAN 609.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- PADM 605. Public Management** 3 Units
Description: An applied course focusing on developing the knowledge base and skill set one needs to effectively manage a public organization. Special emphasis on leadership models for the public sector.
Note: Cross-listed with UPA 672 and PLAN 610.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PADM 606. Urban Policy Analysis** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): PADM 601 or permission of instructor.
Description: An introduction to basic issues in urban policy analysis, with an emphasis on the urban context. The course describes policy formulation of alternative policy options, analytical tools commonly used to evaluate policies, the correspondence between research and policy analysis, and the practical implications of policy analysis.
Note: Cross-listed with UPA 650.
Note: Course fee.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PADM 607. Planning Theory and History** 3 Units
Term Typically Offered: Fall Only
Description: This course will introduce the historic foundation of modern urban planning, and will investigate the central themes in planning theory, using both historical and contemporary contexts to assist in the understanding of its role in shaping planning thought and practice.
Note: Cross-listed with PLAN 511, PLAN 601, PADM 507, UPA 684.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PADM 609. Nonprofit Management** 3 Units
Description: Management of nonprofit organizations is a graduate seminar in the Masters of Public Administration program. Its purpose is to apply management theories and concepts to nonprofit organizations. As such, the emphasis of this seminar will be relating how nonprofits are managed in a time of scarce resources. Furthermore, students will understand challenges faced by managers as they seek to meet mission objectives, attract public and private support, work with and motivate volunteers, collaborate with other sectors, and meet the challenges of meeting performance objectives.
Note: Cross-listed with POLS 605.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PADM 610. Administrative Law and Process** 3 Units
Description: Study of processes of law-making and application by governmental executive departments. Encompasses substantive issues facing agencies in designing and implementing effective regulation and court efforts to interpret and control agencies' activities.
Note: Cross-listed with POLS 615/UPA 662.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PADM 611. Financial Management of Nonprofits** 3 Units
Description: Examines accounting and financial management for managers of not-for-profit organizations.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PADM 612. Grantsmanship and Fundraising** 3 Units
Description: A critical examination of methods and tools for developing grant proposals and raising funds for organizations.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PADM 615. Leadership and Community Engagement** 3 Units
Term Typically Offered: Spring Only
Description: Focus on leadership approaches, theories and principles in the public and nonprofit sectors to improve performance, meet citizen expectations, and restore trust. Students learn effective leadership and community engagement practices for transforming organizations and communities.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PADM 621. Urban Demography and GIS** 3 Units
Term Typically Offered: Spring Only
Description: This course will introduce students to geographic information systems (GIS) as an analytical tool with which to study urban demographic issues. The material will be geared towards students in the urban planning, public administration, and urban studies programs, with a focus on demographic data and issues frequently encountered by planners, policymakers, and policy analysts. Topics that will be covered include migration, housing and neighborhood development, segregation, and land use.
Note: Cross-listed with SUST 518, PLAN 618, URBS 518.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PADM 624. Ethics in Public Administration** 3 Units
Description: Analyzes and explains the role of ethics for the practice of public administration. The development of ethical codes is traced from moral and constitutional roots. Course will include case studies and legal precedents.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PADM 625. Organizational Behavior** 3 Units
Description: Concepts and theories from the behavioral sciences that describe human behavior in public organizations. Special emphasis on organizational culture and group dynamics.
Note: Cross-listed with UPA 660.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PADM 626. Housing and Community Development 3 Units

Description: Examines issues in housing and community development.
Note: Cross-listed with UPA 648 and PLAN 617.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PADM 627. Environmental Policy 3 Units

Description: Survey of environmental issues and policies designed to address these issues.
Note: Cross-listed with PLAN 620, UPA 679, POLS 627.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PADM 628. Historic Preservation & Sustainable Practice 3 Units

Term Typically Offered: Spring Only

Description: This course is a graduate level course on historic preservation, examining sustainable practices in Louisville and other regions. The course examines architecture and the built environment as it relates to historic preservation, urban revitalization, and the contributions of other disciplines such as urban planning, economics, and political science to the principles and practice of preservation.

Note: Cross-listed with PLAN 625 and UPA 651.

Note: Course fee.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PADM 640. Urban Economics 3 Units

Prerequisite(s): PLAN 500, ECON 500, or consent of instructor.

Description: Application of economic theory to urban policy issues including metropolitan development and job creation, poverty, crime, transportation, environment, spatial structure, and other issues.

Note: Cross-listed with ECON 605, UPA 603 and PLAN 603.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PADM 642. Human Resources Management 3 Units

Description: Basic theories, public policies, laws, regulations, problems, and prospects of human resource development and management within the context of the public sector.

Note: Cross-listed with UPA 667 and PLAN 611.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PADM 645. Economic Development 3 Units

Description: The course provides an introduction to the many facets of economic development, including the context, theory, process and practice of economic development planning and policy.

Note: Cross-listed with PLAN 626, UPA 640, POLS 603.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PADM 648. Mediation and Dispute Resolution 3 Units

Description: Designed principally for incipient practitioners of the mediation process. Class participation, serving as a mediator in cases presented to the class, and a short paper depicting mediating in process are the course requirements.

Note: Cross-listed with POLS 628, PLAN 612.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PADM 663. Social Equity and the Public Sector 3 Units

Description: This course will provide a comprehensive review of social equity in American public administration.

Note: Cross-listed with PLAN 663 and UPA 663.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PADM 664. Cultural Competency and Action 3 Units

Description: This course primarily focuses on the professional development of public administrators. It seeks to improve their knowledge about diverse issues of discrimination and prejudice in the public sector. It provides a framework for examining factors related to discrimination as well as racism, sexism, and heterosexism in terms of political history, power, stereotyped perceptions and practices across society, groups and among individuals.

Note: Cross-listed with PADM 664 and UPA 664.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PADM 670. Sustainable Development & Planning 3 Units

Description: The course is designed to address institutions and governance in sustainable development, and will take an interdisciplinary approach. The course will be open to graduate students in any program at UofL.

Note: Cross-listed with PLAN 670 and UPA 670.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PADM 675. Introduction to Sustainability 3 Units

Prerequisite(s): Graduate standing.

Description: It is a graduate survey course of theory, issues and challenges in the area of sustainability. Open to any graduate student at UofL.

Note: Cross-listed with PLAN 675, UPA 675.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PADM 676. Sustainable Social-Ecological Systems 3 Units

Prerequisite(s): Graduate standing.

Description: The course is designed to address the social and ecological frameworks for understanding and applying sustainability concepts in both theory and practice. The course will be open to all graduate students in any program at UofL.

Note: Cross-listed with PLAN 676, UPA 676.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PADM 680. Independent Research in Public Administration 1-3 Units

Prerequisite(s): Permission of coordinator.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PADM 682. Practicum/Internship 1-6 Units

Prerequisite(s): Permission of internship-practicum coordinator.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PADM 683. Topical Seminar in Public Administration 1-3 Units

Prerequisite(s): Permission of instructor.

Description: Exploration of a specific topic or problem area in administration.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PADM 688. Land Use and Planning Law 3 Units

Description: Examination of pertinent legal issues, including ordinances, state and federal legislation, and court rulings, impinging on planning and land use activities.

Note: Cross-listed with PLAN 605 and UPA 678.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PADM 695. Thesis 1-6 Units

Prerequisite(s): Permission of internship-practicum coordinator.

Description: Thesis research/preparation.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Public Health - Biostatistics (PHST)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that

they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

PHST 500. Introduction to Biostatistics for Health Sciences I 3 Units

Term Typically Offered: Fall Only

Prerequisite(s): Enrolled as a student in the PH MPH, MSc or Certificate in Clinical Investigation Sciences program.

Description: An introduction to descriptive and inferential statistical methods, including descriptive and graphical methods, estimation, calculation of confidence intervals, and 1- and 2-sample hypothesis testing, one-way analysis of variance (ANOVA), and simple linear regression. The R statistical software environment will be used to introduce data management and descriptive and inferential statistical methods.

Note: Students interested in this course that do not meet the stated prerequisites should contact the department of Bioinformatics and Biostatistics.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHST 501. Introduction to Biostatistics for Health Sciences II 3 Units

Prerequisite(s): PHST 500.

Description: This course is a continued graduate level introduction to inferential statistical methods, covering multi-way analysis of variance, multiple regression, the chi-square analysis of frequencies and logistic regression, survival analysis, and nonparametric statistical methods.

A statistical software package will be used to execute the descriptive, graphical, and inferential statistical techniques on real data sets.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHST 520. Statistical Computing and Data Management with SAS 3 Units

Term Typically Offered: Spring Only

Prerequisite(s): PHST 301, or equivalent (MATH 109, SOC 301, PSYC 301, PAS 408).

Description: This course will introduce students to the fundamental of data management and analysis using SAS. It will give an overview of the SAS system under MS Windows and provide a fundamental grounding in the data step and Base SAS procedure. We will cover elementary statistical analyses such as measures of location and spread, correlation, detection of outliers, graphical displays, comparison of groups, as well as additional specialized studies.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

<p>PHST 561. Mathematical Tools I 1 Unit Term Typically Offered: Summer Only Prerequisite(s): Conditional or full admission to the MS or Certificate in Biostatistics programs. Description: This course covers mathematical tools required for sound comprehension of mathematical probability and statistics concepts included in methodological portions of coursework in the MS in Biostatistics degree. Course topics include: (1) functions and graphs with particular focus on polynomials and roots, rational functions, and exponential and logarithmic functions, and (2) limits and continuity of functions. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>PHST 602. Biostatistics Seminar 1 Unit Prerequisite(s): Enrolled in the PhD or MS in Biostatistics, PH MPH, Math major in Graduate School. Description: Weekly seminar series for MS and PhD Biostatistics students. Students will hear speakers present their current research in bioinformatics and biostatistics and report on the work. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>PHST 562. Mathematical Tools II 1 Unit Term Typically Offered: Summer Only Prerequisite(s): Conditional or full admission to the MS or Certificate in Biostatistics programs. Description: This course covers mathematical tools required for sound comprehension of mathematical probability and statistics concepts included in methodological portions of coursework in the MS in Biostatistics degree. Course topics include: (1) first and higher order differentiation of single variable functions and techniques for differentiation, (2) applications of differentiation including identification of minima, maxima, and inflection points, (3) antiderivatives, the definite integral, and the Fundamental Theorem of Calculus, (4) techniques of integration including substitution, integration by parts, etc.; using integrals to compute areas, and (5) sequences and series, convergence of each, partial and infinite sums, geometric series, Taylor series. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>PHST 603. Biostatistics Public Health Practicum I 1-2 Units Prerequisite(s): Enrolled in MS in Biostatistics, PH MPH or Math major in Graduate School. Description: Practical experience in biostatistical collaboration at the master's level, in which a student works with one or more investigators in the health sciences. Students typically engage in the statistical analysis of investigator data sets and are required to generate and present a report to the collaborating investigators. Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>PHST 563. Mathematical Tools III 1 Unit Term Typically Offered: Summer Only Prerequisite(s): Conditional or full admission to the MS or Certificate in Biostatistics programs. Description: This course covers mathematical tools required for sound comprehension of mathematical probability and statistics concepts included in methodological portions of coursework in the MS in Biostatistics degree. Course topics include: (1) multivariable functions, limits, and continuity, (2) partial differentiation and its applications, and (3) multiple integration and its applications. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>PHST 604. Biostatistics 1-2 Units Term Typically Offered: Fall, Spring, Summer Prerequisite(s): PHST 603. Description: Practical experience in biostatistical collaboration at the master's level, in which a student works with one or more investigators in the health sciences. Students typically engage in the statistical analysis of investigator data sets and are required to generate and present a report to the collaborating investigators. Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>PHST 564. Mathematical Tools IV 1 Unit Term Typically Offered: Summer Only Prerequisite(s): Conditional or full admission to the MS or Certificate in Biostatistics programs. Description: This course covers mathematical tools required for sound comprehension of mathematical probability and statistics concepts included in methodological portions of coursework in the MS Biostatistics degree. Course topics include (1) vector/matrix algebra and operations, (2) solving systems of linear equations, (3) vector spaces, linear independence, rank, and basis, (4) eigenvalues and eigenvectors, (5) orthogonal vectors and projections, (6) quadratic forms. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>PHST 620. Introduction to Statistical Computing 3 Units Term Typically Offered: Fall Only Prerequisite(s): PHST 500 or enrolled in MS or Certificate in Biostatistics or MS in Health Data Analytics programs. Description: This course provides an introduction to SAS. It will give students an overview of the SAS system under MS Windows and provide fundamental grounding in the environment for accessing, structuring, formatting and manipulating data. Students will learn how to summarize and display data, and the inference between data steps and procedures to get information out of data. Note: Students interested in this course that do not meet the stated prerequisites should contact the department of Bioinformatics and Biostatistics. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>

- PHST 624. Clinical Trials I: Planning and Design** 2 Units
Term Typically Offered: Fall Only
Prerequisite(s): Enrollment in the MS or Certificate in Biostatistics or the MSc or Certificate in Clinical Investigation Sciences.
Description: Phases of Trials, Ethical Issues, Basic Design, Inclusion and Exclusion criteria, Randomization and Blinding, Sample Size, Monitoring Response Variables, and Issues in Data Analysis
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHST 625. Clinical Trials II** 2 Units
Prerequisite(s): PHST 624.
Description: Sample Size and Power Analysis, Survival Analysis, Sequential Design, Meta Analysis, Reporting and Interpreting of Results, Multicenter Trails. SPSS will be used.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHST 631. Data Collection for Clinical Research** 2 Units
Term Typically Offered: Fall Only
Prerequisite(s): Enrolled in the MSc in Clinical Investigation Sciences or the Certificate in Clinical Investigation Sciences program and PHST 500 completed or concurrent.
Description: This course covers the identification and selection or design and analysis of instruments for collecting data used in clinical research. Psychometric/biometric properties of data collected using instruments are addressed extensively. REDCap (Research Electronic Data Capture) and SPSS will be used extensively.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHST 640. Statistical Methods for Research Design in Health Sciences** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): Enrollment in the MS or Certificate in Biostatistics, or PHST 500.
Description: Statistical methods for clinical research and interpretation of the literature.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHST 645. Health Sciences Data Collection Instrumentation** 3 Units
Prerequisite(s): Enrollment in the MS in Biostatistics, or PHST 500 completed or concurrent.
Description: This course covers the identification and selection or design and analysis of instruments for collecting data used in health sciences research and evaluation. Psychometric/biometric properties of data collected using instruments are addressed extensively. Epi Info 7 will be used to develop data collection instruments and SPSS will be used for data management and analysis. This will be taught as a hybrid course.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHST 650. Advanced Topics in Biostatistics** 1-3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Permission from the instructor.
Description: A treatment of one or more topics in advanced biostatistics not usually covered in a regularly offered course.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHST 655. Basic Statistical Methods for Bioinformatics** 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): Must earn higher than a C- in PHST 681 and enrollment in MS in Biostatistics degree program.
Description: This course provides an introduction to some core topics in bioinformatics. Topics will include-pairwise and multiple sequence alignment algorithms; gene expression profiling using microarrays; introduction to next generation sequencing; analyzing RNA-Seq data and phylogenetics. Students are expected to be familiar with some elementary statistics and probability concepts.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHST 660. Mathematical Tools** 4 Units
Prerequisite(s): Enrolled in MS in Biostatistics and MATH 190 or equivalent.
Description: This course focuses on the basic techniques of differential and integral calculus, and matrix algebra. Topics include the chain rule, higher-order derivatives, partial derivatives, improper integrals, multiple integrals, sequences and series, vector and matrix arithmetic, and eigenvalues.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHST 661. Probability** 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): Full admission to the MS in Biostatistics or Math major in Graduate School or enrolled in the MS in Health Data Analytics program.
Description: Introduction to probability theory. Topics include axioms of probability, conditional probability, discrete and continuous random variables, probability distributions and joint distributions, moments, moment generating functions, mathematical expectation, transformations of random variables, limit theorems (Law of Large Numbers and Central Limit Theory).
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHST 662. Mathematical Statistics** 3 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): Must earn higher than a C- in PHST 661 and enrolled in the MS in Biostatistics program.
Description: A first course in statistical theory. Topics include limiting distributions, maximum likelihood estimation, least squares, sufficiency and completeness, confidence intervals, Bayesian estimation, Neyman-Pearson Lemma, uniformly most powerful tests, likelihood ratio tests and asymptotic distributions.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- PHST 666. Master's Thesis Research** 1-6 Units
Prerequisite(s): Enrolled in the MS in Biostatistics or Math major in Graduate School; accumulation of at least 18 hours of PHST credit hours.
Description: Mentored research; Thesis Preparation.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHST 671. Special Topics in Biostatistics** 1-3 Units
Prerequisite(s): Enrolled in the MS in Biostatistics or Math major in Graduate School.
Description: A treatment of one or more topics in advanced Biostatistics not usually covered in a regularly offered course. May be repeated under different subtitles.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHST 675. Independent Study in Biostatistics** 1-3 Units
Prerequisite(s): PHST 661 and enrolled in the MS in Biostatistics or Math major in Graduate School.
Description: Course allows students to pursue advanced study with faculty guidance on a topic related to biostatistics.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHST 680. Biostatistical Methods I** 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): Enrollment in the MS or Certificate in Biostatistics or Math major in Graduate School, or PHST 501.
Description: A mathematically sophisticated presentation of statistical principles and methods. Topics include exploratory data analysis, graphical methods, point and interval estimation, hypothesis testing, and categorical data analysis. Matrix algebra is required. Data sets drawn from biomedical and public health literature will be analyzed using statistical computer packages.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHST 681. Biostatistical Methods II** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): Must earn higher than a C- in PHST 680.
Description: This course offers a mathematically sophisticated introduction to simple regression models and analysis of variance. Matrix algebra is required and data analysis will be illustrated drawing examples from biomedical and public health literature.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHST 682. Multivariate Statistical Analysis** 3 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): Must earn higher than a C- in PHST 662.
Description: The topics covered in this course include the multivariate normal distribution, inference for mean vectors, inference for covariance and correlation matrices, analysis of covariance structure, analysis of serial measurements, factor analysis, and discriminant analysis. Statistical methods and models that are most useful in multivariate data analysis will be introduced. Instruction will also be given in the proper use of R to carry out these analyses.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHST 683. Survival Analysis** 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): Must earn higher than a C- in PHST 662 and PHST 681.
Description: Statistical methods for analyzing survival data. Parametric and nonparametric methods for complete and incomplete data, life-table, KM estimator, accelerated lifetime models, proportional hazard models, log-rank tests, and goodness-of-fit tests.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHST 684. Categorical Data Analysis** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): Must earn higher than a C- in PHST 680.
Description: Topics include inference for two-way contingency tables, models for binary response variables, log-linear models, models for ordinal data, multinomial response data, Poisson regression and analysis of repeated categorical response data. Emphasis will be placed on methods and models most useful in biomedical and public health research.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHST 691. Bayesian Inference and Decision** 3 Units
Prerequisite(s): PHST 681 and enrolled in the PhD or MS in Biostatistics or Math major in Graduate School.
Description: Focuses on the use of Bayesian probability and statistics in both scientific inference and formal decision analysis. The frequency and subjective interpretations of probability are explored, as well as probability and decision making. The course will explore inference for both single-parameter, multiple-parameter, and hierarchical models. A significant amount of time will be devoted to Bayesian computational methods.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHST 703. Biostatistical Consulting Practicum** 1-3 Units
Prerequisite(s): Enrollment in the PhD in Biostatistics program and completion of PHST 710, PHST 762, PHST 781, and PHST 691.
Description: In depth practical experience in biostatistical collaboration at the doctoral level, in which a student works with one or more investigators in the health sciences. Students typically engage in the statistical analysis of investigator data sets and are required to generate and present a report to the collaborating investigators.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHST 704. Mixed Effect Models and Longitudinal Data Analysis** 3 Units
Prerequisite(s): Enrollment in the PhD in Biostatistics program and PHST 781.
Description: The course focuses on theory and application of linear and nonlinear mixed effect models, particularly, the application of mixed models to longitudinal data analyses.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- PHST 710. Advanced Statistical Computing I** 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): Enrolled in the MS or PhD in Biostatistics and earn higher than a C- in PHST 681.
Description: The intent of this course is to develop knowledge of a statistical programming language and computational methods that are essential to statistics. The course primarily focuses on the R programming language and covers a variety of programming topics related to R (vectorization, data I/O, object-oriented programming, and building R packages). Statistical and computational methods that are covered include visualization (basic and lattice graphics), data smoothing, optimization (Newton-Raphson and EM-algorithm), matrix factorization, simulation (inverse transform and acceptance-rejection methods, power and size of a test), numerical integration, resampling (bootstrap and permutation tests), and other modern statistical methods. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHST 711. Advanced Statistical Computing II** 3 Units
Prerequisite(s): Enrolled in the MS or PhD in Biostatistics and PHST 710.
Description: This is a continuation of the statistical programming techniques, skills, and theory covered in PHST 710. The intent of this course is to further develop your ability to perform statistical programming. This includes carrying-out computational tasks, interfering with diverse data types and formats, and writing functions to implement statistical methods. Potential topics include multivariate optimization, C++ programming in R, statistical learning methods, non-parametric smoothing, dimension reduction/variable selection, and Markov Chain Monte Carlo (MCMC) methods. Additionally, the course may cover computing concepts such as cross-validation/resampling, regular expressions, and computing on the R language. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHST 724. Advanced Clinical Trials** 3 Units
Prerequisite(s): Enrolled in the PhD in Biostatistics and PHST 624 and PHST 681 or equivalent.
Description: Advanced statistical methods for design and analysis of clinical trials are explored. Content includes design and analysis of complex clinical studies, including phases I, II, and III clinical trials for dichotomous, normally distributed and time-to-event outcomes. SAS, R and EAST will be extensively used. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHST 725. Design of Experiments** 3 Units
Prerequisite(s): Enrolled in the PhD in Biostatistics and PHST 681 or equivalent.
Description: The course introduces experimental design principles and covers specific designs in detail. Concepts will be illustrated using examples from the health services and engineering. SAS in R will be extensively used. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHST 750. Statistics for Bioinformatics** 3 Units
Prerequisite(s): Enrolled in the PhD in Biostatistics and PHST 661.
Description: This course focuses on the statistical methods and computational tools for analyzing data generated from DNA and protein sequences, genetic maps, and polymorphic marker data. This course will review the basics of genetics/molecular biology and statistical inference and probability needed for analyzing DNA and protein sequences. Covered topics include introduction to stochastic processes, analysis and motif discovery within a single DNA/protein sequence, comparison and alignment of two or more DNA/protein sequences, the foundations of substitution matrices, the statistical underpinnings of BLAST, hidden Markov models, evolutionary models, and phylogenetic trees. This course is developed for individuals interested in pursuing research in computational biology, genomics, and bioinformatics. Students are expected to be familiar with some elementary statistics and probability concepts. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHST 751. High-throughput Data Analysis** 3 Units
Prerequisite(s): Enrolled in the PhD in Biostatistics and PHST 661.
Description: The array of high speed, high dimension and highly automated biotechnical equipment including next generation DNA sequencers (NGS), microarray, and metabolomics and proteomic analyzers (mass spectrometers) are all designed to capture and process vast amounts of biological data. All these data generation platforms require customized statistical analyses dealing with high dimensional data. In this course we will introduce the statistical methodologies needed to analyze the data generated by these high-throughput technologies. Covered statistical topics include modern methods for classification, dimension reduction/variable selection methods, and clustering. The course will also cover practical aspects of high-throughput data analysis including microarray data, NGS data, and proteomic mass-spectrometer data. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHST 752. Statistical Genetics** 3 Units
Prerequisite(s): Enrolled in the PhD in Biostatistics and PHST 681.
Description: This course covers the principles of Mendelian genetics, linkage analysis, association analysis, and quantitative trait models. The main goal is to provide the students a foundation of the statistical theory of inheritance and enough expertise to analyze and interpret genetic association studies. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHST 762. Advanced Statistical Inference** 3 Units
Prerequisite(s): Enrolled in the PhD in Biostatistics and PHST 662.
Description: This course is a mathematically sophisticated introduction to the theory and methods of statistical inference, including point and interval estimation and hypotheses testing. Students will learn fundamental technical tools that are essential to carry out methodological research in the field of Biostatistics. Emphasis will be placed on how to correctly propose statistical methods with desirable properties in a general setting including asymptotic unbiasedness, robust variance estimation and efficiency. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHST 777. Dissertation Research 1-12 Units

Prerequisite(s): Enrolled in the PhD in Biostatistics, satisfactory completion of PhD qualifying examination, and permission of dissertation director.

Description: The PhD student may take a total of up to 24 hours credit for the planning, data collection, analysis, and writing of the research project that results in the doctoral dissertation. PHST 777 must be taken under the direction of the student's major professor. Dissertation research hours are seen as a major component of the doctoral program.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHST 780. Advanced Nonparametrics 3 Units

Prerequisite(s): Enrolled in the PhD in Biostatistics and PHST 662.

Description: This course is a mathematically advanced introduction to theory and methods of nonparametric statistics. The first part of the course covers topics including theory of distribution-free statistics based on ranking, U-statistics, Kolmogorov-Smirnov one-sample statistics, Chi-square goodness-of-fit test, asymptotic relative efficiency. The second part of the course covers nonparametric density and regression estimation based on kernel, splines, local polynomial and wavelet methods.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHST 781. Advanced Linear Models 3 Units

Prerequisite(s): Enrolled in the PhD in Biostatistics and PHST 662.

Description: An introduction to the theory of linear models, with an emphasis on health sciences applications. Topics include projections, distributions of quadratic forms under normality, estimation procedures, general linear hypotheses, estimating and testing linear parametric functions, simultaneous inference, multifactor ANOVA models, and covariance.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHST 782. Generalized Linear Models 3 Units

Prerequisite(s): Enrolled in the PhD in Biostatistics and PHST 781.

Description: The course covers the advanced statistical methods and inferences based on the exponential family of distributions, with linear model, logistic regression model, and log-linear as its special cases. Generalized estimating equations for correlated responses are also covered.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHST 783. Advanced Survival Analysis 3 Units

Prerequisite(s): Enrolled in the PhD in Biostatistics; PHST 662 and PHST 683.

Description: This course is a mathematically advanced introduction to the theory and methods of survival analysis. It offers an in-depth analysis of parametric and non-parametric models for general event-time data. It also provides a brief overview of complex models like multi-state models and competing risks.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHST 785. Nonlinear Regression 3 Units

Prerequisite(s): Enrolled in the PhD in Biostatistics and PHST 781.

Description: The course covers advanced statistical methods for non-linear regressions. Linear models, generalized linear models, and least squares estimates will be reviewed. The least squares estimates, algorithm for obtaining the estimates, statistical inferences, and model diagnostic tests for nonlinear regression models will be covered.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Public Health - Environmental Health (PHEH)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

PHEH 500. Introduction to Environmental and Occupational Health Sciences 3 Units

Prerequisite(s): Enrollment in School of Public Health and Information Sciences.

Description: This course provides students with the basic concepts and principles of environmental health and occupational health including environmental agents in water, air and soil, such as chemicals, biological and physical agents, and other important factors that may constitute a risk to humans. It also provides an overview of the basic principles and methods of risk assessment and risk management. This course is designed for all public health practitioners and meets the core environmental health requirement for the MPH degree program. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHEH 525. Biological Basis for Parasitic and Infectious Diseases 1 Unit

Prerequisite(s): PHEH 500 (or concurrently).

Description: This course will provide an overview of key biological concepts related to the pathogenic responses of humans to infectious and parasitic agents. The central questions addressed by the course include: What strategies are used by different types of pathogens to interact with host cells and what physical/cellular barriers impact host infectious/parasite interactions; and how do host cells/organisms respond to different types of pathogens through innate and adaptive immune responses to infectious/parasitic diseases.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHEH 526. Nutrition and Maternal and Child Health 3 Units

Term Typically Offered: Spring Only

Description: This course covers the scientific foundations of human nutrition and digestion, methodologies for nutritional assessment in at-risk populations, and the impact of food scarcity/nutritional inadequacy on maternal/child.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHEH 610. Occupational Health and Safety 3 Units

Prerequisite(s): PHEH 500 and enrollment in the School of Public Health and Information Sciences.

Description: This course will focus on the prevention of work-related injuries and illnesses as well as the management and control of workplace hazards. Information on the identification of workplace hazards, governmental regulations and issues pertaining to specific industries, and safety management programs will also be presented. The course will also include discussion of principles of ergonomics, including the role of job design in maximizing productivity and injury prevention.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHEH 620. Global Issues in Environmental and Occupational Health 3 Units

Prerequisite(s): PHEH 500 and enrollment in the School of Public Health and Information Sciences.

Description: This course will focus on the nature, impact and determinants of health problems among disadvantaged populations in developing countries.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHEH 640. Environmental Risk Assessment 3 Units

Prerequisite(s): PHEH 500 and PHEP 501 (or equivalent courses); student must also be enrolled in the School of Public Health and Information Sciences.

Description: This course Introduces students to the nomenclature, concepts, and basic skills of quantitative environmental risk assessment (QRA). The goal is to provide an understanding necessary to read and critically evaluate QRA. Emphasis is on the intellectual and conceptual basis of risk assessment, particularly its dependence on toxicology and epidemiology, rather than its mathematical constructs and statistical models. Specific cases consider the use of risk assessment for setting environmental exposure limits and quantifying the hazards of environmental exposures to chemicals in air and drinking water.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHEH 650. Advanced Topics in Environmental and Occupational Health 3 Units

Prerequisite(s): PHEH 500 and enrollment in the School of Public Health and Information Sciences.

Description: This course will build upon principles acquired in the introductory course by presenting advanced concepts on environmental and occupational health as novel factors that may constitute a risk to humans in developed and industrialized countries.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHEH 651. Advanced Environmental Health Services 3 Units

Prerequisite(s): PHEH 500 and enrollment in the School of Public Health and Information Sciences.

Description: This course is an in-depth examination of current topics in environmental health issues and practice and builds on principles presented in the prerequisite introductory course. Current topics within the broad category of environmental health will be explored with emphasis on environmental toxicology and nutrition. Specific topics include introduction to toxicological concepts, pulmonary toxicology, air pollution, susceptible populations, biosafety, public health nutrition including malnutrition and the environmental impact of agriculture. The course includes a traditional lecture format as well as in-class and online discussion groups for selected topics.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHEH 750. Seminar 1 in Environmental Health 1 Unit

Grading Basis: Pass/Fail

Prerequisite(s): Enrollment in PhD in Public Health Sciences, Environmental Health Specialization Program in the School of Public Health and Information Sciences.

Description: In a series of seminar courses over four semesters, doctoral students engage as junior peers with faculty to: 1) critically review the current environmental health literature, 2) develop skills in preparing and making oral and poster presentations, 3) prepare at least one publication quality manuscript, and 4) develop an NIH-formatted R01 style research proposal.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHEH 751. Seminar 2 in Environmental Health 1 Unit**Grading Basis:** Pass/Fail**Prerequisite(s):** PHEH 750 and enrollment in PhD in Public Health Sciences, Environmental Health Specialization program in the School of Public Health and Information Sciences.**Description:** In a series of seminar courses over four semesters, doctoral students engage as junior peers with faculty to: 1) critically review the current environmental health literature, 2) develop skills in preparing and making oral and poster presentations, 3) prepare at least one publication quality manuscript, and 4) develop an NIH-formatted R01 style research proposal.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**PHEH 752. Seminar 3 in Environmental Health** 1 Unit**Grading Basis:** Pass/Fail**Prerequisite(s):** PHEH 750, PHEH 751, and enrollment in PhD in Public Health Sciences, Environmental Health Specialization program in the School of Public Health and Information Sciences.**Description:** In a series of seminar courses over four semesters, doctoral students engage as junior peers with faculty to: 1) critically review the current environmental health literature, 2) develop skills in preparing and making oral and poster presentations, 3) prepare at least one publication quality manuscript, and 4) develop a NIH-formatted R01 style research proposal.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**PHEH 753. Independent Study in Environmental and Occupational Health** 1-6 Units**Prerequisite(s):** Enrollment in the PhD program in Public Health Sciences, Environmental Health Specialization in the School of Public Health and Information Sciences.**Description:** This course provides students with the opportunity to develop a research project or investigation of an environmental or occupational health topic under the supervision of a faculty mentor. The student identifies an academic advisor and develops a proposal that includes a detailed syllabus with methods to evaluate the proposed work and criteria for assigning a grade. Both student and advisor sign documents describing their respective duties, and the proposed study is to be completed within 90 days after approval of the proposal.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**PHEH 754. Seminar 4 in Environmental Health** 1 Unit**Grading Basis:** Pass/Fail**Prerequisite(s):** PHEH 750, PHEH 751, and PHEH 752 and enrollment in PhD in Public Health Sciences, Environmental Health Specialization program in the School of Public Health and Information Sciences.**Description:** In a series of seminar courses over four semesters, doctoral students engage as junior peers with faculty to: 1) critically review the current environmental health literature, 2) develop skills in preparing and making oral and poster presentations, 3) prepare at least one publication quality manuscript, and 4) develop a NIH-formatted R01 style research proposal.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Public Health - Epidemiology (PHEP)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

PHEP 501. Introduction to Epidemiology 3 Units**Term Typically Offered:** Fall Only**Prerequisite(s):** Enrollment in the School of Public Health and Information Sciences.**Description:** Basic epidemiological methods are presented: terminology; study design; issues of contemporary practice; basic skills for interacting with epidemiologists, reading disease control literature, and drawing on epidemiological concepts.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**PHEP 602. Epidemiological Methods** 3 Units**Prerequisite(s):** PHEP 501 and enrollment in the School of Public Health and Information Sciences.**Description:** This course reviews the design, performance, and analysis of epidemiological research studies.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**PHEP 604. Epidemiology of Infectious Disease** 2 Units**Prerequisite(s):** Enrollment in the School of Public Health and Information Sciences.**Description:** This course will discuss the epidemiology and prevention of infectious disease.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**PHEP 605. Research in Infectious Disease** 1 Unit**Prerequisite(s):** Enrollment in the School of Public Health and Information Sciences.**Corequisite(s):** Concurrent enrollment in PHEP 604.**Description:** This course provides students with an opportunity to expand the content of epidemiology of infectious disease with a research project.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- PHEP 606. Genetic and Molecular Epidemiology** 3 Units
Prerequisite(s): Enrollment in the School of Public Health and Information Sciences.
Description: The course examines basic principles of Mendelian inheritance in humans and the fundamentals of genetic action in relation to disease etiology.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHEP 607. Epidemiology of Cancer** 2 Units
Term Typically Offered: Spring Only
Prerequisite(s): Enrollment in the School of Public Health and Information Sciences and successful completion of PHEP 616 or PHEP 622.
Description: This course reviews the epidemiology of selected cancers and the relationship between environmental and genetic factors in cancer etiology. The roles of risk assessment and screening for cancers in selected organ systems are also addressed.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHEP 608. Research in Cancer** 1 Unit
Prerequisite(s): Enrollment in the School of Public Health and Information Sciences.
Corequisite(s): Concurrent enrollment in PHEP 607.
Description: This course provides students with an opportunity to expand the content of epidemiology of cancer with a site-specific, directed research experience.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHEP 609. Epidemiology of Cardiometabolic Disease** 2 Units
Term Typically Offered: Spring Only
Prerequisite(s): Enrollment in the School of Public Health and Information Sciences and successful completion of PHEP-616 or PHEP-622.
Description: This course focuses on the epidemiology of metabolic syndrome, and related disorders, including hypertension, dyslipidemia, atherosclerosis, heart disease, stroke, diabetes, kidney disease, and dementia.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHEP 610. Research in Cardiovascular Disease** 1 Unit
Prerequisite(s): Enrollment in the School of Public Health and Information Sciences.
Corequisite(s): Concurrent enrollment in PHEP 609.
Description: This course provides students with an opportunity to expand the content of epidemiology of cardiovascular disease with a research project.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHEP 611. Nutritional Epidemiology** 3 Units
Prerequisite(s): Enrollment in the School of Public Health and Information Sciences.
Description: This course examines epidemiologic methodology in relation to nutritional measures and the epidemiology of nutritional diseases and disorders.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHEP 613. Epidemiology of Aging and Disability** 3 Units
Prerequisite(s): Enrollment in the School of Public Health and Information Sciences.
Description: This course covers the principles and methods of epidemiology as applied to the study of aging. Major research issues in aging epidemiology and methods to study them will be presented.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHEP 614. Introduction to Clinical Epidemiology** 2 Units
Prerequisite(s): Enrolled in the School of Public Health and Information Sciences or the Certificate in Clinical Investigation Sciences.
Description: This course introduces the student to the basic concepts of clinical epidemiology, including epidemiological study designs and methods applied in clinical research for determining the sensitivity and specificity of diagnostic criteria, efficacy of treatments and interventions, and evaluating prognosis and outcomes.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHEP 615. Foundations of Global Maternal and Child Health** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): Enrollment in the School of Public Health and Information Sciences.
Description: This course provides an overview of global maternal and child health (MCH), including both international and U.S. contexts. The course introduces the main components of MCH, MCH history, programs and policies, data sources, epidemiologic issues, and specific MCH challenges for the future. The primary goals of the course are to introduce masters and doctoral students to the issues that affect the health of women and children. This course will incorporate various theories and perspectives, such as the life course perspective; human growth and development; biological, environmental, and social factors related to maternal and child health. This is a survey course that will cover MCH theory, policy, programs, epidemiology, child growth and development, maternal health, and environmental aspects of health. Cross-cutting themes will include socioeconomic aspects, data and epidemiology, and policy.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHEP 616. Disease Surveillance and Health Statistics** 3 Units
Prerequisite(s): PHEP 501 and enrollment in the School of Public Health and Information Sciences.
Description: This course reviews the basic concepts and terminology of disease surveillance and covers the spectrum of health statistics, including population censuses, health surveys and disease reporting systems.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHEP 617. Field Epidemiology** 3 Units
Prerequisite(s): PHEP 501 and enrollment in the School of Public Health and Information Sciences.
Description: This course focuses on the practical aspects of doing field epidemiology.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- PHEP 618. Epidemiologic Methods II** 4 Units
Term Typically Offered: Spring Only
Prerequisite(s): Enrollment in the M.
Description: S. in Epidemiology or the PhD in Public Health Sciences Specialization in Epidemiology program. This course provides an intensive review of epidemiologic methods with hands-on application to existing or simulated epidemiologic datasets under a variety of study designs.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHEP 619. Biology of Disease in Populations** 3 Units
Prerequisite(s): Enrollment in the School of Public Health and Information Sciences.
Description: This course provides an overview of the biology and basic pathophysiology of common acute and chronic diseases and conditions from the epidemiologic perspective.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHEP 620. Environmental and Occupational Epidemiology** 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): Completion of or concurrent enrollment in PHEP-602 Epidemiological Methods or enrolled in the MS in Epidemiology program.
Description: This course offers an overview of selected topics in environmental and occupational epidemiology and methods for studying environmental and occupational determinants of disease.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHEP 621. Statistical Foundations for Epidemiology** 4 Units
Term Typically Offered: Fall Only
Prerequisite(s): Enrollment in the MS in Epidemiology program or the PhD in Public Health Sciences specialization in Epidemiology program.
Description: This course introduces essential statistical concepts and foundations for epidemiologists. It is designed for epidemiology students to exercise statistical theory and computer programming using R software as applied to epidemiologic problem-solving.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHEP 622. Population Pathology** 3 Units
Prerequisite(s): Enrollment in the MS program in Epidemiology or the Public Health Sciences PhD program with specialization in Epidemiology.
Description: This course introduces students to the physiologic measures and biomarkers that are used by public health researchers and practitioners to assess the health status of populations.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHEP 623. Theoretical Foundations of Epidemiology** 3 Units
Prerequisite(s): Enrollment in the MS program in Epidemiology or the Public Health Sciences PhD program specialization in Epidemiology.
Description: This course provides an overview of the history of epidemiology, the development of theory, study designs and methods, and ethical and legal issues in the translation of epidemiologic findings into public health policy.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHEP 624. Methods in Reproductive and Perinatal Epidemiology** 3 Units
Prerequisite(s): Successful completion of, or concurrent enrollment in, PHEP 501.
Description: This course allows students to pursue foundational studies in the epidemiology of reproduction and maternal/child health with an emphasis on the biology of reproduction, epidemiological studies, and maternal and perinatal health.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHEP 625. Child Health & Development** 3 Units
Prerequisite(s): Enrollment in the School of Public Health and Information Sciences.
Description: This course focuses on the core processes of human health and development from infancy through adolescence in global contexts covering the developed and developing worlds. This course covers developmental theories, issues and research findings related to physical growth and cognitive, emotional, and social development. This course also covers evaluation and efficacy of popular early intervention programs and policies designed to enhance development in at risk populations of children. Cross-cutting themes will include socioeconomic and cultural aspects of growth and development, epidemiology of disease, data sources, and policy considerations.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHEP 626. Introduction to Social Epidemiology** 3 Units
Term Typically Offered: Occasionally Offered
Prerequisite(s): Enrollment in the School of Public Health and Information Sciences.
Description: This course is an introduction to Social Epidemiology, with an emphasis on the theoretical underpinning of social epidemiology and methodologic issues, including definition/measurement of social constructs, appropriate research designs, and analytic approaches. Topics used as lens for understanding social epidemiologic theory and methods focus on global and domestic maternal and child health.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHEP 627. Survey Research Methods** 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): Enrollment in the MPH program in the School of Public Health and Information Sciences and PHEP 501.
Description: This course will provide students with a comprehensive understanding of survey research methods. It will focus on all aspects of the survey research process, from sampling, design of instruments prior to data collection, including online instruments, and including analysis of survey data and reporting. Students will learn about sources of bias, psychometrics (assessing validity and reliability), measurement theory, and ethical issues. They will also gain first-hand experience of survey analysis using applied techniques.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHEP 647. Epidemiology Data Management & Analytics Lab 2 Units

Term Typically Offered: Spring Only

Prerequisite(s): PHEP 602 or concurrently.

Description: Graduate student in public health services will learn to analyze epidemiologic data using the Epi info and SAS statistical packages for Windows.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHEP 650. Advanced Topics in Epidemiology 1-3 Units

Prerequisite(s): Enrollment in the School of Public Health and Information Sciences.

Description: The purpose of this course is to provide an opportunity to address issues in Epidemiology not covered in the regularly offered curriculum.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHEP 655. Emerging Issues in Epidemiology 3 Units

Prerequisite(s): PHEP 501 and enrollment in the School of Public Health and Information Sciences.

Description: This course is an overview of emerging topics in epidemiology. Emphasis is on the role that practicing epidemiologists have played or are playing in current public health events.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHEP 666. Master's Independent Study in Epidemiology and Population Health 1-6 Units

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): Enrolled in the MS in Epidemiology or the MPH concentration in Epidemiology and Population Health.

Description: Course allows master's students to pursue advanced study with faculty guidance on a topic related to epidemiology and population health.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHEP 701. Advanced Epidemiologic Methods 3 Units

Prerequisite(s): Enrollment in the MS program in Epidemiology or the Public Health Sciences PhD program with specialization in Epidemiology.

Description: This course covers advanced statistical methods used in epidemiologic research including: multivariable logistic regression, Cox Proportional Hazards, multivariate analysis, meta-analysis, longitudinal data analysis, and structural equation models.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHEP 702. Epidemiologic Research Management 3 Units

Prerequisite(s): Enrollment in the Public Health Sciences PhD program with specialization in Epidemiology.

Description: This course provides a comprehensive introduction to the practical methods necessary for conducting epidemiologic research including study design, regulations, databases, sampling, recruitment and tracking, instrument design, and data quality control.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHEP 703. Computational Epidemiology 3 Units

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): PHEP 621, PHEP 623, PHEP 618, and PHEP 701; instructor permission is required for MS Epidemiology students.

Description: This course provides an intensive review of common and statistical and machine learning techniques used in computational epidemiology with hands-on application to existing or simulated datasets under a variety of study designs.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHEP 750. Seminars in Epidemiology 2 Units

Prerequisite(s): Enrollment in the Public Health Sciences PhD program with specialization in Epidemiology.

Description: Doctoral students engage with faculty as junior-peers to develop skills such as research proposal writing, grant budgeting, peer review, manuscript preparation, oral and poster presentation.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHEP 777. Dissertation Research 3 Units

Prerequisite(s): Completion of Doctoral Qualifying Examination for Public Health Sciences PhD program with specialization in Epidemiology.

Description: This course is for mentored dissertation research in the PhD Program in Epidemiology.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHEP 778. Doctoral Independent Study in Epidemiology and Population Health 1-6 Units

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): Enrollment in the PhD program in Public Health Sciences with specialization in Epidemiology.

Description: Course allows doctoral students to pursue advanced study with faculty guidance on a topic related to epidemiology and population health.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Public Health - Health Promotion & Behavioral Science (PHPB)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific

fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

PHPB 501. Introduction to Public Health Behavior 3 Units

Term Typically Offered: Fall Only

Prerequisite(s): Enrollment in the School of Public Health and Information Sciences.

Description: This course reviews theoretical constructs of the causation of health-related behavior, including preventive, early diagnosis, treatment and rehabilitative behavior.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPB 611. Community-Centered Engagement and Assessment 3 Units

Term Typically Offered: Spring Only

Prerequisite(s): Enrollment in the MPH program in the School of Public Health and Information Sciences or instructor permission.

Description: Students in this course develop and apply the knowledge, skills, and methods for conducting community health assessments. Students will identify factors that affect the health of a population and discuss the assessment process as a tool for community organizing.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPB 612. Health Communication: Theory and Practice 3 Units

Term Typically Offered: Fall Only

Description: This course uses health communication theories and methods to design and evaluate health communication materials that capitalize on opportunities afforded by the current context. Students will learn the concepts of effective public health communication across multiple media and levels of the social ecology, considering a variety of audiences, and achieving multiple purposes. Students will also learn to critically analyze examples of communication and develop culturally responsive communication material oriented towards public health interventions. The course will emphasize the development of delivering health information in a meaningful, actionable, and accessible manner.

Note: Cross-listed with COMM 652.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPB 614. Public Health Intervention Design, Implementation, and Sustainment 3 Units

Term Typically Offered: Fall Only

Prerequisite(s): Enrollment in the School of Public Health and Information Sciences or instructor permission.

Description: The course establishes basic skills for public health program planning and implementation. Students will learn how to apply the results of a community assessment to create a theory of change, and to design and describe the implementation of public health interventions to enhance population health and promote health equity. In this course, students will develop skills regarding the purpose, procedures, terminology, and specific techniques in public health intervention design and implementation at multiple levels of the social ecology. Students will also consider factors that impact interventions sustainment and achieve health outcomes.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPB 615. Program Evaluation 3 Units

Term Typically Offered: Fall Only

Prerequisite(s): Completion of PHPB 614 or instructor permission.

Description: This graduate level course presents advanced concepts in program evaluation and builds on PHPB-614 Public Health Intervention Design, Implementation and Sustainment. Students who enroll in this seminar-oriented course will complete a program evaluation project and apply program theory, principles and methods in program evaluation. Students will learn about formative research, process evaluation, impact assessment, cost analysis, and theory-based evaluations. Students will gain experience by designing a logic model, selecting indicators and data sources, and designing an evaluation plan to measure both processes and impacts of interventions.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPB 630. Social and Structural Determinants of Health 3 Units

Term Typically Offered: Spring Only

Prerequisite(s): Enrollment in the MPH program in the School of Public Health and Information Sciences or instructor permission.

Description: The purpose of this course is to introduce social and structural factors that impact health, including theories and evidence that support multiple underlying determinants of health in populations. This course will explore how social influences such as socioeconomic status, the natural and physical environment, education, employment, gender, race/ethnicity, sexual orientation, and housing/neighborhood quality affect population health. This course will also consider intervention approaches to improve population health outcomes and address health inequities. This course examines structural factors that impact population health in the US as well as structural interventions to address health inequities.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPB 635. Health Promotion Policy Development 3 Units

Term Typically Offered: Fall Only

Prerequisite(s): Enrollment in the MPH program in the School of Public Health and Information Sciences or instructor permission.

Description: This seminar and lab-structured course will provide a review of social justice as a foundation of public health. We will focus on equity and inclusion in the policy process as core principles and a mechanism toward health equity. Policy development is a process and an outcome and in this course, students will also learn by doing field-based research. Finally, students will understand how principles of political sociology can apply to population health and inform policy development.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPB 650. Advanced Topics in Health Promotion and Behavioral Sciences 1-3 Units

Term Typically Offered: Occasionally Offered

Description: An in-depth treatment of one or more advanced topics in health promotion and behavioral sciences, designed to advance the student's understanding in the field and not covered in other courses.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPB 651. Equitable Leadership and Program Management in Public Health 4 Units**Term Typically Offered:** Spring Only

Description: This course exposes students to the principles of effective leadership, applying leadership and ethical principles and theories to enhance professional capabilities in the context of creating an equitable work setting and intervention delivery. The course will examine the design, management, and leadership of teams in organizational settings focusing on the interpersonal processes and structural characteristics that influence the effectiveness of teams, the dynamics of intra-team relationships, and sharing of knowledge and information in teams. Students will also learn to manage resources within a framework of managing people, processes, budgets, and organizational design focused on diversity, equity, and inclusion. The course covers the role of grants in funding, implementing, and evaluating public health interventions with particular emphasis on identifying grant opportunities, understanding the components of a grant, and developing a grant to fund a public health interventions.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPB 652. Evidence-Based Practices in Public Health 3 Units**Term Typically Offered:** Spring Only

Description: This course provides an overview of the design and conduct of research in the social and behavioral sciences as applied to public health. Students will learn how to write a literature review, including where to find public health literature and how to critique presented evidence as it influences evidence-based practice. Students will also examine the formulation of a research question, selection of a research design, selection of a study site and population, methods of data collection, and measurement validity and reliability. The aim is to give students a broad background and an understanding of strengths and weaknesses of research designs used in the social sciences so they can be thoughtful producers, and/or critical and skeptical consumers of research.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPB 654. Foundations of Health Equity 2 Units**Term Typically Offered:** Spring Only

Description: This course provides a foundation with which to facilitate community assessment, identify and advocate for interventions and policies that can remediate and eliminate inequities in health across the population.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPB 701. Theoretical Basis of Health Promotion 3 Units

Prerequisite(s): Doctoral student in the School of Public Health and Information Sciences PhD in Public Health Sciences, Health Promotion Specialization program or instructor permission.

Description: Explores historical developments in the health promotion, current state of the health promotion discipline and main emphases are PRECEDE/PROCEED and other planning models, and research issues for the future.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPB 703. Health Promotion Research Methods and Design 3 Units

Prerequisite(s): Doctoral student in the School of Public Health and Information Sciences PhD in Public Health Sciences, Health Promotion Specialization program or instructor permission.

Description: Behavioral sciences, such as health promotion are dependent on rigorous studies carried out by well-trained researchers. In this course, we will explore the commonly used research designs. Students will learn how the validity of information and data gathered is limited by, among other factors, the research methods chosen, the carefulness and attentiveness of the researcher, the willingness of the participant, and the selection of statistical analyses.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPB 705. Policy to Advance Health Equity 3 Units**Term Typically Offered:** Spring Even Years

Prerequisite(s): Doctoral student in the School of Public Health and Information Sciences PhD in Public Health Sciences, Health Promotion Specialization program, or instructor approval.

Description: This seminar-structured course provides a review of the extent and nature of community health problems requiring community-based solutions, as opposed to solutions for individuals. Included in the course will be concepts of community organizing, empowerment and processes of policy advocacy and formation. The course will develop practitioner competencies as well as an agenda for addressing the issues.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPB 709. Philosophy of Science & Evaluation Theory 3 Units**Term Typically Offered:** Fall, Spring, Summer

Prerequisite(s): Doctoral student in the School of Public Health and Information Sciences PhD in Public Health Sciences, Health Promotion & Behavioral Sciences Specialization program or instructor permission.

Description: Students in this course develop a deeper understanding of the ethics and politics surrounding epistemology and ontology and apply this to the theoretical underpinnings of evaluating public health programs.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPB 710. Social Justice and Health Equity Research 3 Units**Term Typically Offered:** Fall Only

Prerequisite(s): Doctoral student in the School of Public Health and Information Sciences PhD in Public Health Sciences, Health Promotion Specialization program, or instructor approval.

Description: This course presents concepts and approaches in Social Justice and Health Equity Research. Students will learn about emancipatory approaches to research, social justice movements in health, and community-engaged research practices.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPB 711. Qualitative Research Methods in Public Health 3 Units

Prerequisite(s): Doctoral student in the School of Public Health and Information Sciences PhD in Public Health Sciences, Health Promotion Specialization program, or instructor approval.

Description: The course presents theories and methods in qualitative research design and inquiry. Students will apply qualitative data collection, coding, and analysis skills to public health problems. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPB 722. Health Risk Communication 3 Units

Prerequisite(s): Doctoral student in the School of Public Health and Information Sciences PhD in Public Health Sciences, Health Promotion Specialization program, or instructor approval.

Description: This course presents the principles and theories of health risk communication and promotes an understanding of the psychological responses to risk and risk messages.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPB 730. Teaching Seminar in Health Promotion and Behavioral Sciences 1 Unit

Grading Basis: Pass/Fail

Term Typically Offered: Summer Only

Prerequisite(s): Enrollment in the PhD program in Public Health Sciences or instructor permission.

Description: This course will introduce students to a variety of pedagogical theories and practices. In addition, students will be introduced to concepts regarding trauma-informed and culturally responsive educational practice.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPB 731. Teaching Lab in Health Promotion and Behavioral Sciences 2 Units

Grading Basis: Pass/Fail

Term Typically Offered: Summer Only

Prerequisite(s): Completion of or concurrent enrollment in PHPB 730.

Description: This course is designed as a practice lab for doctoral students interested in teaching at the college level. Building upon the Teaching Seminar course, this lab will provide students with a guided forum to develop and test classroom and learning tools, activities, and assessments to further their teaching skills, and will address classroom management topics and strategies. This course is required for PhD students in Health Promotion and Behavioral Sciences to be able to teach a course for the department independently at the undergraduate level.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPB 740. Race, Racism, and Public Health 3 Units

Term Typically Offered: Spring Only

Prerequisite(s): Doctoral student in the School of Public Health and Information Sciences PhD in Public Health Sciences, Health Promotion Specialization program, or instructor approval.

Description: This class examines anti-Black racism and its impact on public health in the US. It emphasizes interpersonal, internalized, and institutional factors that affect the health status of the populace. It also engages in an analysis of historical and modern social movements to address racism and facilitate health equity.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPB 750. Doctoral Seminar in Health Promotion & Behavioral Sciences 1 Unit

Grading Basis: Pass/Fail

Term Typically Offered: Fall, Spring

Prerequisite(s): Admission to the PhD in Public Health Sciences with a specialization in Health Promotion & Behavioral Sciences.

Description: This course is designed as a professional development seminar for doctoral students in Health Promotion & Behavioral Sciences that will focus on navigating specific aspects of the PhD program, such as qualifying exams and dissertation, as well as building personal and professional skills and preparation for success in a leadership position.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPB 753. Independent Study in Health Promotion and Behavioral Sciences 1-6 Units

Prerequisite(s): Doctoral student in the School of Public Health and Information Sciences PhD in Public Health Sciences, Health Promotion Specialization program, or instructor permission.

Description: Provides students an opportunity to develop a research project or investigation of a health promotion and behavioral health topic under the supervision of a faculty mentor.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Public Health, Management Systems Sciences (PHMS)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

PHMS 501. Introduction to Public Health Practice and Administration 3 Units**Term Typically Offered:** Fall Only**Prerequisite(s):** Enrolled in the School of Public Health and Information Sciences.**Description:** This course emphasizes the practical application of the principles of health care organizations to public health at the national, state and local levels.**Note:** Taught only at the graduate level.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**PHMS 505. Governance and Management of Healthcare Organizations** 3 Units**Term Typically Offered:** Fall Only**Prerequisite(s):** Enrolled in the MS in Health Administration or the undergraduate Minor in Healthcare Management program in the School of Public Health and Information Sciences.**Description:** This course seeks to provide the student with an understanding of organizations and leadership from dominant ways of thinking about them to ways informed by a complexity perspective. Course participants will read about and discuss a broad range of perspective about what constitutes an organization and leadership of it. Particular attention will be given to the organizational experiences of the student and the experience of the class in being together. Course is held on the Health Sciences Campus and is co-scheduled with the graduate credit section of this course.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**PHMS 509. Health Finance and Financial Management** 3 Units**Term Typically Offered:** Spring Only**Prerequisite(s):** Enrolled in the MS in Health Administration or the undergraduate Minor in Healthcare Management program in the School of Public Health and Information Sciences.**Description:** This course is designed to provide an overview of health finance and financial management, including context of health finance and the approaches and processes involved in managing the health enterprise. Course is held on the Health Sciences Campus and is co-scheduled with the graduate credit section of this course.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**PHMS 520. Foundations of Public Health in Health Management** 3 Units
Term Typically Offered: Fall Only**Prerequisite(s):** Enrolled in the MS in Health Management program in the School of Public Health and Information Sciences.**Description:** This course is designed to introduce new students in the Masters of Science in Health Administration (MSHA) to the field of Public Health in the United States. It provides a broad overview of the field of public health. With a population health focus, we look at protecting and promoting the health needs of a community using the tools of public health like the community needs assessment, and including core areas of epidemiology, biostatistics, health promotion, environmental health, and health care administration as well as introducing students to the Foundational Public Health Knowledge Competencies as prescribed by the Council for Education in Public Health (CEPH).For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**PHMS 530. Comparative Health Systems** 3 Units
Term Typically Offered: Spring Only**Description:** This course examines health delivery and public health systems from a global perspective. The course focuses on teaching students to describe elements of these systems, the environment in which the systems exist, and the internal and external forces through which systems change. Although the structure of different health systems vary, most also have substantial similarities especially in the areas of improving access and quality, while minimizing costs. The course focuses on health systems, using examples of health systems in different countries to demonstrate system similarities and differences. The course will provide a framework for analyzing different models of organizing health care and public health in settings around the world. The course will engage students in examining health systems outside the United States, focusing specifically on how a country's history, geography, government, and economy influence the delivery of health services.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**PHMS 610. Health Policy and Analysis** 3 Units
Term Typically Offered: Spring Only**Description:** This course is designed to introduce students to health policy, mechanisms through which policy is made at the state and federal level, and strategies for health policy analysis.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**PHMS 615. Introduction to Health Systems** 3 Units
Term Typically Offered: Fall Only**Description:** This course will provide an introduction to the health sector as it currently operates in the US. A systems-theory based approach, informed by complexity theory, will be used to present health systems as complex adaptive networks. Through a review of the history of the health sector the student will learn how the industry has evolved (adapted) to where it is today, and where it may be going in the future.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- PHMS 620. Healthcare Strategic Management** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): Enrollment in the MS in Health Administration in the School of Public Health and Information Sciences.
Description: This course offers an introduction to strategic management within contemporary healthcare organizations and markets. Lectures and assignments will focus on various topics including organizational strategy formulation, implementation, and evaluation.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHMS 625. Population Health Management** 3 Units
Description: This course will provide an introduction to managing the health of populations. Population health can be defined by geography and demographics. Examples of defined populations include: the population within the catchment area of a hospital, the members of a health maintenance organization, the persons served by an accountable care organization, and the population employed in a workplace. Improving the health of populations has always been a high priority for public health professionals but has been less of a priority for managers of health care organizations, with their focus on the acute-care needs of individual patients.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHMS 630. Human Resource Management in the Public Health Sector** 3 Units
Prerequisite(s): Enrollment in the School of Public Health and Information Sciences.
Description: The purpose of this course is to provide the master's degree/ PhD student in public health and health care fields an overview of Human Resources Management. This will include looking at the framework of human resources management in various settings; planning and developing a competent workforce in various settings; and practice in techniques for training, mentoring and evaluating employees as well as a range of disciplinary actions.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHMS 635. Health Law and Ethics** 3 Units
Prerequisite(s): Enrollment in the Master of Science in Health Administration or MPH concentration in Health Policy program.
Description: This course provides an overview of major contemporary legal and ethical issues related to administrative decision making in health care and population health.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHMS 637. MSHDA Capstone Course** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): Enrollment in the Master of Science in Health Data Analytics program.
Description: This course is an intergrative learning experience drawing on all companies presented in the MSHDA program. It requires the students to work independently as a member of a team to complete a comprehensive and relevant health data analytics for a healthcare-related organization and to successfully pass a competency examination.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHMS 638. Data Security & Electronic Health Records** 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): Enrolled in MS in Health Data Analytics program.
Description: The course will focus on the framework, the real-world use, and the critical data security issues in deployment of Electronic Health Records, (EHRs) to improve the quality of health care delivery. Students will learn functionality of EHRs through hands-on labs, technical infrastructures require for EHRs (e.g., architecture, network, security design), understand how EHRs change health care delivery workflows, best practice for deploying EHRs (e.g., project management, typical budgets, system selection, HIPAA governmental requirements, funding), and data security-related issues critical to EHRs implementation.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHMS 639. Health Data Analytics Practicum** 1-3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Enrolled in MS in Health Data Analytics program.
Description: The practicum experience is designed to bridge the gap between academia and health data analytics practice by providing field experience at a health data analytics-related worksite. Each MSHDA student identifies a practice site, develops a learning agreement in consultation with the practice site mentor and faculty mentor, works at the site to address the components of the learning agreement and to gain experience within the organization, prepares a written characterization of the practice site, and prepares written and oral reports describing the practicum experience.
- Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- PHMS 641. Data Mining I** 3 Units
Prerequisite(s): Enrollment in any of the following programs: MS in Health Data Analytics, MS in Biostatistics concentrations in Biostatistics or Bioinformatics, or PhD in PHS specialization in Health Management & Policy.
Description: The course is first in a two semester sequence graduate level introduction to data mining/big data analytics. It focuses on practical implementation and interpretation of the most commonly used techniques in analysis of very large datasets.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

<p>PHMS 642. Data Mining II 3 Units Prerequisite(s): PHMS 641. Description: This is the second of a two semester graduate level course on data mining/big data analytics. It focuses on practical implementation and interpretation of the most commonly used techniques in analysis of very large datasets. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>PHMS 643. Data Management in Health Service Research 3 Units Term Typically Offered: Fall, Spring, Summer Prerequisite(s): Enrollment in the MS in Health Data Analytics or PhD in PHS specialization in Health Management & Policy program. Description: Course allows students to pursue study with faculty guidance on data management in health service research. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>PHMS 644. Biomedical Foundations for Health Analytics 3 Units Term Typically Offered: Fall Only Prerequisite(s): Enrolled in MS in Health Data Analytics program. Description: This course will offer an integrative molecular and biological perspective on public health problems and health data analytics. Students will explore population biology and ecological principles underlying public health and reviews molecular biology in relation to public health biology. Lectures focus on specific diseases of viral, bacterial, and environmental origin. Instructors will use specific examples of each type to develop the general principles that govern interactions among susceptible organisms and etiologic agents and devotes special attention to factors that act in reproduction and development. The course will focus on common elements including origin and dissemination of drug resistance, organization and transmission of virulence determinants, modulation of immune responses, disruption of signal transduction pathways, and perturbation of gene expression. Also considers the role of the genetic constitution of the host. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>PHMS 650. Advanced Topics in Health Management and Systems Science 3 Units Term Typically Offered: Fall, Spring, Summer Prerequisite(s): Enrollment in the PhD in Public Health Sciences specialization in Health Management & Policy. Description: This course will usually focus on one topic in advanced health management and systems sciences, not usually covered in a regularly offered course (or if offered in a regularly offered course, not covered in-depth). For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>PHMS 662. Health Economics 3 Units Description: The course uses principles of microeconomic analysis to study health care systems: demand for medical services; role of health insurance; productivity/cost measurement; labor markets and competition. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>PHMS 670. Statistical Data Management 3 Units Term Typically Offered: Fall, Spring Prerequisite(s): Enrolled in the MS in Health Data Analytics or PhD in Public Health Sciences specialization in Health Management & Policy degree programs, or with instructor permission. Description: The course is designed as an introduction to data management and analysis in SAS (Statistical Analysis System) and Stat (Stat Statistical Software). Data management and graphics will be practiced, and linear regression basics where data summary, regression in levels and logs, correlation analysis, hypothesis testing, specification analysis, prediction, using sampling weights, and model diagnostics will be discussed. This course covers all components of econometric modeling, namely, model selection, estimation, diagnostic checks, and model re-specification. Health data will be used in both midterm and final projects of the course. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>PHMS 645. Health Services Research Methods I 3 Units Term Typically Offered: Fall, Spring Description: The course is designed to introduce students to quantitative techniques and considerations appropriate for observational studies in Health Services Research. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>PHMS 646. Health Services Research Methods II 3 Units Term Typically Offered: Fall Only Prerequisite(s): PHMS 645 and PHST 501. Description: This course is designed to prepare students to answer and critically examine questions regarding casual inference in Health Services and Health Policy Research as well as other research settings using observational data. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>PHMS 671. Statistical Analysis for Population Health 3 Units Term Typically Offered: Fall, Spring Description: Pre-Requisite: PHMS 670 or Instructor permission. This course is designed as an introduction to statistical analysis for population health in IBM SPSS Statistics 26.0 software package. The course covers basic components of statistical analysis for population health including linear regression, logistic regression, Cox regression, propensity score analysis, cluster analysis, discriminant analysis, multivariate analysis of covariance, repeated measures, and regression trees. Health data will mainly be used in examples and the final project of the course. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>			

<p>PHMS 680. Health Management Leadership Seminar 1 Unit Prerequisite(s): Enrollment in the School of Public Health and Information Sciences. Description: The course bridges MPH concentration in Population Health Management coursework and the world of practice with a focus on developing career planning and professional skills. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>PHMS 686. MSHA Practicum Experience I 1 Unit Grading Basis: Pass/Fail Term Typically Offered: Spring Only Prerequisite(s): Enrollment in the Masters of Science in Health Administration program. Description: The MSHA practicum documents students' mid-program administrative experience in a healthcare setting. The practice experience occurs in a carefully selected healthcare organization approved by the MSHA Director. Students are encouraged to select a practicum based on their career interests. A faculty advisor supervises the internship-type experience in tandem with a qualified preceptor at the practicum site. Our goal is that the preceptor serves as a mentor for the student. Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.</p>
<p>PHMS 681. Population Health Quantitative Methods 3 Units Term Typically Offered: Fall Only Prerequisite(s): Enrolled in the MS in Health Administration program in the School of Public Health and Information Sciences. Description: The goal of the course is to build quantitative analysis foundations for students in health management emphasizing decision-making using health data. The course provides an overview of basic quantitative analysis techniques, and discusses a variety of quantitative analysis tools. Access to Microsoft Windows is required for some course content. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p> <p>PHMS 687. Managerial Accounting for Healthcare Managers 3 Units Term Typically Offered: Fall Only Prerequisite(s): Successful completion of PHMS 509. Description: This course provides an overview of the principles and processes of managerial accounting and organizational finance within the healthcare marketplace. Lectures, assignments, and case studies will focus on various topics including financial statement analysis, costing, pricing, planning, budgeting, and financial risk analysis. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>PHMS 682. Population Health Information Management 3 Units Term Typically Offered: Fall Only Description: This course is designed to introduce students to key concepts and issues surrounding the adoption and use of information systems for population health management. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>PHMS 688. Healthcare Marketing 2 Units Term Typically Offered: Fall Only Prerequisite(s): PHMS 620. Description: This course offers an introduction to marketing and marketing strategy within the healthcare system. Lectures and assignments will focus on various topics including strategy formulation, environmental analysis, and market assessment. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>PHMS 683. Healthcare Quality Management 3 Units Term Typically Offered: Fall, Summer Prerequisite(s): Concurrent enrollment in or successful completion of PHMS 681. Description: This course is designed to introduce students to key concepts and issues surrounding the adoption and use of information systems and the use of quality assessment processes within health care organizations. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>PHMS 689. Insurance & Alternative Payment Models 2 Units Term Typically Offered: Spring, Summer Prerequisite(s): Successful completion of PHMS 509, PHMS 662, and PHMS 687. Description: This course is designed to provide students an analysis of the U.S. health insurance and payment system. Specific topics include health plan types and characteristics, population health alternative financing models, premium setting, and reimbursement of health providers. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>PHMS 684. Project Management for Population Health 3 Units Term Typically Offered: Spring Only Description: This course is designed to introduce students to key concepts and methodologies involved in managing projects and the use of specific project management tools and processes within health care organizations. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>PHMS 685. Health Operations & Management Science 3 Units Term Typically Offered: Spring Only Description: This course introduces and reviews the field of operations management as applied to healthcare organizations. It demonstrates the important relationship between operations research and the management science of complex healthcare delivery organizations. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>

<p>PHMS 690. MSHA Capstone Course</p> <p>Term Typically Offered: Spring Only</p> <p>Description: This course is an integrative learning experience drawing on all competencies presented in the MSHA program. It requires the students to work independently as a member of a team to complete a comprehensive and relevant business plan for a healthcare-related organization and to successfully pass an oral examination. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>	<p>PHMS 694. Innovation and Entrepreneurship in Healthcare</p> <p>Term Typically Offered: Fall, Spring, Summer</p> <p>Prerequisite(s): Enrollment in the MS in Health Administration program, online track only.</p> <p>Description: This course is designed to enhance and improve student techniques and skills in entrepreneurship as applied to business venture development in healthcare markets. The focus is the student "being" an entrepreneur and acquiring the skills necessary to evaluate, plan, and develop business opportunities. Assignments should be treated as if the future of an organization or community depends on the success of the venture. The course will enable students to define the nature, skills, and spirit of entrepreneurs, evaluate and practice entrepreneurship, and conduct market research to develop an innovative and viable business model. Students will learn to conduct market analysis to identify competitors and industry trends. Class activities will identify and evaluate different sources of financing for startups and financial factors of successful businesses. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>
<p>PHMS 691. MSHA Practicum Experience II</p> <p>Grading Basis: Pass/Fail</p> <p>Term Typically Offered: Fall Only</p> <p>Prerequisite(s): Enrollment in the Master of Science in Health Administration program and successful completion of PHMS 686.</p> <p>Description: The MSHA practicum documents students' mid-program administrative experience in a healthcare setting. The practice experience occurs in a carefully selected healthcare organization approved by the MSHA Director. Students are encouraged to select a practicum based on their career interests. A faculty advisor supervises the internship-type experience in tandem with a qualified preceptor at the practicum site. Our goal is that the preceptor serves as a mentor for the student.</p> <p>Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>1 Unit</p>	<p>PHMS 700. Introduction to Health Services Research</p> <p>Description: This course is designed to introduce students to research that addresses the inherent tradeoffs among cost, quality, and access to care as it pertains to the effectiveness, efficiency, and equity of public health and personal health services. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>
<p>PHMS 692. MSHA Practicum III</p> <p>Term Typically Offered: Spring Only</p> <p>Prerequisite(s): Enrollment in the Masters of Science in Health Administration program and successful completion of PHMS 691.</p> <p>Description: The MSHA practicum documents students' mid-program administrative experience in a healthcare setting. The practice experience occurs in a carefully selected healthcare organization approved by the MSHA Director. Students are encouraged to select a practicum based on their career interests. A faculty advisor supervises the internship-type experience in tandem with a qualified preceptor at the practicum site. Our goal is that the preceptor serves as a mentor for the student.</p> <p>Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>1 Unit</p>	<p>PHMS 708. Population Health and Health Disparities</p> <p>Term Typically Offered: Fall Odd Years</p> <p>Prerequisite(s): Enrollment in the PhD in Public Health Sciences Specialization in Health Management and Policy program at the School of Public Health and Information Sciences.</p> <p>Description: This course examines the social determinants of health within the context of population health, including conceptual models and policy approaches that are designed to lessen the negative impact of health disparities that are attributed to these factors, and to improve the health-related quality of life (HRQL) assessments among community residents and their families, peers and social groups. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>
<p>PHMS 694. Innovation and Entrepreneurship in Healthcare</p> <p>Term Typically Offered: Spring Only</p> <p>Description: This course is designed to introduce students to health policy, mechanisms through which policy is made at the state and federal level, and strategies for health policy analysis. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>	<p>PHMS 710. Advanced Health Policy and Analysis</p> <p>Term Typically Offered: Spring Only</p> <p>Description: This course is designed to introduce students to health policy, mechanisms through which policy is made at the state and federal level, and strategies for health policy analysis. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>
<p>PHMS 715. Health Policy Research</p> <p>Description: This course is designed to introduce students to research that aims to inform public policy and health organizations decisions related to the effectiveness, efficiency, and equity of public health, population health, and personal health services. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>	<p>PHMS 715. Health Policy Research</p> <p>Description: This course is designed to introduce students to research that aims to inform public policy and health organizations decisions related to the effectiveness, efficiency, and equity of public health, population health, and personal health services. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>3 Units</p>

PHMS 720. Organizational Theory in Health Services Research 3 Units
Term Typically Offered: Spring Only

Description: The purpose of this course is to provide the health management doctoral student with a rigorous set of theoretical tools that they can use to examine and investigate how health organizations function.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHMS 725. Economic Evaluation in Health Care 3 Units
Term Typically Offered: Fall Only

Description: Principles, models and practical methods for the economic evaluation of health care services with an emphasis on medical devices.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHMS 740. Microeconomic Theory 3 Units
Term Typically Offered: Spring Only

Description: This course is designed to introduce HMSS policy research doctoral students to the core principles of microeconomic theory, specifically as it relates to health policy-making and health care delivery.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHMS 751. Seminar I in Public Health Management 1 Unit
Term Typically Offered: Fall Only

Prerequisite(s): Enrollment in the School of Public Health and Information Sciences PhD in Public Health Sciences program with specialization in Health Management and Policy.

Description: Doctoral students engage with faculty to discuss and review significant literature related to major influential factors impacting the context of doctoral careers in public health management and to develop a final paper on a topic related to specific aspects of the profession, research, and the creation of new knowledge within public health management. Students will also develop effective oral presentations of these topics.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHMS 752. Seminar II in Public Health Management 1 Unit
Term Typically Offered: Spring Odd Years

Prerequisite(s): Enrollment in the School of Public Health and Information Sciences PhD in Public Health Sciences program with specialization in Health Management and Policy.

Description: Doctoral students engage with faculty to discuss and review significant literature related to major influential factors impacting the context of doctoral careers in public health management and to develop a final paper on a topic related to specific aspects of the profession, research, and the creation of new knowledge within public health management. Students will also develop effective oral presentations of these topics.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHMS 753. Seminar III in Public Health Management 1 Unit
Term Typically Offered: Spring Even Years

Prerequisite(s): Enrollment in the School of Public Health and Information Sciences PhD in Public Health Sciences program with specialization in Health Management and Policy.

Description: Doctoral students engage with faculty to discuss and review significant literature related to major influential factors impacting the context of doctoral careers in public health management and to develop a final paper on a topic related to specific aspects of the profession, research, and the creation of new knowledge within public health management. Students will also develop effective oral presentations of these topics.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHMS 755. Independent Study in Health Management and System Sciences 1-3 Units

Prerequisite(s): Graduate standing in the School of Public Health and Information Sciences.

Description: Course allows students to pursue advanced study with faculty guidance on a topic related to health management and system sciences.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHMS 777. Dissertation Research in Health Management and Systems Sciences 3 Units

Term Typically Offered: Occasionally Offered

Prerequisite(s): Enrollment in The School of Public Health and Information Sciences PhD in Public Health Sciences program with a specialization in Health Management and Policy.

Description: This course is designed as a capstone for PhD students in the Public Health Sciences program with a specialization in Health Management and will touch on a broad range of core areas that comprise the Health Management PhD curriculum. The course, as well as being used for preparation for the qualifying exam, will focus on introducing students to dissertation research planning.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Public Health - Public Health (PHPH)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

PHPH 523. Public Health in the United States **3 Units**

Grading Basis: Pass/Fail

Term Typically Offered: Fall Only

Prerequisite(s): Admission to a graduate program in the School of Public Health and Information Sciences, other than the MPH.

Description: This course is designed to introduce new students in academic public health programs (MS and PhD) to the field of Public Health in the United States. It provides a broad overview of the field of public health, a focused look at the core areas of epidemiology and biostatistics, health promotion, environmental health, and health care administration.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPH 550. Special Topics in Public Health Sciences **1-3 Units**

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): Enrollment in the School of Public Health and Information Sciences.

Description: In-depth exploration of public health sciences topics to advance students' knowledge in aspects of field not covered at same depth in existing courses.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPH 551. Public Health Study Abroad **1-6 Units**

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): Instructor permission.

Description: Students who are interested in a global learning experience may engage in independent coursework related to their travel. Students pursue a topic of special interest that is not covered in regular course offerings under the mentorship of a faculty member. Should be listed twice in the catalog, one for undergrad credit and one for grad credit.

Note: We are offering this course both to undergrads for undergrad credit and to graduate students for graduate credit.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPH 601. Evaluating Health Care Literature **1 Unit**

Prerequisite(s): Enrolled in the MS in Biostatistics program or the MSc or Certificate in Clinical Investigation Sciences program.

Description: A review of formal methods for evaluating the medical literature including those of the University of Rochester Clinical Pharmacology Group; and the Evidence Based-Medicine Group. Meta-Analysis: sources of information, using medical informatics, selection of trails, pooling of data, analyzing pooled data and interpreting results, problems and limitations of meta analysis will be covered.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPH 610. New Drug & Device Development **2 Units**

Prerequisite(s): Enrolled in the MS in Biostatistics program or the MSc or Certificate in Clinical Investigation Sciences program.

Description: This course introduces the rationale for, practical aspects of, and new issues in drug and device development as well as the relevant industry and government policies and regulations.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPH 630. Geographic Information Systems in Public Health **3 Units**

Prerequisite(s): Enrollment in the School of Public Health and Information Sciences.

Description: This course provides public health students with "hands-on" GIS experience, using Environmental Systems Research Institute's (ESRI's) ArcGIS software and other software packages. Topics covered include an introduction to geographic information systems, management and use of health, census and spatial data, mapping health information, spatial clustering of health events, analysis of environmental hazards, risk and spread of infectious and vector-borne diseases, and location of health services and access to care.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPH 631. Clinical Research Management **2 Units**

Term Typically Offered: Fall Odd Years

Prerequisite(s): Introductory Biostatistical Methods (PHST-500 or equivalent).

Description: May be taken concurrently with PHST-500 with permission of instructor. This course covers the practical and regulatory aspects of managing clinical trials. Focus will be placed on analysis of resources, implementation, and project management. Practical tools for analysis and management as well as focus on current trends in the industry will be key components of the course. Topics include human resources, project management, budget development and management, databases, case report forms, data acquisition, quality assurance and quality control, monitoring and auditing, regulations, good clinical practice (GCP), and the Health Insurance Portability and Accountability Act (HIPAA), and working with industry sponsors.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPH 632. Ethical Conduct of Health Care Research **2 Units**

Prerequisite(s): Enrolled in the MS in Biostatistics program or the MSc or Certificate in Clinical Investigation Sciences program.

Description: This course focuses on key aspects of research ethics, such as codes of ethical conduct, federal regulations, and institutional review boards. Key principles explored include informed consent, privacy, and conflicts of interest. The course also considers special populations, such as cognitively impaired individuals and children; and specialized forms of research, such as genetic research and research utilizing repositories of stored tissue.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPH 675. Independent Study in Clinical Research 1-3 Units

Prerequisite(s): Enrolled in the MSc or Certificate in Clinical Investigation Sciences program.

Description: Course allows students to pursue advanced study with faculty guidance on a topic related to clinical research.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPH 677. Public Health Practice Experience 1 1 Unit

Grading Basis: Pass/Fail

Term Typically Offered: Spring Only

Prerequisite(s): Enrolled in the MPH program in the School of Public Health and Information Sciences.

Description: The Public Health Practice Experience (PHPE) is designed to bridge the gap between academia and public health practice by providing field experience at a public health-related worksite. Each MPH student identifies a practice site, develops a learning agreement in consultation with the practice site mentor and faculty mentor, works at the site to apply specific public health foundational and concentration competencies, gains experience within the organization, and prepares written and oral reports describing the practice experience.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPH 678. Public Health Practice Experience 2 1 Unit

Grading Basis: Pass/Fail

Term Typically Offered: Fall Only

Prerequisite(s): Enrolled in the MPH program in the School of Public Health and Information Sciences and completion of or concurrent enrollment in PHPH 677.

Description: The Public Health Practice Experience (PHPE) is designed to bridge the gap between academia and public health practice by providing field experience at a public health-related worksite. Each MPH student identifies a practice site, develops a learning agreement in consultation with the practice site mentor and faculty mentor, works at the site to apply specific public health foundational and concentration competencies, gains experience within the organization, and prepares written and oral reports describing the practice experience.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPH 679. Public Health Practicum Experience 3 2 Units

Term Typically Offered: Spring Only

Prerequisite(s): Enrolled in the MPH in the School of Public Health and Information Sciences and completion of or concurrent enrollment in PHPH 678.

Description: The practicum experience is designed to bridge the gap between academia and public health practice by providing field experience at a public health worksite. Each MPH student identifies a practice site, develops a learning agreement in consultation with the practice site mentor and faculty mentor, works at the site to address the components of the learning agreement and to gain experience within the organization, prepares a written characterization of the practice site, and prepares written and oral reports describing the practicum experience.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPH 696. Issues in Public Health 2 Units

Prerequisite(s): Enrolled in the School of Public Health and Information Sciences.

Description: This course provides students with several broad topical concepts encountered within the field of public health. It serves as an introductory course, providing a framework upon which to build all other subsequent core courses. It also serves as a venue to introduce students to the five core areas of public health (epidemiology, biostatistics, health management and policy, health knowledge, and environmental health) through various presentations and activities.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPH 698. Public Health Integrative Learning Experience 2 Units

Term Typically Offered: Spring Only

Prerequisite(s): Enrollment in MPH.

Description: The Integrative Learning Experience (ILE) is designed to identify specific MPH foundational and concentration competencies that address a student's educational and professional goals and requires the student to complete a culminating experience that demonstrates the synthesis of the identified competencies through specific learning experiences.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPH 699. Mentored Research 1-3 Units

Prerequisite(s): Enrolled in the MSc or Certificate in Clinical Investigation Sciences program.

Description: Independent research in order to complete the professional paper requirement for the Master of Science in Clinical Investigation Sciences program.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

PHPH 701. Directed Reading for Qualifying Examinations 1-9 Units**Grading Basis:** Pass/Fail**Prerequisite(s):** Graduate student in the School of Public Health and Information Sciences who has completed required coursework in a doctoral degree program and is preparing for comprehensive examinations.**Description:** The course allows doctoral students to prepare for qualifying examinations with faculty guidance on topics and readings. This course may be repeated.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Social Work (DSW)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).**DSW 700. Social Service Leadership and Teaching & Learning: History, Philosophy & Current Practices 3 Units****Term Typically Offered:** Fall Only**Prerequisite(s):** Course restricted to students admitted into the DSW program.**Description:** This course introduces students to the study of social service leadership and teaching and learning by examining their associated philosophical and social work roots. Topics covered include philosophical and historical influences on current social service systems and social work education specific to policies and practices, structures, and processes. Current practices are examined in light of historical and philosophical influences.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**DSW 702. Implementation Science, Program Development, & Administration 3 Units****Term Typically Offered:** Spring Only**Description:** This course aims to enhance students' understanding of implementation science and its application to program development and execution of innovations. Course topics include theoretical routes of implementation science and organizational change and development, major implementation science models and frameworks, common factors in the implementation process, assessment of organizational readiness and attitudes towards evidence based practices, methods and strategies that facilitate the use of evidence-based practice and research in practice and policy making, identifying and addressing the barriers that impede adoption of interventions and evidence based practices, and identifying key measures to evaluate successful implementation of evidence-based practices.**Note:** Course restricted to students admitted into the DSW program.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**DSW 705. Program Evaluation 3 Units****Term Typically Offered:** Summer Only**Prerequisite(s):** This course is restricted to students admitted into the DSW program.**Description:** This course will provide students with the knowledge and skills for conducting program evaluation and assessment in academic and social service settings. Students will be introduced to program evaluation concepts and methods, skills for designing, implementing and interpreting program evaluations, and using evaluation findings for initiating improvements and changing programs and practices in academic and social service settings.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**DSW 708. Social Work Teaching & Learning: Theories, Methods & Assessment 4 Units****Term Typically Offered:** Spring Only**Description:** This course explores theories and methods of teaching and adult learning in the classroom and online, course and curriculum development within the context of accreditation policies and guidelines, and student assessments and course evaluations. Students critically analyze theories and their applicability to the classroom, learners, and their fit with their developed teaching philosophy and preferred teaching methods. Students complete a teach practicum as a required component of this course.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

DSW 709. Teaching in Social Work: Course Design, Instruction & Evaluation 3 Units**Term Typically Offered:** Spring Only

Description: Students apply theories and methods of teaching in the classroom and online, develop lesson plans, demonstrate use of best practices in instructional techniques and strategies, integration of technology into lesson plans, and classroom management. Students assess their own teaching and are also assessed on their teaching ability and provided feedback to enhance their teaching and instruction. Students complete a teach practicum as a required component of this course.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

DSW 710. Policy Analysis & Advocacy: Contemporary Issues 3 Units**Term Typically Offered:** Summer Only**Prerequisite(s):** Students must be admitted to the DSW Program.

Description: Critical analysis of contemporary policies and practices in social service leadership and teaching & learning are undertaken from an equity, fairness, and justice perspective. Students critique policies and develop advocacy plans and strategies for correcting inequities and promoting and sustaining fair and just practices in academic and social service settings. Final Exams may be scheduled for and limited to the assigned time in any course type. This course does not follow regular semester dates. This section is restricted to students admitted to the DSW program in Social Work.

Note: This class will be offered online with 100% digital instruction asynchronously and up to two synchronous sessions.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

DSW 712. Capstone Project I 1 Unit**Grading Basis:** Pass/Fail**Term Typically Offered:** Fall, Spring**Prerequisite(s):** Students must be admitted to the DSW Program.

Description: Prerequisites or corequisites: Students must successfully complete all prior coursework. Students will complete a capstone project under the supervision of a DSW Chairperson and capstone committee and disseminate findings to the appropriate broader academic and/or social service community. The Capstone will demonstrate that the student was able to integrate advanced social work knowledge, conduct scholarly literature to support their project, develop a methodology that is appropriate to the research question, analyze and interpret the data, and present how the findings can be used to advance practice or promote change. Students focus on writing the Introduction, Literature Review, and Methodology sections of the capstone manuscript and implementing the capstone project in this course. Final Exams may be scheduled for and limited to the assigned time in any course type. This course does not follow regular semester dates. This section is restricted to students admitted to the DSW program in Social Work.

Note: This class will be offered online with 100% digital instruction asynchronously and up to two synchronous sessions.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

DSW 713. Capstone Project II 1 Unit**Grading Basis:** Pass/Fail**Term Typically Offered:** Fall, Spring**Prerequisite(s):** Students must be admitted to the DSW Program.**Corequisite(s):** Students must successfully complete SW 712.

Description: Prerequisites or corequisites: Students must successfully complete all prior coursework. Students will complete a capstone project under the supervision of a faculty member/mentor and committee, and students will disseminate findings to the appropriate broader academic and/or social service community. The Capstone will demonstrate that the student was able to integrate advanced social work knowledge, conduct scholarly literature to support their project, develop a methodology that is appropriate to the research question, analyze and interpret the data, and present how the findings can be used to advance practice or promote change. Students focus in writing the Results, Discussion, and Conclusion section and disseminating the findings of the project through oral presentation and submitting a manuscript to a scholarly journal. Final Exams may be scheduled for and limited to the assigned time in any course type. This course does not follow regular semester dates. This section is restricted to students admitted to the DSW program in Social Work.

Note: This class will be offered online with 100% digital instruction asynchronously and synchronous sessions.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Social Work (MCFT)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

MCFT 700. Foundations of Couple and Family Therapy: Theory and Practice 3 Units**Term Typically Offered:** Fall Only**Prerequisite(s):** Admission to the Couple and Family Therapy Program.**Description:** This course covers foundational elements of family therapy theory & practice. By the conclusion of the course, students are expected to demonstrate a conceptual competence in basic family therapy theory, as well as knowledge around the history and evolution of the family therapy field.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**MCFT 701. Family Therapy Assessment and Treatment in Diverse Populations** 3 Units**Term Typically Offered:** Fall Only**Prerequisite(s):** Restricted to students enrolled through Kent School of Social Work.**Description:** This course will focus on more in-depth assessments and interventions regarding specific problem populations faced in marital and family therapy practice. Emphasis will be given to a critical review and evaluation of the evidence based practices as well as interventions or strategies that represent integrative approaches in the field. Special attention will be given to the use of the DSM-IV and pharmacology as it is related to MFT practice.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**MCFT 702. Couple Therapy: Theory and Practice** 3 Units**Term Typically Offered:** Fall Only**Description:** This course provides the student with a framework for managing difficult and controversial issues in the field of couple therapy. The student will become versed in couple assessment and couple interventions. Protocols regarding special issues in the field of couple therapy will be taught including divorce, sexual problems, infidelity, domestic violence, etc. The course will examine pertinent ethical issues and concerns as it relates to the field of couple therapy.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**MCFT 703. Contemporary Issues, Community Intersections & Collaborations in CFT** 3 Units**Term Typically Offered:** Spring Only**Prerequisite(s):** Admission to the CFT Program and SW 700.**Description:** This course will review social problems and contemporary issues facing families. Particular emphasis will be placed on social problems such as domestic violence, divorce, child maltreatment, substance abuse, school bullying and health concerns. Contemporary issues such as technology, same-sex marriage, and Immigration will also be addressed. Student development of competencies to practice within defined contexts, such as healthcare settings, schools and military settings, and with colleagues from other disciplines will be facilitated. The tools for learning will include lecture, discussion, role-playing, case reviews and teamwork on projects designed to develop and enhance specific skills.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**MCFT 704. Integrating Family Therapy: Theory and Practice** 3 Units**Term Typically Offered:** Spring Only**Prerequisite(s):** Admission to the CFT Program.**Description:** This is the capstone course in the MSCFT Program designed for each student to refine their own theory of change. Utilizing critical thinking skills, students will work to integrate MFT intervention models and skill sets in the areas of assessment, treatment /intervention planning, and outcome evaluation. Students will be assisted in integrating the clinical theory, practice, and research coursework with their study of change in larger social systems. This course also provides an opportunity for individual students to tailor and deepen their learning about areas of personal clinical interest previously covered in the curriculum.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**MCFT 705. Professional Issues & Ethics in Couple & Family Therapy** 3 Units**Term Typically Offered:** Spring Only**Prerequisite(s):** Admission to the CFT Program and SW 702.**Description:** This is a capstone seminar in professional issues taken in the last semester of the MSSW/MFT Specialization Program. This course reviews and integrates the graduating student's learning experiences in SW 721-725 and SW 703 in the area of professional issues and ethics. The course is designed to assist the graduating student in their professional development, legal responsibilities, current professional ethics, the role of professional associations, licensure legislation, independent practice considerations, and inter-professional cooperation. The students using variable credit option must have permission of instructor and a course of proposed study outlined prior to registrations. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**MCFT 706. Foundations of Couple and Family Therapy: Theory and Practice II** 3 Units**Term Typically Offered:** Fall, Spring, Summer**Prerequisite(s):** SW 700.**Description:** This course covers family theory and practice, including the development of the relational/systemic perspective, early and contemporary models of M/CFT, evidence-based practice, and the biopsychosocial perspective. By the conclusion of the course, students are expected to demonstrate conceptual competence in family therapy theory and epistemological issues, as well as knowledge of the history and evolution of the family therapy field.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MCFT 707. Human and Family Development Across the Lifespan 3 Units

Term Typically Offered: Spring Only

Prerequisite(s): MCFT 700 and MSSW 601 This course surveys human development across the individual's lifespan, from birth to death, emphasizing the clinical relevance for family therapists.

Description: This course provides in-depth exposure to biopsychosocial and lifespan models for assessing and treating individual and relational adjustment challenges from a systemic perspective. Theory and clinical applications specific to the biopsychosocial perspective, human and family development, and health will be reviewed. Child, adolescent, and elderly assessment methods consistent with a systems orientation will be presented, followed by an overview of family-based and multi-disciplinary approaches for clinical intervention grounded in a developmentally sensitive biopsychosocial perspective.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MCFT 708. Independent Study 1-4 Units

Prerequisite(s): Admission to CFT Program, consent of Program director, and permission of the instructor.

Description: The student will be required to submit a proposal for investigating some area or problem in social work not ordinarily offered in the social work program or the marital and family therapy program. The report of the student's study will be presented in a written report.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MCFT 710. Couple and Family Therapy Practicum I 1 Unit

Grading Basis: Pass/Fail

Term Typically Offered: Fall Only

Description: Students will conduct assessment and therapy with individuals, couples, families, and other systems under the supervision of an AAMFT-Approved Supervisor or AAMFT Supervisor.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MCFT 711. Couple and Family Therapy Practicum II 1 Unit

Grading Basis: Pass/Fail

Term Typically Offered: Spring Only

Prerequisite(s): SW 710.

Description: Students will conduct assessment and therapy with individuals, couples, families, and other systems under the supervision of an AAMFT-Approved Supervisor or AAMFT Supervisor.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MCFT 712. Couple and Family Therapy Practicum III 2 Units

Grading Basis: Pass/Fail

Term Typically Offered: Summer Only

Description: Students will conduct assessment and therapy with individuals, couples, families, and other systems under the supervision of an AAMFT-Approved Supervisor or AAMFT Supervisor Candidate.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MCFT 713. Couple and Family Therapy Practicum IV 1 Unit

Grading Basis: Pass/Fail

Term Typically Offered: Fall Only

Description: Students will conduct assessment and therapy with individuals, couples, families, and other systems under the supervision of an AAMFT-Approved Supervisor or AAMFT Supervisor Candidate.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MCFT 714. Couple and Family Therapy Practicum V 1 Unit

Grading Basis: Pass/Fail

Term Typically Offered: Spring Only

Description: Students will conduct assessment and therapy with individuals, couples, families, and other systems under the supervision of an AAMFT-Approved Supervisor or AAMFT Supervisor Candidate.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MCFT 721. Family Therapy Supervision I 3 Units

Grading Basis: Pass/Fail

Prerequisite(s): Admission to CFT program.

Corequisite(s): MSSW 610.

Description: Supervision of student work with a variety of families and family problems in community agency settings.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MCFT 722. Family Therapy Supervision II **3 Units**
Grading Basis: Pass/Fail
Term Typically Offered: Spring Only
Prerequisite(s): MCFT 721.
Corequisite(s): MSSW 611.
Description: Supervision of student work with a variety of families and family problems in community agency settings.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MCFT 723. Family Therapy Supervision III **3 Units**
Grading Basis: Pass/Fail
Term Typically Offered: Summer Only
Prerequisite(s): MCFT 722.
Description: Supervision of student work with a variety of families and family problems in community agency settings. Significant field experience conducting therapy and assessment with individuals, couples, families, and other systems is a requirement of this course.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MCFT 724. Family Therapy Supervision IV **3 Units**
Grading Basis: Pass/Fail
Prerequisite(s): MCFT 723.
Corequisite(s): MSSW 612.
Description: Supervision of student work with a variety of families and family problems in community agency settings.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MCFT 725. Family Therapy Supervision V **3 Units**
Grading Basis: Pass/Fail
Term Typically Offered: Spring Only
Prerequisite(s): MCFT 724.
Corequisite(s): MSSW 613.
Description: Supervision of student work with a variety of families and family problems in community agency settings.
Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MCFT 726. Post-Master's Paracticum/Supervision **0 Units**
Prerequisite(s): Completion of all program course requirements.
Description: Supervision of student work with a variety of families and family problems in a community agency setting.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Social Work (MSSW)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

MSSW 600. Topical Seminar **3 Units**
Description: Topical Seminar in Social Work.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 601. Human Behavior in the Social Environment I **3 Units**
Prerequisite(s): Restricted to students enrolled through Kent School of Social Work.
Description: The course provides content on theoretical perspectives of biopsychosocial development and the application of theoretical perspectives to individuals, families, groups, communities, and organizations. The focus is on person in environment.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 602. Social Welfare Policy I **3 Units**
Prerequisite(s): Restricted to students enrolled through Kent School of Social Work.
Fee: An additional \$75.00 is charged for this course.
Description: This class focuses on the historical context and evolution of social welfare policy, and how dominant values and contextual factors shape policy in a broad range of social welfare arenas.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 603. Diversity, Oppression, and Social Justice Practice 3 Units

Description: This generalist course is designed to provide students with the knowledge and skills for social work practice with people who are subject to various forms of oppression such as racism, sexism, heterosexism, classism, ageism, and ableism operating at the individual, community, and institutional levels of society. Diversity, strengths, and social justice practice are emphasized. Developing greater professional and personal awareness about the impacts of various forms of oppression is addressed.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 604. Micro Social Work Practice 3 Units

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): SW 670 (or concurrent); restricted to students admitted to Kent School of Social Work.

Description: The focus of this class is on the development of the knowledge and skills necessary for generalist social work practice with individuals, families and small groups. This class is designed to provide students with an understanding of the social work profession's mission, values, ethics and roles.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 605. Macro Social Work Practice 3 Units

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): SW 604; SW 671 (or concurrent); restricted to students admitted to the Kent School of Social Work.

Description: The focus of this class is on the development of the knowledge and skills necessary for generalist social work practice with larger groups, organizations and communities.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 610. Foundation Couple and Family Therapy Practicum I 3 Units

Grading Basis: Pass/Fail

Description: Students will conduct assessment and therapy with individuals, couples, and families under the supervision of a state-or AAMFT- approved supervisor. This course will allow students to apply assessment and treatment skills learned in SW 700, SW 701, and SW 702.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 611. Generalist Couple and Family Therapy Practicum II 3 Units

Grading Basis: Pass/Fail

Term Typically Offered: Spring Only

Prerequisite(s): MSSW 610.

Corequisite(s): MCFT 722 and MSSW 605.

Description: Students will conduct assessment and interventions with individuals, couples, and families under the supervision of a state-or AAMFT-approved supervisor, as well as a MSSW approved supervisor. This course will allow students to apply assessment and treatment skills learned in MCFT and MSSW courses at the generalist level.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 612. Advanced Couple and Family Therapy Practicum I 3 Units

Grading Basis: Pass/Fail

Prerequisite(s): SW 611.

Description: Students will conduct assessment and therapy with individuals, couples, and families under the supervision of a state-or AAMFT-approved supervisor. This course will allow students to apply assessment and treatment skills learned in SW 700, SW 701, and SW 702.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 613. Specialized Couple and Family Therapy Practicum II 3 Units

Grading Basis: Pass/Fail

Prerequisite(s): SW 612.

Description: Students will conduct assessment and therapy with individuals, couples, and families under the supervision of a state-or AAMFT-approved supervisor. This course will allow students to apply assessment and treatment skills learned in SW 700, SW 701, and SW 702. **Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 615. Mental Health 3 Units

Description: Focus on theory, critical issues and problems in mental health.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 618. Social Work and Incarceration 3 Units

Term Typically Offered: Fall, Spring, Summer

Description: The overarching aim of this course is to enhance student knowledge and skills related to strengths-based, macro-level social work practice and advocacy in adult incarceration. By the end of the course, students will have knowledge and skills critical to identifying, describing, appraising, and advocating for policy and practice revision regarding adult incarceration.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 619. Human Behavior in the Social Environment II 3 Units

Prerequisite(s): SW 601; restricted to students admitted to the Kent School of Social Work.

Description: The course provides content on theoretical perspectives of biopsychosocial human development and the application of theoretical perspectives to individuals, dyads, and families. The focus is on human development across the lifespan.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 620. Forensic Interviewing and Assessment 3 Units

Term Typically Offered: Fall, Spring, Summer

Description: This 3-credit course covers key components of child forensic interviewing and assessment including pre-interview planning, forensic interviewing typology, and potential challenges and clinical considerations in the forensic interview. The course is designed for graduate students majoring in social work, criminal justice, education, sociology, psychology, counseling, nursing, and other areas where knowledge of child maltreatment investigation and advocacy are necessary.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 621. Special Populations in the Criminal Justice System 3 Units

Term Typically Offered: Fall, Spring, Summer

Description: The overarching aim of this course is to enhance student knowledge, understanding and skills related to strengths-based, mezzo- and-micro-level social work practice with special populations in the criminal justice system. By the end of this course students will develop the knowledge, understanding, and skills to identify the risks and needs associated with these populations at multiple systemic levels and evidence-based assessment and interventions strategies.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 622. Social Welfare Policy II 3 Units

Prerequisite(s): SW 602; restricted to students enrolled in the Kent School of Social Work.

Description: This class focuses on the interrelationships between problem conceptualization, policy options, and their impact on social work practice and clients. Students will develop their ability to critically assess current service delivery problems as they impact client needs, with particular attention to vulnerable population groups.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 623. Forensic Social Work Integrative Seminar I 1 Unit

Grading Basis: Pass/Fail

Term Typically Offered: Fall Only

Description: Supervision of student social work practice with a variety of individuals, groups, communities, and society as related to legal issues and litigation in both civil and criminal justice systems. (Grading will be on a Pass/Fail basis).

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 624. Forensic Social Work Integrative Seminar II 1 Unit

Grading Basis: Pass/Fail

Term Typically Offered: Spring Only

Description: Continuation of supervision of student social work practice with a variety of individuals, groups, communities, and society as related to legal issues and litigation in both civil and criminal justice systems. (Grading will be on a Pass/Fail basis).

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 625. Children and Families 3 Units

Description: Focuses on practice with children and families within an ecological framework. The complexity of practice with children and families within various human service delivery systems is examined.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 626. Research Methodology and Design 3 Units

Prerequisite(s): Restricted to students enrolled through the Kent School of Social Work.

Description: This course provides students the generalist knowledge for scientific inquiry. It covers all aspects of the research process from problem formulation to writing of the research report. It introduces students to qualitative, quantitative, and single-subject methods of conducting research and evaluating practice.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 627. Military Social Work 3 Units

Description: This course is designed to develop competence in providing services to active duty, reserve, National Guard, veterans, and their families. It focuses on a wide range of challenges, strengths, and interventions that social workers need to learn and utilize in practice when working with this population. It is recognized that returning veterans from the Global War on Terrorism and their families in addition to the millions of veterans from previous military service likely will exceed the capacity of the Department of Defense and the Department of Veteran Affairs, consequently, many of these service members will be seeking assistance from social workers in the civilian sector.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 628. Military Social Work Seminar I 1 Unit

Grading Basis: Pass/Fail

Prerequisite(s): Enrollment in the Military Social Work specialization.

Description: Military social work is a specialization of social work that provides services to persons who have served or are serving in the military and their families. MSSW students who are specializing in military social work are required to take this one credit hour seminar per semester that extends over two semesters of their final year at Kent School of Social Work. It provides students with an opportunity to integrate the theoretical knowledge that they are learning in the classroom with practical experiences in their field placements. In the seminar students from different practice settings will participate and share the diversity of problems and approaches to the practice of military social work.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 629. Military Social Work Seminar II 1 Unit

Grading Basis: Pass/Fail

Prerequisite(s): Enrollment in the Military Social Work specialization.

Description: Military social work is a specialization of social work that provides services to persons who have served or are serving in the military and their families. MSSW students who are specializing in military social work are required to take one credit hour seminar per semester that extends over two semesters of their final year at the Kent School of Social Work. It provides students with an opportunity to integrate the theoretical knowledge that they are learning in the classroom with practical experiences in their field placements. In the seminar students from different practice settings will participate and share the diversity of problems and approaches to the practice of military social work.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 630. School Social Work: Policy and Practice 3 Units

Description: Designed to prepare students for social work practice in the public schools. It assumes that you have a foundation of knowledge in social work policy, practice, research, and human behavior in the social environment. It also assumes that you had some field practice or work experience in a human service setting, preferably a school. Examines a range of practices and policy issues related to the delivery of social work services in school settings. Addresses current federal and Kentucky laws as they relate to practice with school age children and their families. School social work professional standards, program development and licensure receive attention as well. An ecological and risk and resiliency framework for practice will be emphasized throughout the course.

Additionally, the practice section is based on best practices and narrative social work. Finally, special attention is given to children living in poverty. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 631. Personality: Concepts and Evidence 3 Units

Prerequisite(s): Satisfactory completion of a course in introductory psychology, or instructor's permission.

Description: A systematic presentation of theories and research evidence relevant to personality; such as psychoanalysis and its derivatives, field, self, reinforcement theories, etc.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 632. Intro Gay, Lesbian, Bisexual and Transgender (GLBT) Issues and Social Welfare 3 Units

Term Typically Offered: Fall, Spring, Summer

Description: The purpose of this course is to introduce contemporary topics related to the social welfare of gay, lesbian, bisexual and transgender (GLBT) individuals. Issues addressed are related to development, health disparities, family, research, history and ethics.

Note: Course is cross-listed with SW 332.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 633. Social Work and Human Sexuality 3 Units

Description: This course provides knowledge about physical, behavioral, cognitive, emotional and spiritual aspects of human sexuality.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 635. Rights of Children 3 Units

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 636. Death & Grief 3 Units

Description: This course provides students with knowledge and skills to prepare master's level social workers for effective, evidence- and theory-informed practice with persons experiencing life-limiting illness or disease, their informal and formal caregivers, and persons coping with loss, broadly. Specific attention is paid to ethical intervention with persons who are dying or experiencing grief. Course content relates to affective responses to death and grief, intersectionality, and the decolonization of death and grief studies.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 637. Seminar-Introduction to Social Work Leadership/Management**1 Unit****Grading Basis:** Pass/Fail**Term Typically Offered:** Fall Only

Description: In this seminar related to their Leadership/Management practicum, based on their practicum experiences, films and articles, students will begin to apply theories, methods and practices for leading a productive organization and effectively managing staff, and conflict. Social work's ideological role in society presents unique ethical challenges. Students will be oriented to the National Association of Social Work (NASW) and other standards and techniques for ethical leadership compliance. Finally, students will assess their potential for exerting successful social work leadership/management throughout their practicum and careers.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 638. Seminar-Introduction to Social Work Leadership/Management**1 Unit****Grading Basis:** Pass/Fail**Term Typically Offered:** Spring Only

Description: In this seminar related to their Leadership/Management practicum, based on their practicum experiences, films and articles, students will begin to apply theories, methods and practices for leading a productive organization and effectively managing staff, and conflict. Social work's ideological role in society presents unique ethical challenges. Students will be oriented to the National Association of Social Work (NASW) and other standards and techniques for ethical leadership compliance. Finally, students will assess their potential for exerting successful social work leadership/management throughout their practicum and careers.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 639. Crisis Intervention**3 Units**

Description: The major constructs and principles of crisis theory are analyzed in light of their pragmatic application with clients in crisis. Students use complex case analysis in their application of theory to practice. Taught from a strengths perspective and using a narrative approach, this class emphasizes a client-centered perspective.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 640. Evidence-Based Practice with Individuals, Families, and Groups**3 Units****Term Typically Offered:** Fall, Spring, Summer**Prerequisite(s):** SW 605 and SW 671 or enrollment into 30 hour program.**Corequisite(s):** SW 672.

Description: The focus of this class is on using specialized problem-solving practice models and critical thinking skills designed to guide everyday decisions social workers make, whether they function as direct service providers or case manager supervisors.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 641. Social Justice Policy**3 Units****Term Typically Offered:** Fall, Spring, Summer**Prerequisite(s):** SW 603, SW 605, and SW 671 or admission to the 30 hour program.

Description: This course focuses on the changing global context of macro practice and the interconnectedness between individual, mezzo, and macro system levels. Students will explore how dominant political ideologies influence the construction of and responses to contemporary social problems. We will discuss how social policies have been critical tools to address inequity while also being mechanisms of stratification. Students will engage with theories of social justice, with an emphasis on initiating community-level changes. This course gives students conceptual perspectives on community organizing and structural social work; through these perspectives, students will develop a repertoire of strategies to make substantive societal changes.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 642. Psychopathology**3 Units****Term Typically Offered:** Fall, Spring, Summer**Prerequisite(s):** SW 605 and SW 671, or SW 701, or admission to the 30hr program.

Description: This course examines concepts of labeling theory, stigma, strengths perspective, and the clinical use of diagnostic classification of psychopathology from a social work perspective. The implications of various definitions of psychopathology and the uses of diagnostic systems to inform practice policy and to promote social justice are considered.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 643. Introduction to Social Work Leadership/Management**3 Units****Term Typically Offered:** Fall, Spring, Summer

Description: What does it mean to be a social work leader? In this course, social work students will be oriented to the theories, styles, traits and factors which build successful social work leaders and managers. Whether working in a small or large non-profit, public or private system or in the for-profit world, select knowledge, skills and abilities are essential to meeting the needs of vulnerable populations effectively. coursework will include assessing your leadership/management style and potential, exploring real world case studies and experiencing leadership/management simulations. The course will stress the importance of leading for diversity and inclusion in promoting social justice in organizations, community and society.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- MSSW 644. Supervision: Developing Skills for Your Future** 3 Units
Term Typically Offered: Fall, Spring, Summer
Description: This supervision course provides students with instruction, practice experiences and skills development related to effective supervision in various social service contexts. The course focuses on several models of supervision that are grounded in systems theory, developmental theory, organizational theory, leadership theories, adaptive change theory, and social justice theory. Supervision as related to leadership and the organizational contexts will be explored. There will be a focus on practical skills related to supervision of staff and of volunteers. These skills will include administrative, clinical, supportive, developmental, and educational supervision, as well as performance evaluation.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MSSW 647. Psychosocial Practice in Oncology I Social Work Practice with Individuals and Families in Healthcare** 3 Units
Description: As students grow into advanced practice social workers, this course focuses on the knowledge and skills needed to work with people with cancer and family members, with special attention on inter-professional teamwork. Students will learn theories and models that help understand how cancer disrupts people's lives and guide evidence-based interventions. This course is open to students who want to work with people with other chronic and life-limiting diseases.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MSSW 648. Psychosocial Practice in Oncology II: Social Work Practice to Promote Health Equity** 3 Units
Description: This course focuses on social determinants of health to understand health equity and inequity at the individual, group, community, and socio-political levels. Students will learn the role social workers and healthcare systems have in perpetuating health disparities. The knowledge and skills needed to minimize health disparities at the micro, mezzo, and macro levels are covered. This course is open to students who want to work with people with other chronic and life-limiting diseases.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MSSW 649. Psychosocial Oncology Seminar I** 1 Unit
Description: Students will participate in an innovative interdisciplinary curriculum in palliative care (iCope) The seminar will assist with planning future goals for their career development upon graduation.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MSSW 650. Psychosocial Oncology Seminar II** 1 Unit
Grading Basis: Pass/Fail
Description: Students will participate in an innovative interdisciplinary curriculum in palliative care (iCope) . The seminar will assist with planning future goals for their career development.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MSSW 651. Foundations of Family Therapy** 3 Units
Prerequisite(s): Restricted to students enrolled through Kent School of Social Work.
Description: This course is designed to give students a comprehensive and substantive understanding of the family life cycle, family dynamics, systemic thinking, and interactional theories. Students will also be introduced to the role of the marital and family therapist in Terms of relationship to clients, as a relational approach to understanding clients, and the self of the therapist.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MSSW 652. Introduction to Child Welfare Practice** 3 Units
Description: This course focuses on skills of screening, investigation, assessment, case planning, and service delivery within the child welfare system.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MSSW 653. Services to Children** 3 Units
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MSSW 654. Exceptional Child** 3 Units
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MSSW 655. Family Violence** 3 Units
Description: The focus of this course is on understanding, screening for, assessing, and intervening in various forms of family violence.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MSSW 656. Assessment & Case Management of Child Sexual Abuse** 3 Units
Description: This course is designed to prepare students to screen, assess, and intervene in situation involving child sexual abuse.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MSSW 657. Group Methods** 3 Units
Description: All major aspects of group life are explored and there is an emphasis on the purposes, content, and forms of various group experiences. The social worker's role in facilitating the group process is detailed and there is a special emphasis placed on the beginning processes associated with group methods.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MSSW 658. Group Psychotherapy** 3 Units
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- MSSW 659. Introduction to Family Therapy Practice** 3 Units
Prerequisite(s): Restricted to students enrolled through the Kent School of Social Work.
Description: This course is designed to familiarize the social work student with a family systems framework and a broad range of established family systems that have shaped the practice of couple and family therapy. Theory and technique will be reviewed to assist the development of process skills necessary for addressing the multiple dynamics associated with counseling individuals, couples and families through the lens of marriage and family therapy.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MSSW 660. Motivation and Change: The Process of Change and Strategies to Elicit Intrinsic Motivation.** 3 Units
Prerequisite(s): Admitted to Kent School of Social Work.
Description: Understanding the process of behavior change and developing interviewing skills that elicit intrinsic motivation to change. Class content is in the form of books and guides on Motivational Interviewing, a popular proven practice method.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MSSW 661. Special Issues in Alcohol and Drug Counseling** 3 Units
Description: This course includes highly specialized and advanced topics in addiction treatment to prepare students to begin practice in Alcohol and Drug Counselor training. Content will round out and complete a basic course of study for alcohol and drug counselors that was not adequately addressed in substance abuse and motivational interviewing classes. These advanced topics will 1) generally aid students in submitting the application for certification as alcohol and drug counselors, 2) provide students with required case management training for working in a licensed alcohol and other drug treatment facility, and 3) prepare students for working within multidisciplinary teams and gain familiarity with clinical supervision methods utilized in substance abuse treatment programs. 4) Students will become familiar with the use of the Addiction Severity Index (ASI) a very common assessment tool widely used in substance abuse treatment settings.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MSSW 662. Substance Use and Substance Use Disorders** 3 Units
Prerequisite(s): Restricted to Kent School of Social Work students.
Description: Examines current issues associated with substance abuse. Prevailing paradigms related to substance abuse are explored and pragmatic intervention strategies for dealing with those abusing substances are presented and applied.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MSSW 663. Enhancing Safety & Permanency of Children in the Child Welfare System** 3 Units
Description: This course focuses on practice knowledge and skills in the delivery of services to children and youth in foster and out of home care and families that care for them.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MSSW 664. Social Work and the Law** 3 Units
Prerequisite(s): Restricted to students enrolled through the Kent School of Social Work.
Description: This course is designed to: 1) familiarize social work students with the legal system and the various roles of social workers within the legal arena, 2) increase the social work students' understanding of the impact of the legal system on social work clients and client groups, 3) increase the social work students' understanding of the interface of law with professional social work practice, and 4) develop and enhance the skills needed by the professional social worker in situations where social work and law interface.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MSSW 665. Supervision, Training, and Consultation** 3 Units
Description: This course focuses on concepts of learning, competence, motivation and growth. How each of these is applied in supervision, training, consultation in both one to one and group settings is emphasized.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MSSW 666. Collaborative Practice with Substance Abuse & Mental Health Services** 3 Units
Description: This course focuses on preparing students to practice collaboratively with substance abuse, mental health, and child welfare services to screen, assess, manage, and refer families to MH and SA services.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MSSW 667. Negotiation, Mediation, and Conflict Transformation** 3 Units
Description: This course integrates communication and negotiation theory and skills with the values and strategies of social work. Through reflective practice, the course will increase learners' skills in creating a space for people in conflict to communicate more effectively with one another. Students will practice negotiating for agreements and resources, mediating disagreements, and advocating on behalf of disenfranchised and vulnerable persons.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MSSW 668. Program Evaluation in Social Work** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): SW 626, SW 605, and SW 671, or admission into the 30-hour program.
Description: This specialized research course is focused on program evaluation that is aimed at helping students integrate research and practice skills, and prepares students to evaluate services and programs using research methods and research evidence to inform and improve practice, policy, and service delivery.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 669. Advanced Research Practice II 3 Units

Prerequisite(s): SW 668; access to a social services agency where projects from this class can be implemented (via practicum, work, or other access to an agency); and restricted to students enrolled through the Kent School of Social Work.

Description: This course prepares students to disseminate best practices information to micro and macro practice settings, and evaluate the impact of their dissemination efforts via use of quantitative and qualitative methods and analysis.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 670. Generalist Social Work Practicum I 3 Units

Grading Basis: Pass/Fail

Prerequisite(s): Restricted to students enrolled through the Kent School of Social Work & Family Science.

Corequisite(s): MSSW 604 or MCFT 701.

Fee: An additional \$43.00 is charged for this course.

Description: This course, along with MSSW 671, comprise the generalist fieldwork experience. This class is taken concurrently with SW604 Micro Social Work Practice in order to enhance the integration of the theoretical and conceptual contributions of coursework with the field experience.

This course includes a two-week self-paced, online orientation to practicum. Students are required to successfully complete the two-week course the first two weeks of the semester, before reporting to practicum sites. Orientation activities are directly connected to practicum and require contact with field instructors via email and phone prior to students starting at the practicum site. Orientation topics will include an overview of social work and social work education; the National Association of Social Work Code of Ethics; an overview of reflective practicum trauma-informed practice, and anti-oppressive practice; and preparation for and maximization of the practicum experience.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 671. Generalist Social Work Practicum II 3 Units

Grading Basis: Pass/Fail

Prerequisite(s): Restricted to students enrolled through the Kent School of Social Work & Family Science.

Corequisite(s): MSSW 605.

Fee: An additional \$43.00 is charged for this course.

Description: This course is a generalist fieldwork experience and taken concurrently with Macro Social Work Practice (SW605). The practicum assists the student in developing a social work perspective and opportunity to demonstrate social work behaviors while working with a variety of client systems (individuals, couples, families, groups, organizations and communities). The practicum experience provides for the integration of theoretical and conceptual learning across the generalist courses related to human behavior, social justice, social work practice, policy and research.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 672. Specialized Social Work Practicum I 3 Units

Grading Basis: Pass/Fail

Prerequisite(s): Restricted to students enrolled through the Kent School of Social Work.

Corequisite(s): SW 640.

Fee: An additional \$43.00 is charged for this course.

Description: This course is designed to provide an educationally supervised practicum within a human services organization. The practicum integrates class assignments and assists in the development of a social work perspective and skills in working with a range of client systems: individuals, couples, families, groups, organizations, communities, and the larger society. This experience provides for the application and integration of theories learned throughout the generalist courses including human behavior and the social environment across the lifespan, social justice/diversity, organizational and community dynamics, policy, and research. Students are required to complete a 16-hour self-paced, online orientation before reporting to practicum sites.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 673. Specialized Social Work Practicum II 3 Units

Grading Basis: Pass/Fail

Prerequisite(s): Restricted to students enrolled through the Kent School of Social Work.

Corequisite(s): SW 677.

Fee: An additional \$43.00 is charged for this course.

Description: This course is designed to provide an educationally supervised practicum within a human services organization. The practicum integrates class assignments and assists in the development of a social work perspective and skills in working with a range of client systems: individuals, couples, families, groups, organizations, communities, and the larger society. This experience provides for the application and integration of theories learned throughout the generalist courses including human behavior and the social environment across the lifespan, social justice/diversity, organizational and community dynamics, policy, and research.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 674. Administration of Human Delivery Systems 3 Units

Description: Theoretical and empirical literature on complex organizations are examined to increase effectiveness in identifying and resolving problems.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 675. Child Welfare Supervision, Coaching and Mentoring Practices & Policies to Achieve Best Outcomes 3 Units

Description: This course focuses on understanding and applying principles and skills of supervision, coaching and mentoring in the field of child welfare.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 676. Program Design, Implementation and Change 3 Units

Description: Explores utilization and application of theories and evaluative research in the design, implementation, and change of social programs and interventions.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 677. Mezzo Practice and Integrated Social Work Practice with Complex Cases 3 Units

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): SW 640, SW 641.

Description: The course focuses on theories, knowledge and skills needed in working with organizations in the areas of creating change, conducting agency assessments, networking, leadership, strategic planning, project development and management, team building, meeting management, budgeting and finances, fundraising and grant writing, marketing, and interfacing with the media, with a special emphasis on working with groups and organizations that work on behalf of oppressed populations. The last weeks in the course focus on reinforcing and integrating skills from all three practice courses through case-based study conceptualizing practice issues/interventions on macro, mezzo, and micro levels simultaneously.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 678. Advanced Alcohol and Drug Counseling Specialization Practicum Seminar 1.5 Units

Grading Basis: Pass/Fail

Prerequisite(s): Enrollment in the Alcohol and Drug Counseling Specialization.

Description: This is a required seminar for Advanced Practicum ADCS students designed to achieve two goals: 1) Enhance knowledge of research supported group counseling methods in the treatment of substance abuse (all students); and 2) advance special knowledge and skills related to one of the following: a) criminal justice and treatment of substance abuse (immersion practicum students) or b) leadership (rotational practicum students).

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 679. Advanced Alcohol and Drug Counseling Specialization Practicum Seminar-Spring Semester 1.5 Units

Grading Basis: Pass/Fail

Prerequisite(s): Enrollment in the Alcohol and Drug Counseling Specialization.

Description: This is a required seminar for Advanced Practicum ADCS students designed to achieve two goals: 1) Enhance knowledge of research supported family engagement methods in the treatment of substance abuse (all students); and 2) advance special knowledge and skills related to one of the following: a) criminal justice and treatment of substance abuse (immersion practicum students) or b) leadership (rotational practicum students).

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- MSSW 681. Social Gerontology** **3 Units**
Description: Explores societal, cultural, and individual issues associated with aging and the field of aging itself. The field of social gerontology is discussed; the biological, physiological, psychological, and social contexts of aging are examined; and the students explore what it means to age.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MSSW 682. Social Work Practice with Older Persons** **3 Units**
Description: Specific knowledge, skills and values associated with social work intervention with older persons are the emphasis of this course. There is an emphasis on the heterogeneity of the population of older Americans and issues associated with diversity. Taught from a strengths perspective using a narrative approach, this course will provide the learner with pragmatic skills needed to work with diverse populations of older adults.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MSSW 684. Spirituality and Social Work** **3 Units**
Prerequisite(s): This course is restricted to students in the Kent School of Social Work.
Description: Provides an in-depth examination of the meaning of spirituality for social work practice. Students will broaden their knowledge of basic spiritual and religious doctrines and principles and analyze their application to social work by applying this knowledge within various social work settings.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MSSW 685. Planning and Community Development** **3 Units**
Description: Integrates theories of social science and social work as it develops student skills, knowledge, values in social planning and community development. There is a special emphasis placed on conceptual and practice skills necessary for successful social planning and community development.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MSSW 686. Gerontology Specialization Lab I** **1 Unit**
Grading Basis: Pass/Fail
Corequisite(s): MSSW 672.
Description: Supervision of student work with a variety of gerontology clients and their families community agency settings.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MSSW 687. Gerontology Specialization Lab II** **1 Unit**
Grading Basis: Pass/Fail
Corequisite(s): SW 673.
Description: Supervision of student work with a variety of gerontology clients and their families community agency settings.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MSSW 688. Policy Analysis** **3 Units**
Description: Demographic, political, economic and other influences are considered as they act upon policy development and related social problems.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MSSW 689. Interpreting and Promoting Human Service Programs** **3 Units**
Description: This course familiarizes social workers with the use of media in promoting and interpreting social welfare policies and programs.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MSSW 690. Macro Social Work Practice in the Health Field** **3 Units**
Description: Provides overview of major issues in organization and delivery of health services and the planning, implementation and evaluation of programs.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MSSW 691. Mental Health Specialization Integrative Seminar I** **1 Unit**
Grading Basis: Pass/Fail
Prerequisite(s): Completion of Foundation requirements and acceptance into Mental Health Specialization.
Description: Supervision of student work with a variety of clients and their families with mental health needs in community agency settings.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MSSW 692. Mental Health Specialization Integrative Seminar II** **1 Unit**
Grading Basis: Pass/Fail
Prerequisite(s): Completion of Foundation requirements and acceptance into Mental Health Specialization.
Description: Supervision of student work with a variety of clients and their families with mental health needs in community agency settings.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- MSSW 694. Social Work in Health Fields** **3 Units**
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 695. Cultural Context & Social Services with Latinx Individuals Families & Communities 3 Units**Term Typically Offered:** Fall, Spring

Description: This course surveys a variety of historical & contemporary social justice issues necessary for understanding the culture & well-being of Latinx & Latin American individuals, families, & communities. The legacies of colonization, genocide, & slavery of Indigenous & African populations, will be explored. Particular attention will be paid to the impacts of class, race, & language in contemporary Latinx communities. Transmigration, immigration, refugee status & asylum seeking, & their legal & psychosocial implications, also will be covered. Social justice movements in response to systemic oppression, political unrest, & violence occurring in Latin American & in the United States also will be reviewed. In addition, cultural values that may be particularly salient & meaningful to Latinx peoples as well as techniques identified by grassroots organizations &/or the research literature as culturally-responsive approaches for engaging, assessing, &/or intervening with these populations.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 697. Advanced Topical Seminar 3-4 Units**Prerequisite(s):** Permission of instructor.

Description: This course focuses on the development of positive mental health and health in populations at risk.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

MSSW 699. Independent Study 1-4 Units

Description: Opportunity for the student, under the supervision of a sponsoring faculty member, to pursue individualized study related to research or practice that is not included in regular courses in the curriculum.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Social Work (SW)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

SW 698. Structured Independent Study 1-4 Units**Prerequisite(s):** Permission of the Director, Instructor/Advisor.

Description: Addresses content not covered in existing courses; provides for the development of content otherwise unavailable. Prescribed content is addressed in seminars, conferences and readings.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SW 729. Pro Seminar I: Foundations of Scholarly Writing 1 Unit**Term Typically Offered:** Fall Only

Prerequisite(s): This section is restricted to students admitted to the PhD Program in Social Work.

Description: This is the 1st of 2 Professional Seminar courses, which bookend the PhD coursework. This course is also aligned with SW 761: Advanced Scholarly Writing to Fund and Disseminate Research to Diverse Audiences, which it taken in the fall of your second year. The goals of this course are to improve your understanding of the process and mechanics of writing within academia and provide a foundation for you to become leaders in the social work profession as researchers, academicians, and advocates for social justice. Students will infuse aspects of anti-oppressive and anti-racist practices into their professional development plan and encouraged to frame the introduction of their manuscript from an equity lens.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SW 732. Theory I: Philosophy of Science & the Development and Application of Theory in Social Work Research 3 Units**Term Typically Offered:** Fall Only

Prerequisite(s): Restricted to students admitted to the PhD Program in Social Work.

Description: This course explores the nature of knowledge and how it is generated and acquired. We will be focusing on the nature and role of theory in contemporary social welfare scholarship informed by a central commitment to social justice. This is the first of two theory classes that students will take and builds on the skills you will be introduced to in your methods courses. Doctoral students will be introduced to key constructs in the philosophy of social science and how various theories of knowledge inform our work as social scientists. We will explore the nature and role of theory in contemporary social science scholarship; examine a range of epistemologies through examples of associated research products; and evaluate issues of equity, antiracism, and social justice within these frames. The course provides a platform to understand underlying assumptions of research methods including analysis of "Big Data," randomized controlled trials (RCTs), ethnographies, and a variety of other methods.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SW 733. Foundation Research Methods 3 Units**Term Typically Offered:** Fall Only**Prerequisite(s):** This section is restricted to students admitted to the PhD Program in Social Work.**Description:** The goals of this course are to teach students: (1) to implement the most appropriate research strategies in the pursuit of knowledge pertinent to social work-relevant topics, (2) to understand and critically assess reports of experimental and observational research studies, (3) to develop methodological strategies for testing important hypotheses and answering salient social work research questions. The course examines the four types of experimental validity [statistical conclusion, internal, construct, and external] and how to minimize threats to each. Issues regarding the selection and evaluation of measures including the various types of reliability and validity, sampling strategies, experimental and quasi-experimental study designs (including their underlying assumptions), and subsequent data analysis strategies are discussed.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**SW 734. Introduction to Social Statistics and Data Analysis 3 Units****Term Typically Offered:** Fall Only**Prerequisite(s):** This section is restricted to students admitted to the PhD Program in Social Work.**Description:** This is the first of two required PhD courses that focuses on quantitative data analysis. This course will focus on how to apply statistical approaches and ethical principles to all dimensions of diversity including ability, age, class, color, culture, ethnicity, family structure, gender identity/gender expression, marital status, national origin, race, religion or spirituality, sex, and sexual orientation. At the end of this course, students will be able to apply univariate and bivariate statistics, as well as analysis of variance, to a social science data set. They will also learn how to choose appropriate statistical analyses that answer research questions and hypotheses, conduct these analyses using STATA, interpret their findings, and communicate their results clearly and effectively.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**SW 741. Systemic Change: Identifying and Intervening in Issues of Social Justice 3 Units****Term Typically Offered:** Spring Only**Prerequisite(s):** This section is restricted to students admitted to the PhD Program in Social Work.**Description:** This course will allow students to learn and develop skills in effecting systems-level change to further anti-oppression, with a focus on anti-racism as an example to both illustrate system processes but also as core content needed to understand systemic oppression. Current manifestations of systematic change, such as the calls for reparations, police reform, and truth and reconciliation commissions for atrocities suffered by Black, Indigenous, and other People of Color (BIPOC) will be covered. Students will also learn concrete strategies for engaging in anti-racism and de-centering Whiteness in teaching, research, and community collaboration and advocacy.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**SW 742. Theory II: Theory-Driven Analysis of Social Problems to Inform Practice & Social Welfare Policy 3 Units****Term Typically Offered:** Spring Only**Prerequisite(s):** SW 732 Theory I: Philosophy of Science and the Development and Application of Theory in Social Work Research and Interventions.**Description:** This section is restricted to students admitted to the PhD Program in Social Work. SW 742 is the second of two theory courses in the program, building on the foundation provided in SW 732. The goal of this course is for students to obtain a theoretical and conceptual framework for analyzing and understanding social problems and their implications for macro social work practice and social policy. Students will examine what the empirical literature tells us about a social problem, and compare and contrast the contribution of sociological, sociocultural, philosophical, political, and economic theories to our understanding of it. Another goal is for students to learn how decentering whiteness and colonial perspectives enable an antiracist analysis of social problems and potential macro solutions which may promote equity. Students will analyze current social policy and macro practice designed to address social problems and propose alternatives based on the application of theory.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**SW 743. Advanced Research Methods 3 Units****Term Typically Offered:** Spring Only**Prerequisite(s):** SW 733 Foundation Research Methods.**Description:** This section is restricted to students admitted to the PhD Program in Social Work. This course is the second of two courses focused on quantitative methods, compliments the two data analysis courses, and prepares students for future independent studies and advanced scholarly writing to fund and disseminate research to diverse audiences. The course focuses on applying research approaches and ethical principles to all dimensions of diversity including ability, age, class, color, culture, ethnicity, family structure, gender identity/gender expression, marital status, national origin, race, religion or spirituality, sex, and sexual orientation. The major goals of this course are to teach students quantitative and mixed methods research designs, how each design addresses threats to validity, when each is most appropriate to answer various types of research questions, and how to execute each type of study ethically.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SW 744. Applied Regression Analysis 3 Units**Term Typically Offered:** Spring Only**Prerequisite(s):** SW 734 Introduction to Social Statistics and Data Analysis.

Description: This section is restricted to students admitted to the PhD Program in Social Work. This is the second of two required PhD courses focusing on quantitative data analysis. This course covers and introduces a broad class of models often referred to as generalized linear models (GLM). We will discuss five major models within this class: models for continuous outcomes, binary outcomes, categorical outcomes, ordered outcomes, and count outcomes. Upon successful completion of the course, you will be able to: (a) read and evaluate published or presented research that uses regression techniques; (b) use STATA to create your own results from secondary data; (c) translate the results into more useful summaries through tables and figures of predicted outcomes; and (d) use statistics to evaluate practice and policy and promote social justice.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SW 750. Independent Study: Examination of Scholarly Literature 3 Units**Term Typically Offered:** Fall, Spring, Summer**Prerequisite(s):** This section is restricted to students admitted to the PhD Program in Social Work.

Description: Student will focus in on a specific topic area for future research by conducting thorough literature reviews on the topics related to the area. The end result will be several tables summarizing the literature read and an integrative summary of the literature and potential gaps. This will set the student up to continue delving into the area over the next year so that by next summer, the topic is narrowed for the doctoral exams and the dissertation.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SW 751. Independent Study: Mentored Research Experience 3 Units**Term Typically Offered:** Fall, Spring, Summer**Prerequisite(s):** This section is restricted to students admitted to the PhD Program in Social Work.

Description: Helps students understand the basics of research and statistical procedures so they are prepared to move through the additional research and statistical procedures in the doctoral program. Course will be approached from a dual perspective of client outcomes and program evaluation.

Note: approval granted from the Registrar's Office to re-use the catalog number for a new course.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SW 752. Qualitative Methods: Design, Data Collection, and Analysis**3 Units****Term Typically Offered:** Summer Only**Prerequisite(s):** This section is restricted to students admitted to the PhD Program in Social Work.

Description: SW 752 examines the philosophical foundations and epistemological perspectives involved in qualitative research. This course is the first part of a two-part series in which students embark on an IRB approved qualitative study which culminates into an analytic memo, which is the beginning of a publishable paper. This course includes study of traditions and methods (e.g., narrative inquiry, case studies, phenomenology, grounded theory, and ethnography); scientific and ethical issues; and techniques of data collection, analysis, and interpretation. Emphasis is given to the contribution of qualitative studies in expanding social work knowledge and anti-racist scholarship. Students will expand upon one of the five qualitative approaches by learning and applying Constructivist Grounded Theory (CGT) techniques to the analysis of data. This process will lead to the development of a conceptual formulation, analytic memos, and set the foundation for further analysis, interpretation, and writing.

Note: approval granted from the Registrar's Office to re-use the catalog number for a new course.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SW 761. Research in Social Work Seminar**3 Units****Prerequisite(s):** Successful completion of the qualifying examination.

Description: Facilitates the student's completion of the dissertation prospectus and the dissertation itself. Students make formal presentations on their research plans addressing available literature, measurement and methodological issues, analysis of data, limitations, and the importance of investigation.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SW 763. Teaching Practicum**3 Units****Prerequisite(s):** Consent of instructor.

Description: Experience in planning and teaching a social work course including classroom teaching and evaluation of students' work.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- SW 764. Teaching in Social Work** **3 Units**
Term Typically Offered: Fall Only
Prerequisite(s): This section is restricted to students admitted to the PhD Program in Social Work.
Description: This course is the first of two designed to expose doctoral level students to teaching and social work education. The goals of this course are to assist students in: (1) examining and appraising theories of teaching and learning to develop their own teaching philosophy, (2) designing course materials and integrating evidence-supported teaching methods and strategies into their teaching practice, and (3) evaluating their own teaching practice. The course introduces students to social work curriculum standards; theoretical perspectives of adult learning, teaching, and curriculum development; and various teaching methods, tools, and technology to assist prospective teachers with designing and developing a course, teaching in both online and face-to-face formats, assessing student progress, and embracing anti-racist classroom practices that promote learning among diverse learners. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SW 765. Advanced Qualitative Research: Design, Data Collection, and Analysis** **3 Units**
Term Typically Offered: Fall Only
Prerequisite(s): SW 752.
Description: This section is restricted to students admitted to the PhD Program in Social Work. Interpretive approaches to systematic inquiry that contrast with the natural science model of social research will be critically examined, focusing on classic and contemporary theories to understand and interpret the social world and the role of qualitative methods in the study and improvement of people's lives. The first part of the courses focuses on qualitative inquiry from the multiple disciplines' views, and the second part examines qualitative inquiry from the social work perspective. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SW 766. Doctoral Foundations** **1-3 Units**
Grading Basis: Pass/Fail
Description: Preparation for entering SW doctoral students for two semesters of study of Advanced Research & Design and Analysis (ARDA I and ARDA II). A rigorous review of research conceptualization, design and sampling procedures will be a major focus of the class. Students will develop basic skills utilizing Predictive Analytics Software (PASW, formerly SPSS) and in addition to be compliant with school, university and federal standards for research by completing all required Institutional Review Board (IRB) trainings. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SW 780. Pro Seminar II: Comprehensive examination Preparation** **1 Unit**
Term Typically Offered: Spring Only
Prerequisite(s): SW 729.
Description: This section is restricted to students admitted to the PhD Program in Social Work. This is the 2nd part of the pro-seminar series. This course emphasizes preparation for the comprehensive exam process as well as knowledge and skills necessary to become leaders in the social work profession as researchers, academicians, and advocates for social justice. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SW 781. Teaching Practicum** **3 Units**
Grading Basis: Pass/Fail
Term Typically Offered: Spring Only
Prerequisite(s): SW 764; restricted to students admitted to the PhD Program in Social Work.
Description: This teaching practicum seminar is a structured opportunity for students who are teaching to engage in dialogue, structured activities, and reflection focused on teaching topics. There are two requirements for this course: 1. Weekly co-teaching with teaching mentor. Students will be partnered with a teaching mentor to co-teach the assigned faculty member's course. 2. Teaching Practicum Seminar. Students will attend and participate in this bi-weekly 2.5-hour seminar while also teaching their undergraduate or graduate class, weekly, under the mentorship of a faculty member. Additional focus will be around the knowledge and skills to prepare one to work with students around anti-racism and whose teaching skills are anti-racist. Grading will be on a pass-fail basis.
Note: Formerly offered as SW 763. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SW 797. Independent Study** **3-12 Units**
Description: Independent studies for doctoral students. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SW 798. Special Topics in Social Work** **1-6 Units**
Prerequisite(s): Kent Doctoral Student, topic cleared by Director or Assistant Director.
Description: Exploration of one or more topics not covered in the regular course offerings. For students after they finish their core courses and are preparing for their comprehensive exam. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SW 799. Dissertation Preparation 1-6 Units

Term Typically Offered: Fall, Spring, Summer

Prerequisite(s): Completion of coursework and submission of 'PhD Program Completed Coursework and Comprehensive Exam Committee/Schedule' form to PhD Social Work Program Coordinator.

Description: This section is restricted to students admitted to the PhD Program in Social Work. Research on dissertation project. Full-time students should take the course for 6 credit hours in a single semester, typically with no other courses. Credit hours may vary for part-time students. Connect with the PhD Program Director if there are questions regarding credit hour amount.

Note: Final Exams may be scheduled for and limited to the assigned time in any course type.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Sociology (SOC)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

SOC 500. Special Topics 3 Units

Prerequisite(s): Nine hours of core courses or consent of instructor.

Description: Exploration of well-defined topics in Sociology not treated in regular courses. Topic will be announced in Schedule of Courses.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SOC 512. Gender, Race, Work, and Welfare 3 Units

Prerequisite(s): 9 hours of social sciences work at the 300 level or above; or consent of instructor.

Description: Introduction to theory and research on labor market and welfare state with focus on gender race/ethnicity as they influence women's experiences of and ideas about work and welfare.

Note: Cross-listed with WGST 512 and PAS 512.

Note: Credit may not be earned for both SOC 512/WGST 512/PAS 512 and SOC 612/WGST 612/PAS 612.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SOC 604. Proseminar in Sociology-MA 1 Unit

Description: Designed to provide new graduate students with an introduction to sociology as a profession and to the Department of Sociology.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SOC 605. Voluntarism 3 Units

Description: Investigation of issues and topics related to voluntary activity. Includes contact with voluntary organization in the local community.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SOC 609. Statistics I 3 Units

Description: Multivariate statistical analyses, focusing on multiple regression using standard computer packages (e.g., SPSS, SAS) operating in Windows.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SOC 612. Gender, Race, Work, and Welfare 3 Units

Prerequisite(s): 9 hours of social sciences work at the 300 level or above; or consent of instructor.

Description: Introduction to theory and research on labor market and welfare state with focus on gender race/ethnicity as they influence women's experiences of and ideas about work and welfare.

Note: Cross-listed with PAS 612, WGST 512, WGST 612, and PAS 512.

Note: Credit may not be earned for both WGST 512/PAS 512 and PAS 512/WGST 612/PAS 612.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SOC 615. Research Methods 3 Units

Description: Intensive review of research design, instrumentation, survey procedures, data collection and processing techniques, analysis, and report writing.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SOC 618. Qualitative Research Methods 3 Units

Term Typically Offered: Spring Only

Prerequisite(s): SOC 615.

Description: Provides opportunities to design and critique field studies in educational and social settings and to practice techniques used to collect and analyze qualitative data. Additional time required outside class for observations and interviews.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- SOC 622. Survey Research and Design** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): SOC 615.
Description: This course will cover comprehensive survey planning, including ethical issues paramount to survey-based research; pros and cons of various modes of administration; instrument design (operationalizing concepts and constructs into measures, question design considerations, response choices, optimizing layout, etc.); pretesting (such as focus groups and cognitive interviews); sampling (including error estimation and power analysis); and administration procedures (e.g., interviewer training, follow-ups, strategies to boost response rates, third party survey platforms/tools).
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SOC 627. Data Visualization** 3 Units
Term Typically Offered: Fall Only
Prerequisite(s): Graduate level statistics course (e.g., SOC 609, SOC 610, SOC 611, or approved equivalent); or consent of instructor. This course offers ways in which to explore, analyze, and tell the story of data in a strategic manner. Topics will include how to make data more accessible and engaging by combining theories on perception with empirically derived practices to develop effective graphs, tables and text; how to generate compact dashboards, which display central metrics and multiple charts as a single page; how to use data visualization to explore novel variables and relationships as well as to monitor established ones; and how visualizations can be helpful conducting data analysis (e.g., to reveal conditional or nonlinear relationships, or to assess whether data meet assumptions of a statistical procedure).
Note: Cross-listed with SOC 427.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SOC 630. Sociology of Education** 3 Units
Description: Nature and function of mass education in modern society. Issues of politics of skill, dissemination of knowledge and values, and socialization. Focus on the school in urban society and as an instrument of social control, policy, and change.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SOC 631. Sociology of Work** 3 Units
Term Typically Offered: Spring Even Years
Description: Examines historical forces which have shaped the social division of labor, various structural arrangements in the workplace, and current occupational trends; the use of sociological theory in the study of industrial society; the social organization of work, alienation, labor relations, personnel policy, the impact of industrialization on social life and culture.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SOC 636. Sociology of Human Sexuality** 3 Units
Description: Advanced study of the historical, cultural, structural, and social-psychological factors affecting human sexual expression.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SOC 640. Urban Sociology** 3 Units
Description: Systematic critical examination of the history and application of social theory to the urban place. Specific attention is given to the utility of classical and contemporary theory in predicting and explaining human behavior in the urban environment.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SOC 642. Sociology of Disabilities** 3 Units
Description: Intensive examination of sociological perspectives on medicine, culture, and science to examine the meanings, experiences, demographics, and impacts of disability in historical and contemporary social contexts.
Note: Cross-listed with WGST 615.
Note: Credit may not be earned for this course and SOC 442 or WGST 415.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SOC 645. Environmental Sustainability and Social Change** 3 Units
Prerequisite(s): SOC 618 or SOC 622 and SOC 628 or SOC 735; or permission of the instructor.
Description: This course provides an overview of U.S. environmental history from both policy and movement perspectives. While the initial history will be U.S.-based, the course will also examine the global pictures as regards climate change. Key areas such as environmental sustainability and the emergent solutions to the "wicked problems" associated with improving and saving our environment will be explored.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SOC 650. Sociology of Families** 3 Units
Description: Study of the institution of the family, including intensive analysis of selected aspects of family group processes.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SOC 655. Social Problems** 3 Units
Term Typically Offered: Spring Only
Description: This course offers in an in-depth examination of selected social problems in the Louisville metro and surrounding area and requires students to define what constitutes a social problem, explain how two or more social problems are connected, apply theories and concepts to understand social problems in a local context, and demonstrate the ability to connect local data to structural explanations for each social problem.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- SOC 665. Sociology of Gender** 3 Units
Term Typically Offered: Fall Only
Description: This course examines the ways in which gender structures social life on both the micro level of individual experience and the macro level of social structure. Students will discuss theoretical perspectives on the development of gender and gender stereotypes and explore scientific research and perspectives on gender differences and similarities. The course will also examine the structural foundations and theoretical explanations of gender inequality, as well as the intersectionality of gender and other social locations and identities.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SOC 670. Advanced Demography** 3 Units
Description: Advanced study in topics related to population structure, composition, distribution, size, change, and growth.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SOC 672. Feminist Research and Methods in the Social Sciences** 3 Units
Prerequisite(s): Admission to Women's and Gender Studies Graduate Certificate or MA degree program, or admission to Sociology MA program, or permission of instructor.
Description: Through readings across social sciences disciplines (i.e., in sociology, anthropology, psychology, economics, political science), course will analyze many ways feminist theory and methodology have influenced research in the social sciences.
Note: Cross-listed with WGST 602.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SOC 675. Social Inequality & Stratification** 3 Units
Term Typically Offered: Fall Only
Description: Critical analysis of sociological theories of and research in social inequality and social stratification. Discussion of classical and modern works. Focus on the concept and reality of social class.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SOC 685. Race and Ethnicity** 3 Units
Description: Current and historical issues in race, racism, and ethnicity. Focus on U.S. with reference to other societies.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SOC 690. Independent Study** 1-6 Units
Prerequisite(s): Consent of director of graduate studies.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SOC 691. Topical Seminar in Sociology** 3 Units
Description: An exploration of a specific topic or problem area of importance in contemporary Sociology.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SOC 692. Thesis Administration** 3 Units
Term Typically Offered: Fall, Spring, Summer
Description: This independent study course requires students to work on their thesis under the direction of their thesis committee chair.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SOC 693. Thesis Analysis** 3 Units
Term Typically Offered: Fall, Spring
Prerequisite(s): Consent of graduate advisor.
Description: This course requires students to conduct the research portion of their thesis, specifically a secondary data analysis, survey research, or qualitative research.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SOC 695. Thesis Research** 1-9 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Consent of graduate advisor.
Description: This course provides an opportunity for students to finish their thesis and defend it before a faculty committee.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SOC 704. Proseminar in Sociology-PhD** 1 Unit
Description: Designed to provide new PhD students with an introduction to Sociology as a profession and to the Department of Sociology.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SOC 706. Doctoral Exam Preparation** 3-9 Units
Grading Basis: Pass/Fail
Prerequisite(s): Consent of director of graduate studies.
Description: Provides opportunity to prepare for comprehensive doctoral exams.
Note: May be repeated for a total of 9 credit hours.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SOC 710. Statistics II** 3 Units
Term Typically Offered: Spring Only
Prerequisite(s): SOC 609.
Description: Review of multivariate analytic techniques and a brief introduction to modeling procedures in the social sciences. Students will be instructed in the use of SPSS procedures and are expected to employ these in their work.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SOC 715. Statistics III** 3 Units
Prerequisite(s): SOC 610 or consent of instructor.
Description: Multivariate statistical techniques in both theoretical and applied sociological research settings.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SOC 735. Classical Theory **3 Units**

Description: A survey of the important writings of the major theorists in classical sociology.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SOC 738. Contemporary Theory **3 Units**

Term Typically Offered: Fall Only

Description: A survey of contemporary theoretical works that build upon, expand, challenge, or lie outside the bounds of classical sociological theories.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SOC 740. Social Policy **3 Units**

Description: Advanced study on the formation, enactment, and consequences of social policies.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SOC 790. Independent Study-PhD **1-6 Units**

Prerequisite(s): Consent of director of graduate studies.

Description: Opportunity for the student, under the supervision of a sponsoring faculty member, to pursue individualized study.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SOC 795. Dissertation Research **1-9 Units**

Prerequisite(s): Consent of graduate advisor.

Description: This course provides an opportunity for students to finish their dissertation and defend it before a faculty committee.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Spanish (SPAN)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

SPAN 500. Spanish Study Abroad **1-15 Units**

Prerequisite(s): Membership in a University of Louisville Language Study Abroad Program or a program approved by the department.

Description: Credit awarded upon demonstration of successful completion of program undertaken with prior approval of the department, including a paper or project and an oral or written examination in the language and culture, administered under the supervision of a faculty member.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SPAN 511. Studies in Spanish Medieval Literature **3 Units**

Prerequisite(s): SPAN 311, SPAN 321, SPAN 400.

Description: Special studies in the original language of selected works from the medieval period.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SPAN 513. Studies in Spanish Golden Age Literature **3 Units**

Prerequisite(s): SPAN 311, SPAN 321, SPAN 400.

Description: Intensive study of significant works of the Spanish Golden Age.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SPAN 516. Literary Influences in Nineteenth-Century Spanish **3 Units**

Prerequisite(s): SPAN 311, SPAN 321, SPAN 400.

Description: Study of significant writers of the Spanish Romantic, Realistic, and Naturalistic periods.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SPAN 518. Studies in Twentieth-Century Literature of Spain **3 Units**

Prerequisite(s): SPAN 311, SPAN 321, SPAN 400.

Description: Study in depth of significant works of the Post-Civil War period.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SPAN 524. Introduction to Hispanic Linguistics **3 Units**

Term Typically Offered: Fall, Spring

Prerequisite(s): SPAN 311 and SPAN 321; or SPAN 325 and SPAN 335; or score of 400 on the Spanish Heritage Language Test.

Description: Introduction to basic linguistic concepts, exploration of communicative strategies, and investigation of Hispanic culture and dialectology.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SPAN 527. Latin American Literature: Colonial Period through 19th Century **3 Units**

Prerequisite(s): SPAN 355, SPAN 403, or SPAN 404, or consent of instructor.

Description: Study of significant literary works from the Colonial Period through 19th century.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- SPAN 528. Contemporary Spanish-American Theatre** **3 Units**
Prerequisite(s): SPAN 355, SPAN 403, or SPAN 404, or consent of instructor.
Description: Major trends and authors in Spanish-American theatre since c. 1950. Critical methodology for theatre.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SPAN 529. Spanish-American Poetry** **3 Units**
Prerequisite(s): SPAN 355, SPAN 403, or SPAN 404, or consent of instructor.
Description: Selected Spanish-American poets, movements and national traditions. Critical methodological theory.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SPAN 530. Spanish-American Narrative** **3 Units**
Prerequisite(s): SPAN 355, SPAN 403 or SPAN 404 or consent of instructor.
Description: Selected Spanish-American novelists and short story writers, movements and national traditions. Critical methodological theory.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SPAN 544. Advanced Grammar and Stylistics** **3 Units**
Term Typically Offered: Occasionally Offered
Prerequisite(s): SPAN 311 and SPAN 321 (or SPAN 325 and SPAN 335); and 6 hours at the 400 level; or consent of instructor.
Description: An intensive review of the more problematic aspects of Spanish grammar (including prepositions, subjunctive, conditional sentences, relative clauses, spelling, punctuation); a reflection on the nature and functions of written language; and a hands-on-workshop on achieving clarity and grace in written texts.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SPAN 554. Hispanic Culture through Film and Media** **3 Units**
Prerequisite(s): SPAN 401, SPAN 402, SPAN 403, or SPAN 404; or consent of instructor; admission to the Spanish MA program.
Description: Study of specific/selected issues focusing on the Hispanic cultural milieu; its multiracial values and means of communication as manifested in the visual and print media (film, television, newspapers, documentaries, etc.)
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SPAN 561. Independent Study** **1-3 Units**
Prerequisite(s): Consent of department.
Description: Independent study in areas not covered in the regular curriculum.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SPAN 570. Intro to Interpreting** **3 Units**
Term Typically Offered: Fall Only
Prerequisite(s): SPAN 311 and SPAN 321 (or SPAN 325 and SPAN 335); and 6 hours at the 400 level; or consent of instructor.
Description: Provides an overview of the theoretical and practical foundations of Interpreting in community settings, including legal, health, education and social settings; intensive practice in consecutive interpreting, sight translation and basic simultaneous interpreting.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SPAN 599. Special Topics** **3 Units**
Term Typically Offered: Occasionally Offered
Prerequisite(s): Consent of instructor.
Description: Topics of a unique or specialized nature in Spanish language, literature or culture.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SPAN 611. Introduction to Methods and Research in Hispanic Studies** **3 Units**
Prerequisite(s): Admission to Spanish MA program.
Description: An introduction to graduate studies in Spanish. Emphasis on critical approaches to Hispanic studies, scholarly writing in Spanish, and research methods using print and electronic resources.
Note: This course must be taken within the first 18 credit hours of graduate studies.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SPAN 620. Teaching College Spanish** **3 Units**
Prerequisite(s): Graduate standing and permission of the graduate director; SPAN 524.
Description: An introduction to the teaching of Spanish at the college level. Limited to Graduate Teaching Assistants in Spanish.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SPAN 621. History of the Spanish Language** **3 Units**
Prerequisite(s): Admission to the Spanish MA program.
Description: Evolution of the Spanish language from earliest times to present. Linguistic analysis of representative literary and non-literary texts.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SPAN 624. Special Topics in Hispanic Linguistics** **3 Units**
Prerequisite(s): Admission to the Spanish MA program.
Description: Intensive study of a particular topic relating to language use and/or interaction (e.g., Semiotics, sociopragmatics, discourse analysis, classroom interaction, language pedagogy).
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- SPAN 634. Spanish for the Workplace and the Community** 3 Units
Prerequisite(s): Admission to the Spanish MA program.
Description: Development of skills and vocabulary necessary for the workplace. Emphasis on Spanish for special purposes/professions. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SPAN 644. Approaches to Hispanic Literature** 3 Units
Prerequisite(s): Admission to the Spanish MA program.
Description: Practice in literary criticism through intensive study of a particular genre, period, or national tradition. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SPAN 648. Hispanic Cultural Studies** 3 Units
Prerequisite(s): Admission to Spanish MA program.
Description: Study of the social construction of values, ideas, and belief systems in the Hispanic world. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SPAN 661. Foundations of Translation and Interpreting** 3 Units
Prerequisite(s): Admission to the Spanish MA program or Graduate Certificate in Translation program.
Description: Provides a theoretical background to the field of intercultural communication in its written and oral modalities. Introduces skills necessary for active practice in the main subfields of the profession. Requires reflection on ethical and cultural implication in the field.
Note: Cross-listed with TRPR 661.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SPAN 662. Education and Social Service Interpreting** 3 Units
Prerequisite(s): SPAN 661/TRPR 661 or consent of instructor.
Description: Explores the educational and social service interpreting settings; provides intensive practice in consecutive interpreting and sight translation at the intermediate-advanced level.
Note: Cross-listed with TRPR 662.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SPAN 663. Legal Translation and Interpreting** 3 Units
Prerequisite(s): SPAN 661/TRPR 661 or consent of instructor.
Description: Covers the fundamentals of legal translation and court interpretation in English and Spanish. Specific topics include legal language and terminology; legal text genres (birth certificates, academic transcripts, court proceedings and testimony); and translation and interpreting theories.
Note: Cross-listed with TRPR 663.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SPAN 664. Literary and Cultural Translation** 3 Units
Prerequisite(s): SPAN 661 or TRPR 661; and SPAN 662 or TRPR 662; or consent of instructor.
Description: Exploration of the theoretical underpinnings of translation and culture, followed by work on practical matters of literary translation in a workshop setting.
Note: Cross-listed with TRPR 664.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SPAN 665. Medical Translation and Interpreting** 3 Units
Prerequisite(s): SPAN 661/TRPR 661 or consent of instructor.
Description: Covers the fundamentals of medical translation and interpreting. Specific topics include scientific language and terminology; basic medical concepts; technical and medical text genres (informed consent, clinical studies, instruction manuals, clinical interviews in various settings); and translation and interpreting theories.
Note: Cross-listed with TRPR 665.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SPAN 667. Computers in Translation** 3 Units
Prerequisite(s): SPAN 661/TRPR 661 or consent of instructor.
Description: Provides intensive practice in applying tools and techniques of computer-assisted translation (localization; terminology, translation memory and project management) to the translation of a variety of text types (video games, medical texts, technical documentation, etc.).
Note: Cross-listed with TRPR 667.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SPAN 668. Directed Study Project** 3 Units
Term Typically Offered: Fall, Spring, Summer
Prerequisite(s): Graduate standing and approval of the chair or graduate advisor.
Description: A directed study project involving investigations, interpretation, and application culminating in a non-thesis alternative. For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SPAN 669. Final Translation and Interpreting Project** 3 Units
Prerequisite(s): Completion of at least 9 graduate hours in the translation and interpreting curriculum.
Description: The student will work on an extensive translation of interpreting project in order to demonstrate mastery of the basic linguistic and technical skills in the field.
Note: Cross-listed with TRPR 669.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SPAN 670. Special Topics **3 Units**
Prerequisite(s): Admission to the Spanish MA program.
Description: Selected topics in Spanish language, literature, or culture. Topics chosen will reflect the needs of the students and the background of the instructor.
Note: May be repeated under different subtitles.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SPAN 680. Independent Study **1-3 Units**
Prerequisite(s): Consent of the department.
Description: Independent study in areas not covered in the regular graduate curriculum.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SPAN 690. Thesis **3-6 Units**
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Sport Administration (SPAD)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

SPAD 509. International Sport **3 Units**
Prerequisite(s): Junior standing or consent of instructor.
Description: This course is designed to examine sport from an international perspective, identifying differences in governance and social issues affecting sport managers.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SPAD 510. Entrepreneurship in Sport Business **3 Units**
Prerequisite(s): Junior Standing or consent of instructor.
Description: This course will provide an analysis of entrepreneurship in sport and the sport industry. Emphasis will be placed on the structure and framework of entrepreneurial endeavors and the theory and practice on entrepreneurs in sport.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SPAD 521. Independent Study in Sport Administration **1-3 Units**
Prerequisite(s): Consent of instructor.
Description: Independent examination of selected topic(s) in Sport Administration.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SPAD 524. Management of Professional Baseball **3 Units**
Prerequisite(s): Junior standing or consent of instructor.
Description: This course is designed to examine the professional baseball segment of the sport industry from a managerial perspective, identifying the sports history, governance structures, and the social issues affecting sport managers.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SPAD 525. Sport Event Planning and Management **3 Units**
Prerequisite(s): Junior standing or consent of instructor.
Description: This course is designed to introduce students to principles and practices of planning, funding, operating, and evaluating events within the sport industry. This course includes actual hands-on involvement with event planning and management.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SPAD 529. Women and Sport **3 Units**
Term Typically Offered: Occasionally Offered
Prerequisite(s): Junior standing or consent of instructor.
Description: An effort to understand the role of the American woman in sport. Studies concepts about women, sport, and society in contemporary and historical perspectives.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SPAD 530. Sport Promotion and Sales **3 Units**
Prerequisite(s): Junior standing or consent of instructor.
Description: Covers the application of various promotional strategies such as advertising, direct sales, sales promotion, and publicity and examines how those strategies are integral to a sport organization's marketing plan.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SPAD 536. Sport Administration in Nonprofit Organizations **3 Units**
Prerequisite(s): Junior standing or consent of instructor.
Description: This course provides a comprehensive introduction to the principles of management and their practical applications to sport, leisure and recreation organizations in the nonprofit sector.
 For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- SPAD 561. Special Topics in Sport Administration** 3 Units
Term Typically Offered: Occasionally Offered
Prerequisite(s): Junior standing or consent of instructor.
Description: To enable students to gain knowledge, skills, and competencies on topics related to Sport Administration. Provide advanced study on selected topics or emerging issues related to the management, administration, or culture of sport.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SPAD 571. Sport for Development and Peace** 3 Units
Prerequisite(s): Junior standing or consent of instructor.
Description: This course will introduce students to sports for social change, often referred to as Sport for Development and Peace (SDP). Through this class, students will develop practical and theoretical knowledge of SDP by learning about key issues and concepts. The goal of the class is for students to develop an understanding of how SDP relates to their future career of choice in the sport industry.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SPAD 604. Sport Finance and Economics** 3 Units
Description: Examine advanced financial and economic concepts necessary for financial literacy in the sport business industry. Special emphasis placed on reading and analyzing financial statements, incorporating the time value of money into the financial decision-making process, and critically assessing economic impact analyses.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SPAD 605. Sports Facility Management** 3 Units
Description: Investigates the design and development of various athletic facilities in diverse settings. Examines corporate, community, and commercial facilities for strengths and weaknesses in design and management procedures.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SPAD 625. Sport Management and Leadership** 3 Units
Prerequisite(s): Admission to MS program or consent of instructor.
Description: This course is an overview of the nature and scope of the sport industry. This course will expand the students' understanding of management theories and their application to sport administration.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SPAD 635. Research in Sport Administration** 3 Units
Description: A critical analysis of current research and literature in Sport Administration and the sport business industry for practical application. Students will identify a research question; develop a review of literature; develop a research design; and identify possible implications and applications.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SPAD 637. Sport Analytics** 3 Units
Description: An in-depth analysis of how analytical methods can be applied in the sport industry.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SPAD 645. Sport Communication Theory and Practice** 3 Units
Term Typically Offered: Spring Only
Description: The purpose of this course is three-fold: 1) to explore sport communication theories and how they relate to current issues and topics within the sport communication realm, particularly as they address mass media communication and the larger sport environment; 2) to gain a firm understanding of how the media theory is applied to peer-reviewed research in the realm of sport communication; and 3) to examine more practical concepts, activities, and behaviors related to sport communication and apply them to professional and collegiate sports.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SPAD 653. Sport and Film** 3 Units
Term Typically Offered: Occasionally Offered
Description: An examination and critical analysis of sport in film. This course uses popular sport films to investigate the role of sport in our culture, encourage critical thinking, and appreciate issues of diversity.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SPAD 661. Special Topics in Sport Administration** 3 Units
Term Typically Offered: Occasionally Offered
Description: To enable students to gain knowledge, skills, and competencies on topics related to Sport Administration. Provides advanced study on selected topics or emerging issues related to the management, administration, or culture of sport.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SPAD 680. Athletics and Higher Education** 3 Units
Description: Examination of the historical development of athletics within American institutions of higher learning with an emphasis upon concept and ideas that underlie the developments and the major problems affecting contemporary intercollegiate athletics.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SPAD 683. Strategic Sport Marketing** 3 Units
Description: This course focuses on marketing and sponsorship concepts across a range of sport contexts. A special emphasis is placed on developing effective marketing strategies in the modern sport industry.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- SPAD 684. Sport Policy** 3 Units
Description: Trends and issues of importance to the practitioner in sport administration.
For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SPAD 685. Case Studies in Sport Administration 3 Units**Prerequisite(s):** SPAD 618, SPAD 625, and SPAD 683.**Description:** Applications of critical analysis and decision making models to sport industry settings; focus on management and social issues.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**SPAD 689. Legal Aspects in the Sport Industry 3 Units****Description:** Examines legal issues involving athletes, administrators, athletic trainers, coaches, equipment manufacturers, officials, operators of sport facilities, physicians, and the spectator.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**SPAD 692. Internship in Sport Administration 3 Units****Prerequisite(s):** 12 hours in SPAD, and consent of instructor.**Description:** Supervised practical work experience in an organization or business related to student's academic field, area of specialization, or career interest. Students enrolled in class must work a minimum of 300 hours at their internship site.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**SPAD 699. Directed Readings in Sport Administration 1-3 Units****Prerequisite(s):** Fifteen graduate hours and consent of sport administration instructor.**Description:** Supervised readings and written project relating to a specific research topic in physical education.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**SPAD 701. Doctoral Seminar in Sport Administration Research 3 Units****Prerequisite(s):** Admission to PhD program or consent of instructor.**Description:** This course will provide students with the opportunity to analyze and discuss theories related to behavior of individuals and groups in sport and exercise organizations.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**SPAD 702. Research Colloquium in Sport Administration I 3 Units****Prerequisite(s):** Admission to PhD program or consent of instructor.**Description:** This course will provide students with the opportunity to analyze emerging research with other students, faculty, and guest researchers/presenters.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**SPAD 703. Doctoral Seminar in Sport Consumer Research 3 Units****Prerequisite(s):** Admission to PhD program or consent of instructor.**Description:** This course will provide students with the opportunity to analyze and discuss theories related to the marketing of sport and exercise organizations.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**SPAD 704. Research Colloquium in Sport Administration II 3 Units****Prerequisite(s):** Admission to PhD program or consent of instructor.**Description:** This course will provide students with the opportunity to analyze emerging research with other students, faculty, and guest researchers/presenters. Students will also work with faculty on their dissertation topic and drafts of their dissertation proposal.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**SPAD 705. Doctoral Seminar in Social Issues in Sport 3 Units****Prerequisite(s):** Admission to PhD program, or consent of instructor.**Description:** This course will provide students with the opportunity to analyze and discuss theories related to social issues in sport.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Sustainability (SUST)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

SUST 518. Urban Demography and GIS 3 Units

Term Typically Offered: Spring Only

Prerequisite(s): SUST 101.

Description: This course will introduce students to geographic information systems (GIS) as an analytical tool with which to study urban demographic issues. The material will be geared towards students in the urban planning, public administration, and urban studies programs, with a focus on demographic data and issues frequently encountered by planners, policymakers, and policy analysts. Topics that will be covered include migration, housing and neighborhood development, segregation, and land use.

Note: Cross-listed with URBS 518, PLAN 618, PADM 621.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SUST 576. Sustainable Social-Ecological Systems 3 Units

Term Typically Offered: Fall Only

Prerequisite(s): SUST 101, SUST 201 or SUST 202; and SUST 301; or consent of instructor.

Description: The course is designed to address the social ecological frameworks for understanding and applying sustainability concepts in both theory and practice.

Note: Cross-listed with PLAN 676, UPA 676, and PADM 676.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SUST 602. Sustainability and the Natural Environment 3 Units

Term Typically Offered: Spring Only

Prerequisite(s): Consent of instructor.

Description: This course will focus on the sustainability of natural systems including populations, freshwater, soil, and air. Required for students in the MA or MS in Interdisciplinary Studies with a Concentration in Sustainability.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SUST 632. Independent Study Sustainability 1-3 Units

Term Typically Offered: Occasionally Offered

Prerequisite(s): Consent of Instructor.

Description: An independent study designed to fulfill individual graduate student needs. It offers an opportunity for graduate students to do in-depth reading and research in a particular subject, under the supervision of a faculty member.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SUST 638. Urban Justice & Policy 3 Units

Prerequisite(s): For Law School students: LAW 802, LAW 804, LAW 806, LAW 810, LAW 811, LAW 803, LAW 805, LAW 807, LAW 808, LAW 812, unless approved by Associate Dean of Academic Affairs.

Description: All other students: must be a graduate student in good standing unless waived by the professor teaching the course. For other students: graduate status or permission of instructor. An interdisciplinary study of various theories and concepts of justice in cities. Students will study selected urban policy problems through the perspectives of diverse theories and concepts of justice.

Note: Cross-listed with PLAN 638, LAW 846, UPA 638.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SUST 649. Internship Sustainability 1-3 Units

Term Typically Offered: Occasionally Offered

Prerequisite(s): Consent of Instructor.

Description: Course that provides practical, workplace or research experience for students in either the Master of Arts or Sciences in Interdisciplinary Studies with a Concentration in Sustainability.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SUST 650. Sustainability Seminar 1 Unit

Description: Seminar course with presentations by invited guests and students enrolled in the Master of Arts or Master of Science in interdisciplinary Studies, concentration in Sustainability program.

Note: Course is repeated until Master's Candidacy.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SUST 695. Special Topics in Sustainability 1-3 Units

Term Typically Offered: Occasionally Offered

Prerequisite(s): Consent of Instructor.

Description: Special topics course allows for a variety of emerging issues in sustainability. Open to students enrolled in the MA or MS in Interdisciplinary Studies with a Concentration in Sustainability. Course may be repeated for credit as long as the topic differs.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SUST 703. Land and Ecosystem Conservation 1-3 Units

Term Typically Offered: Fall Only

Prerequisite(s): Consent of Instructor and Director.

Description: A study of issues and methods concerning the conservation of ecosystems (e.g., prairies) sensitive lands (e.g., farmland, historic areas, national parks). Issues of sustainability will receive particular attention. May be offered as a seminar.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

SUST 739. Water Resources Law and Policy 2-3 Units

Prerequisite(s): LAW 802, LAW 804, LAW 806, LAW 810, LAW 811, LAW 803, LAW 805, LAW 807, LAW 808, LAW 812, unless approved by Associate Dean of Academic Affairs.

Description: This course involves the study of water rights, and the policies and legal principles governing the management of water resources generally. Specific topics may vary. Topics may include riparian rights, prior appropriation systems, water use permitting systems and statutory codes, the management drainage and runoff, the law and practices of water institutions, interstate water disputes, watershed-based management, integration of water supply and water quality protections, and the control and distribution of clean drinking water supplies. May be offered as a seminar.

Note: Course is cross-listed with LAW 839.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Theatre Arts (TA)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

TA 520. Acting Workshop 3 Units

Prerequisite(s): Departmental consent.

Description: Practical problems in the art of acting approached in a laboratory setting.

Note: Meets with TA 530.

Note: May be repeated.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

TA 526. Tools for a Global Theatre 3 Units

Prerequisite(s): Permission of instructor.

Description: Cultural issues, perspectives, and approaches to theatre in various parts of the world will be addressed using both classical and contemporary texts.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

TA 530. Directing Workshop 3 Units

Prerequisite(s): permission of instructor.

Description: Practical problems in the art of directing approached in a laboratory setting.

Note: Meets with TA 520.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

TA 532. Advanced Directing the Black Experience 3 Units

Prerequisite(s): Permission of instructor.

Description: Advanced techniques for staging plays from an African-centered perspective.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

TA 533. Advanced Stage Management 3 Units

Prerequisite(s): Consent of instructor.

Description: Techniques of production management during audition, rehearsal, and performance. Practical project required.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

TA 540. Problems in Technical Theatre 3 Units

Prerequisite(s): TA 241.

Description: Topics vary by semester, but may include: a) Welding, b) Sound Design, c) Technical Direction, and/or d) Special Topics.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

TA 541. Topics: Scene Design 3 Units

Prerequisite(s): TA 340.

Description: Topics vary by semester, but may include: a) Scene Design, b) Advanced Scene Design, c) Design for the Camera, d) Design for Lyric Theatre, and/or e) Special Topics.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

TA 543. Scenographic Techniques 3 Units

Prerequisite(s): TA 340.

Description: Topics vary by semester, but may include: a) CAD for Stage Design, b) Sketching and Rendering - Scenery, c) Scene Painting, and/or d) Special Topics.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

TA 545. Topics: Costume Design 3 Units

Prerequisite(s): TA 345 or Permission of the Instructor.

Description: Topics vary by semester, but may include: a) Advanced Costume Design, b) Costume History, c) Costume Construction, d) Sewing Techniques, e) Sketching and Rendering - Costumes, and/or f) Special Topics.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

<p>TA 546. Portfolio Design 1 Unit Term Typically Offered: Spring Odd Years Description: The course is designed for the student interested in developing a portfolio for a career in the arts. As part of this course, you will create a theatrical resume, a digital or physical portfolio, and a website to display work, resume, and contact information. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>TA 560. Directed Study in Theatre History 3 Units Prerequisite(s): Consent of instructor. Description: Survey of theatre history and literature, supplemented with directed reading of secondary sources. Note: Meets with TA 360-TA 361.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>TA 547. Advanced Black Aesthetic on Stage 3 Units Prerequisite(s): Permission of instructor. Description: Exploration of scenic, costume, lighting, and sound design from an Afrocentric perspective. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>TA 562. Advanced Black Dramatic Literature 3 Units Prerequisite(s): Permission of instructor. Description: An examination of the drama of selected African-descended writers whose work stands out as exceptional in the realm of dramatic literature. The material will be explored by means of lectures, play readings, written responses, in-depth discussion, videos, student projects and presentations. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>TA 549. Topics: Lighting Design 3 Units Prerequisite(s): TA 349. Description: Topics vary by semester, but may include: a) Lighting Design, b) Advanced Lighting Design, and/or c) Special Topics For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>TA 563. Advanced African-American Women in Theatre 3 Units Term Typically Offered: Occasionally Offered Prerequisite(s): Permission of instructor. Description: Examines the full range of African-American women working in theatre including playwrights, performers, designers, theorists, academics, and directors. Includes examination of plays by women of African descent. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>TA 550. Culminating Undergraduate Experience Practicum - CUE 3 Units Prerequisite(s): 90 credit hours. Description: The Theatre Arts CUE course is an independent project that demonstrates the student's ability to conceptualize, analyze, communicate and direct, design, perform, manage or otherwise take a leadership role in a work for the stage. Course Attribute(s): CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>TA 565. Advanced Theatre of the African World 3 Units Prerequisite(s): Permission of Instructor. Description: Cross-cultural examination of the drama of the African-descended playwrights in the African Diaspora. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>TA 555. Special Topics in Theatre 1-3 Units Term Typically Offered: Occasionally Offered Prerequisite(s): Consent of instructor. Description: Advanced study of specific areas of theatre arts. Note: May be repeated.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>TA 566. Advanced History of African-American Theatre 3 Units Term Typically Offered: Occasionally Offered Prerequisite(s): Permission of instructor. Description: Survey of African-American Theatre from 1820 to the present, its relationship to sociopolitical issues in America and its relationship to mainstream American theatre. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>TA 557. Advanced Hip-Hop Theatre 3 Units Description: Advanced exploration of hip-hop theatre and forerunners of hip-hop culture and art—including its relationship to African-American, American multicultural and postmodern styles—through discussion, reading, research and performance exercises. Note: Undergraduate credit may not be earned for both this course and TA 357.</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>TA 571. Playscript Interpretation - WR 3 Units Prerequisite(s): Permission of instructor. Description: Advanced techniques of play analysis, emphasizing the theatre artist's response to text. Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>TA 600. Thesis Guidance 1-6 Units</p> <p>For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	

<p>TA 610. Introduction to Graduate Study in Theatre 1 Unit Grading Basis: Pass/Fail Prerequisite(s): Permission of instructor. Description: Students are introduced to graduate studies, department requirements, life in the professional theatre, and tools for conducting research in the theatre. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>TA 625. MFA Performance Project I 1 Unit Grading Basis: Pass/Fail Prerequisite(s): Permission of instructor. Description: Practical projects in theatre performance (acting, directing, stage management). For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>TA 611. Theatre Pedagogy 1-3 Units Grading Basis: Pass/Fail Prerequisite(s): Graduate standing and permission of instructor. Description: This course is designed to prepare the advanced student of theatre for teaching in the discipline. It will be primarily hands-on, giving students the opportunity to teach, participate, and observe. Students will leave this class with increased practical knowledge of theatre skills, confidence in the role of "teacher," and the ability to articulate goals and expectations. Note: Course may be repeated for up to three credit hours. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>TA 626. Thesis Performance 2 Units Prerequisite(s): Consent of instructor. Description: Practical project in theatre performance (acting, directing, stage management) specifically associated with the writing of the Master of Fine Arts monograph. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>TA 620. Performance Theory 3 Units Prerequisite(s): Permission of instructor. Description: Historical study of major approaches to the aesthetics of acting and directing. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>TA 645. MFA Production Project 1-3 Units Prerequisite(s): Permission of instructor. Description: Practical projects in theatre production (design, technical theatre, theatre management). For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>TA 622. Graduate Movement I-IV 3 Units Prerequisite(s): Permission of instructor. Description: Specialized movement studies, covering such areas as character movement, stage combat, circus techniques, and mime. Note: One section each semester. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>TA 650. Theatre Internship 1-12 Units Prerequisite(s): Approval of department and host organization. Description: An internship with professional arts organizations. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>TA 623. Graduate Voice I-IV 3 Units Prerequisite(s): Permission of instructor. Description: Specialized vocal studies, covering such areas as character voice, dialects, expansion of vocal range, and integration of voice and body. Note: One section each semester. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>TA 654. Independent Study in Community Service 0.5-3 Units Prerequisite(s): Permission of instructor. Description: Independent study linking the arts with service to the community. Note: May be repeated for up to 3 credit hours. Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>TA 624. Acting for Camera 3 Units Prerequisite(s): Undergraduate students require permission of instructor. Description: The student will explore the fundamentals of on-camera acting and learn the techniques of various genres of camera performance. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>TA 655. Independent Study 1-3 Units Description: Independent study in areas not covered by the regular graduate curriculum. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>TA 624. Acting for Camera 3 Units Prerequisite(s): Undergraduate students require permission of instructor. Description: The student will explore the fundamentals of on-camera acting and learn the techniques of various genres of camera performance. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>TA 664. Approaching African-American Theatre 3 Units Description: Theoretical approaches and practical methods of performing, designing, staging, and teaching theatre, literature, and art that springs from a black aesthetic. Designed to prepare students to integrate African Diasporic topics into their teaching and to collaborate successfully as artists. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>

<p>TA 665. Tools for a Global Theatre 3 Units Prerequisite(s): Permission of instructor. Description: Cultural issues, perspectives and approaches to theatre in various parts of the world will be addressed using both classical and contemporary texts. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>TA 688. Graduate Movement III 3 Units Term Typically Offered: Fall Even Years Description: This course develops approaches to character creation within a specific time or performance style, rather than solely acquiring skills or learning a single aspect of that period or style. To decolonize period movement, we break with the European/Western model as standard and investigate the construction of physical identity and the ways in which socio-cultural factors inform and shape physical expression during the period in question. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>TA 681. Graduate Voice I 3 Units Term Typically Offered: Fall Only Description: This is a graduate level course in voice for the actor. The focus will be on the connection between body, breath, and voice, including an understanding of the basic principles of the Alexander Technique, an understanding of body, breath, and vocal anatomy/articulators, and exploration of the pedagogy of voice. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>TA 689. Graduate Movement IV 3 Units Term Typically Offered: Spring Odd Years Description: Graduate Movement IV: Devising Theatre - explores approaches to collective creation of performance from a variety of text-based sources. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>TA 682. Graduate Voice II 3 Units Term Typically Offered: Spring Only Description: This is a graduate-level course in voice, speech, and text work for the actor. Its focus will be strengthening and building on students' foundational work in previous classes to provide them with the technical and creative tools necessary to bring any text to life. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>TA 691. Graduate Acting I 3 Units Term Typically Offered: Fall Only Description: The student will become familiar with advanced study of the Uta Hagen, Sanford Meisner, and Michael Chekhov acting techniques. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>TA 683. Graduate Voice III 3 Units Term Typically Offered: Fall, Spring Description: This is a graduate level course in voice, speech, and the Alexander Technique. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>TA 692. Graduate Acting II 3 Units Term Typically Offered: Spring Only Description: The purpose of the course is to enable the students to begin to explore fundamental techniques in exploring how the imaginative process aid in developing character from the outside in. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>TA 684. Graduate Voice IV 3 Units Term Typically Offered: Fall Even Years Description: This is a graduate level course in the International Phonetic Alphabet (IPA), Dialects and Accents for the stage. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>TA 693. Graduate Acting III 3 Units Term Typically Offered: Fall Even Years Description: The purpose of this course is designed to provide the student with a fundamental approach to playing Shakespeare. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>TA 686. Graduate Movement I 3 Units Term Typically Offered: Fall Only Description: This course develops increased flexibility, strength, and whole body (including voice & mind) presence and communication while exploring and experimenting in a Grotowski-based approach to actor training. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>TA 694. Graduate Acting IV 3 Units Term Typically Offered: Fall Odd Years Description: This is an advanced scene study class in character building and development for performance. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>
<p>TA 687. Graduate Movement II 3 Units Term Typically Offered: Fall Only Description: A course in movement analysis that focuses on progressing the actor's relationship with both the function and expression of movement using the lens of the four bodies (physical, energetic, emotional and intellectual, and the body in space). For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>	<p>TA 695. Graduate Acting V 3 Units Term Typically Offered: Spring Even Years Description: A practical course in developing materials and mindset to become a successful freelance artist. The course focuses on the following skills: building an online presence; writing pitches; searching for and honing application materials for arts grants and residencies; and weaving together an artistic community. For class offerings for a specific term, refer to the Schedule of Classes (http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm)</p>

Translation Program (TRPR)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

TRPR 661. Foundations of Translation and interpreting 3 Units

Prerequisite(s): Admission to the Spanish MA program or Graduate Certificate in Translation program.

Description: Provides a theoretical background to the field of intercultural communication in its written and oral modalities. Introduces skills necessary for active practice in the main subfields of the profession. Requires reflection on ethical and cultural implications in the field.

Note: Cross-listed with SPAN 661.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

TRPR 662. Education and Social Service Interpreting 3 Units

Prerequisite(s): SPAN 661/TRPR 661 or consent of instructor.

Description: Explores the educational and social service interpreting settings; provides intensive practice in consecutive interpreting and sight translation at the intermediate-advanced level.

Note: Cross-listed with SPAN 662.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

TRPR 663. Legal Translation and Interpreting 3 Units

Prerequisite(s): SPAN 661/TRPR 661 or consent of instructor.

Description: Covers the fundamentals of legal translation and court interpretation in English and Spanish. Specific topics include legal language and terminology; legal text genres (birth certificates, academic transcripts, court proceedings and testimony); and translation and interpreting theories.

Note: Cross-listed with SPAN 663.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

TRPR 664. Literary and Cultural Translation 3 Units

Prerequisite(s): TRPR 661/SPAN 661 or consent of instructor.

Description: Exploration of the theoretical underpinnings of translation and culture, followed by work on practical matters of literary translation in a workshop setting.

Note: Cross-listed with SPAN 664.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

TRPR 665. Medical Translation and Interpreting 3 Units

Prerequisite(s): SPAN 661/TRPR 661 or consent of instructor.

Description: Covers the fundamentals of medical translation and interpreting. Specific topics include scientific language and terminology; basic medical concepts; technical and medical text genres (informed consent, clinical studies, instruction manuals, clinical interviews in various settings); and translation and interpreting theories.

Note: Cross-listed with SPAN 665.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

TRPR 667. Computers in Translation 3 Units

Prerequisite(s): SPAN 661/TRPR 661 or consent of instructor.

Description: Provides intensive practice in applying tools and techniques of computer-assisted translation (localization; terminology, translation memory and project management) to the translation of a variety of text types (video games, medical texts, technical documentation, etc).

Note: Cross-listed with SPAN 667.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

TRPR 669. Final Translation and Interpreting Project 3 Units

Prerequisite(s): Completion of at least 9 graduate hours in the translation and interpreting curriculum.

Description: The student will work on an extensive translation of interpreting project in order to demonstrate mastery of the basic linguistic and technical skills in the field.

Note: Cross-listed with SPAN 669.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

TRPR 670. Special Topics in Translation and Interpreting 3 Units

Prerequisite(s): SPAN 661/TRPR 661 or consent of instructor.

Description: This course focuses on a relevant topic in the fields of translation and interpreting (T & I) practice, research or teaching. Possible topics include: T & I ethics; specific domains or specialization within T & I (audiovisual translation, asylum interpreting, prison interpreting, etc.); volunteer T & I work; cognition of T & I work; T & I research; and didactics of T & I.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Urban and Public Affairs (UPA)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to

the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

UPA 602. Urban Policy and Governance 3 Units

Description: A study of urban policy and its impacts upon cities and particular segments of the population. Emphasizes the content, evolution, and consequences of national urban policy. Examines centralization and decentralization of metropolitan government, intergovernmental systems, and their relationship to policy implementation.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 603. Urban Economics 3 Units

Prerequisite(s): PLAN 500, ECON 500, or consent of instructor.

Description: Application of economic theory to urban policy issues including metropolitan development and job creation, poverty, crime, transportation, environment, spatial structure, and other issues.

Note: Cross-listed with PADM 640, ECON 605, and PLAN 603.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 606. Research Methods 3 Units

Description: Teaches students how to create, use and manage information systems central to policy research in urban and public affairs, and how to reach or recommend policy decisions drawn from these data bases.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 609. Qualitative Methods 3 Units

Description: An examination of the philosophical underpinnings of the qualitative approach with practical experience in conducting qualitative research.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 610. Urban Theory and Public Affairs 3 Units

Description: How theory and interpretive history illuminate the contemporary nature of the city. Introduces epistemological concerns and the nature of knowledge in describing the city and its urban form.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 621. Program Evaluation 3 Units

Description: This course will cover the key concepts and issues in program evaluation, including performance measurement, threats to validity, data sources and measurement issues, and research design. The primary objective of this course is for the student to understand the professional practice of program evaluation and the ethical considerations that guide the professional evaluator.

Note: Cross-listed with PADM 603.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 623. Comparative Urban Development 3 Units

Description: Examines urban development in a cross national perspective. Traces the formulation, strategy and implementation or management of urban development policy in a number of nations. While the emphasis is on North America and West Europe, the lessons have broader relevance for other parts of the world, and will be applied to developing areas.

Note: Cross-listed with PLAN 635.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 624. Economic Conditions and Forecasting 3 Units

Prerequisite(s): ECON 600 or ECON 605/UPA 603/PLAN 603/PADM 640.

Description: Develops quantitative tools for the analysis & forecasting of economic phenomena. Both structural & time models are presented. Basic econometric methods are used to fit models & evaluate their forecasting properties.

Note: Cross-listed with PLAN 628 & ECON 620.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 625. Macroeconomic Theory 3 Units

Prerequisite(s): ECON 500 and elementary calculus.

Description: Aggregate income and employment theory. Classical and Keynesian models; monetary and fiscal policy; the theory of growth and cycles.

Note: Cross-listed with ECON 650.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 628. Microeconomic Theory 3 Units

Prerequisite(s): ECON 500/PLAN 500.

Description: A thorough examination of the theory of household and firm. Determination of price under different market structures.

Note: Cross-listed with ECON 660.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 629. Geographic Information Systems 3 Units

Prerequisite(s): Consent of instructor.
Description: Application of GIS to real world projects. An emphasis will be placed on the development of a digital spatial database.
Note: Cross-listed with GEOG 657 & PLAN 608.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 632. Independent Study 1-6 Units

Description: Opportunity for the student, under the supervision of a sponsoring faculty member, to pursue individualized study related to research or practice that is not included in regular courses in the curriculum.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 638. Urban Justice & Policy 3 Units

Prerequisite(s): For Law School students: LAW 802, LAW 804, LAW 806, LAW 810, LAW 811, LAW 803, LAW 805, LAW 807, LAW 808, LAW 812, unless approved by Associate Dean of Academic Affairs.

Description: All other students: must be a graduate student in good standing unless waived by the professor teaching the course. For other students: graduate status or permission of instructor. An interdisciplinary study of various theories and concepts of justice in cities. Students will study selected urban policy problems through the perspectives of diverse theories and concepts of justice.
Note: Cross-listed with PLAN 638, SUST 638, LAW 846.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 640. Economic Development 3 Units

Term Typically Offered: Fall Only
Description: The course provides an introduction to the many facets of economic development, including the context, theory, process and practice of economic development, planning, and policy.
Note: Cross-listed with PLAN 626, PADM 645, POLS 603.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 645. Urban Dispossessions and Refuge 3 Units

Term Typically Offered: Fall Only
Description: This combination seminar and field-course explores the interconnections between global level dynamics of displacement and dispossession, and local level transformations and contestations over urban resources and regimes of belonging.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 647. Public Budgeting and Finance 3 Units

Description: Examines public budgeting and finance from economic, political, and institutional perspectives. Topics include: budget process, approaches and techniques of budgeting, ethics, intergovernmental fiscal relations, revenue raising, capital budgeting, debt administration and risk management.

Note: Cross-listed with PADM 604 & PLAN 609.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 648. Housing and Community Development 3 Units

Description: Examines issues in housing and community development.
Note: Cross-listed with PADM 625, PLAN 617.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 650. Urban Policy Analysis 3 Units

Term Typically Offered: Spring Only
Prerequisite(s): PADM 601 or permission of instructor.
Description: An introduction to basic issues in urban policy analysis, with an emphasis on the urban context. The course describes policy formulation of alternative policy options, analytical tools commonly used to evaluate policies, the correspondence between research and policy analysis, and the practical implications of policy analysis.
Note: Cross-listed with PADM 606.
Note: Course fee.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 651. Historic Preservation and Sustainable Practice 3 Units

Term Typically Offered: Spring Only
Description: This course is a graduate level course on historic preservation, examining sustainable practices in Louisville and other regions. The course examines architecture and the built environment as it relates to historic preservation, urban revitalization, and the contributions of other disciplines such as urban planning, economics, and political science to the principles and practice of preservation.
Note: Cross-listed with PADM 628 and PLAN 625.
Note: Course fee.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 652. Urbanism in the Global South: Cities and Space 3 Units

Term Typically Offered: Occasionally Offered
Description: This course is a reading-based seminar. We learn about processes and practices within the Latin American and African city from a spatial, cultural, economic and political perspective.
Note: Cross-listed with LALS 510 and GEOG 510.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 660. Advanced Organizational Behavior 3 Units

Description: Concepts and theories from the behavioral sciences that explain human behavior within organizations. Individual behavior and group dynamics with special emphasis on techniques and methods to improve individual functioning and interpersonal processes.
Note: Cross-listed with PADM 625.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 661. Foundations of Public Administration 3 Units

Description: Using the classic writings in the field of public administration for the past 150 years, the course explores the theoretical foundations of public administration and applies the theories to current practice in public administration.
Note: Cross-listed with PADM 600, PLAN 613, and POLS 625.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 662. Administrative Law and Processes 3 Units

Description: Study of processes of lawmaking and application by governmental executive departments. Encompasses substantive issues facing agencies in designing and implementing effective regulation and court efforts to interpret and control agencies' activities.
Note: Cross-listed with PADM 610/POLS 615.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 663. Social Equity and the Public Sector 3 Units

Description: This course will provide a comprehensive review of social equity in American public administration.
Note: Cross-listed with PADM 663 and PLAN 663.
Note: Course fee.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 664. Cultural Competency and Action 3 Units

Description: This course primarily focuses on the professional development of public administrators. It seeks to improve their knowledge about diverse issues of discrimination and prejudice in the public sector. It provides a framework for examining factors related to discrimination as well as racism, sexism, and heterosexism in terms of political history, power, stereotyped perceptions and practices across society, groups and among individuals.
Note: Cross-listed with PADM 664 and PLAN 664.
Note: Course Fee.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 667. Human Resources Management 3 Units

Description: Basic theories, public policies, laws, regulations, problems, and prospects of human resource development and management within the context of the public sector.
Note: Cross-listed with PADM 642 and PLAN 611.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 670. Sustainable Development and Planning 3 Units

Description: The course is designed to address the institutions and governance in sustainable development, and will take an interdisciplinary approach. The course will be open to all graduate students in any program at UofL.
Note: Cross-listed with PADM 670 and PLAN 670.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 672. Public Management 3 Units

Description: Administration of the organization from the point of view of top level management. Formulation and administration of policies and practices. Development of long-range strategic plans as well as the diagnosis, analysis, and evaluation of specific organizational problems.
Note: Cross-listed with PADM 605, PLAN 610.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 675. Introduction to Sustainability 3 Units

Prerequisite(s): Graduate standing.
Description: It is a graduate survey course of theory, issues and challenges in the area of sustainability.
Note: Cross-listed with PLAN 675, PADM 675.
Note: Open to any graduate student at UofL.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 676. Sustainable Social-Ecological Systems 3 Units

Prerequisite(s): Graduate standing.
Description: The course is designed to address the social and ecological frameworks for understanding and applying sustainability concepts in both theory and practice.
Note: Cross-listed with PADM 676, PLAN 676.
Note: The course will be open to all graduate students in any program at UofL.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 678. Land Use and Planning Law 3 Units

Description: Examination of legal issues related to planning and land use activities in the U.S. It explores the legal standards by which land use is regulated, planned. Students will study various legal and regulatory tools, including ordinances, state and federal legislation, and judicial decisions. Considerable attention will be given to planning perspectives on legal problems, as well as legal perspectives on planning problems.

Note: Cross-listed with LAW 904, PLAN 605.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 679. Environmental Policy 3 Units

Description: Survey of environmental issues and policies designed to address those issues.

Note: Cross-listed with PADM 627, PLAN 620 and POLS 627.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 680. Special Topics in Urban and Public Affairs 1-6 Units

Description: An advanced study of one or more selected topics or issues related to the study of Urban and Public Affairs.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 682. Urban Design 3 Units

Description: Covers theories, principles, and processes of urban design, including applications to actual design problems.

Note: Cross-listed with PLAN 622.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 683. Land Use Planning 3 Units

Description: This course provides an understanding of the history and current characteristics of land use planning and policy. Topics include the comprehensive plan, regulatory controls such as zoning, fiscal mechanisms of control, land use and environmental disputes, regional planning and growth management.

Note: Cross-listed with PLAN 607.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 684. Planning Theory and History 3 Units

Term Typically Offered: Fall Only

Description: This course will introduce the historic foundation of modern urban planning, and will investigate the central themes in planning theory, using both historical and contemporary contexts to assist in the understanding of its role in shaping planning thought and practice.

Note: Cross-listed with PLAN 511, PLAN 601, PADM 507, PADM 607.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 690. Urban Transportation Planning 3 Units

Prerequisite(s): ECON 605, PADM 640, PLAN 603 or UPA 603.

Description: Analysis of characteristics and costs of existing and innovative urban transportation systems. Role of planning methods in estimating transportation usage and choosing optimal plans.

Note: Cross-listed with PLAN 624.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 691. Urban Experiential Learning 3 Units

Term Typically Offered: Spring Only

Description: UPA 691 is a graduate seminar focused on the practical aspects of neighborhood and city growth and development. Through readings, discussion, debate and applied examples, students will learn how social and political factors structure neighborhoods, and the impact of federal, state, and local level programs on neighborhoods and cities. The course will draw from the experiences of developers, council members, community organizations, and other local stakeholders within the city of Louisville. Teaching modalities include slide and multimedia presentations, class discussions, field work, guest lectures, and walking tours.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 695. Urban Ethnography 3 Units

Term Typically Offered: Fall Only

Description: This seminar-style course explores three dimensions of ethnography: first and distinct form of knowledge; secondly as a research method; and thirdly as a genre of writing.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

UPA 700. Dissertation Research 1-12 Units

Prerequisite(s): Permission of program advisor.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

Women's, Gender and Sexuality Studies (WGST)

Subject-area course lists indicate courses currently active for offering at the University of Louisville. Not all courses are scheduled in any given academic term. For class offerings in a specific semester, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>).

500-level courses generally are included in both the undergraduate- and graduate-level course listings; however, specific course/section offerings may vary between semesters. Students are responsible for ensuring that they enroll in courses that are applicable to their particular academic programs.

Course Fees

Some courses may carry fees beyond the standard tuition costs to cover additional support or materials. Program-, subject- and course-specific fee information can be found on the Office of the Bursar website (<http://louisville.edu/bursar/tuitionfee/>).

**WGST 500. Senior Seminar in Women's, Gender and Sexuality Studies:
Social Sciences - CUE, WR** **3 Units****Term Typically Offered:** Occasionally Offered**Prerequisite(s):** Senior standing or consent of instructor.**Description:** This course is designed to deepen students' understanding of the evolution of interdisciplinary research on gender and its intersection with other structures of power and privilege. Students will investigate and critique the politics of issue-framing, question-formation, and rules of evidence that shape knowledge-production about gender and power. Students will apply gender-informed analyses to the hierarchies of difference structuring contemporary society. This course will help students become skilled analysts of the nuanced complexities of social change in diverse fields such as medicine, government, media, non-profit organizations, law, and education.**Note:** Approved for the Arts and Sciences upper-level requirement in written communication (WR).**Course Attribute(s):** CUE - This course fulfills the Culminating Undergraduate Experience (CUE) requirement for certain degree programs. CUE courses are advanced-level courses intended for majors with at least 90 earned credits/senior-level status.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 504. Community Engaged Research Methods **3 Units****Term Typically Offered:** Fall Only**Description:** This course will examine the principles and methods of community-engaged research practices from a transdisciplinary gender studies framework and with two goals in mind. First, we will examine what it means to do community engaged scholarship in some branches of the social sciences and humanities through a) a brief survey of key canonical and experimental readings in histories, theories, ethics, and practices of community engaged scholarship, and b) a few models presented by other UL community engaged scholars whose work provides useful lessons learned. Second, the course will provide both an overview of key qualitative methods used in community engaged scholarship and hands-on opportunities for you to participate in, on a small scale, meaningful engaged research with a community partner (Muhammad Ali Center's Education Department). Together, this learning the literature and learning-by-doing are designed to help you imagine what it might be like for you to work in this tradition.**Note:** Cross-listed with WGST 604.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 508. Queer Performance **3 Units****Term Typically Offered:** Occasionally Offered**Description:** What constitutes queer performance? Is queer who you are or what you do? Is sexuality all we mean by queer? What are the historical, aesthetic, and political aspects of queer performance? Integral to our theoretical discussions will be questions of practice and production: Where is queer performance staged and how is it received? How is it produced, for whom, by whom, and with what funds? Is queer inherently or even necessarily radical? Within rigid Western notions of gender, the "Queer Performer," is a gender outlaw; an individual who pushed at the edges of gender, forcing us to recognize that gender has little to do with our biological sex. Their performances of their gender(s), race(s), and/or sexuality(ies) challenges our prevailing notions of what it means to be Queer and what it means to perform identity. This course will examine the artistic and aesthetic performances of various Queer Performers to foster an understanding and appreciation of the rich diversity of the forms of performance styles and practitioners that might be called "lesbian," "gay," "transgender," and "queer," among others. Secondly, it will motivate students to examine the broad social, political, religious, and cultural contexts in which queer performance takes place. Lastly, this course will allow students to contemplate what it means to be a spectator of performance through a queer perspective, regardless of one's identity, or sexual orientation.**Note:** Cross-listed with WGST 608 and HUM 608.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 509. Women and Medicine **3 Units****Term Typically Offered:** Occasionally Offered**Description:** In this course we will focus on women and medicine in the United States from the early 19th century to the 21st century. We will be concerned with women as patients, caretakers, and practitioners, and the sexual and racial politics of health care.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 511. Transnational Feminism **3 Units****Term Typically Offered:** Fall, Spring**Description:** Transnational Feminism in Theory and Praxis is both an introduction to transnational feminism and a methods class. Using a mix of recent and older texts, we will examine how scholars in our field of Women's, Gender, and Sexuality Studies (WGST) innovatively link research questions with methods, sources, and interlocutors. In the process, we will reflect on the relationship between what we value as knowledge, and how we pursue and construct knowledge: in other words, the relationship between feminist epistemology and methodology. With an eye towards praxis - the theoretically informed application of knowledge - we will ask ourselves, for whom do we research?**Note:** Cross-listed with WGST 611.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 512. Gender, Race, Work, and Welfare 3 Units

Prerequisite(s): 9 hours of social sciences work at the 300 level or above; or consent of instructor.

Description: Introduction to theory and research on labor market and welfare state with focus on gender race/ethnicity as they influence women's experiences of and ideas about work and welfare. Credit may not be earned for both PAS 512/PAS 512 and SOC 612/WGST 612/PAS 612.

Note: Cross-listed with PAS 512, PAS 612, WGST 612, and SOC 612.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 513. U.S. Social Justice Movements of the 20th Century 3 Units

Term Typically Offered: Fall, Spring

Prerequisite(s): Junior standing.

Description: Course will begin with abolitionism, then concentrate on social justice upsurges of the 20th century, with emphasis on women in the civil rights and Black liberation movements. (Social Sciences)

Note: Cross-listed with HIST 513, PAS 513, SCHG 513, WGST 613.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 520. Women's Personal Narratives 3 Units

Prerequisite(s): ENGL 102, or ENGL 105, or WGST 199, or equivalent.

Description: Course examines issues such as race, class, religion, geography, and sexual orientation surrounding the writing/reading of women's personal narratives (e.g., diaries, letters, autobiographies, oral histories, biographies, and films) from the 19th and 20th centuries. (Humanities)

Note: Cross-listed with ENGL 554.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 522. The Body in Popular Media - WR 3 Units

Term Typically Offered: Occasionally Offered

Prerequisite(s): One WGST course or permission of instructor.

Description: Examines the relationship between culture and the body, focusing on how Western philosophy, as well as gender, race and class, have constructed popular images of and attitudes toward the body. (Humanities)

Note: Approved for the Arts & Sciences upper-level requirement in written communication (WR).

Note: Credit may not be earned for both WGST 522 (does not carry graduate credit) and WGST 622.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 523. Gender and Popular Music - WR 3 Units

Description: Course explores the way gender structures the production, distribution, and consumption of popular music, including variety of genres in the past and present, with attention to the intersectional roles of race, class, and sexuality. (Humanities)

Note: Approved for the Arts & Sciences upper-level requirement in written communication (WR).

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 525. Art and Trauma 3 Units

Prerequisite(s): ARTH 270 and ARTH 325, or permission of instructor.

Description: Representations of Trauma in the Visual Arts is an advanced exploratory seminar examining the changing relationships between trauma and its representation in the twentieth century. Beginning with the Holocaust, the course charts a trajectory from this most profound of collective traumas, to the refinement of clinical definitions of trauma (e.g., PTSD) in the wake of the Vietnam War, the development of trauma studies in the humanities in the 1990s, to the recent "pictorial turn" within scholarship on trauma. This historical framework will be brought to bear upon the dynamics of how trauma and visibility have been approached by scientists, scholars, and artists. Each week's reading and viewing materials will offer students an example of historical or clinical account of trauma, a secondary or applied analysis, and its artist's original work that responds to the particular traumatic event under consideration.

In this regard, students will be encouraged to negotiate the discursive relationships between history, theory, and practice.

Note: Cross-listed with ARTH 525.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 530. Feminism in Western Civilization, 1790-1920 - WR 3 Units

Description: Comparative analysis of feminist movements in the United States, Britain, and Europe, stressing intellectual background, social composition, goals and political strategies. (Social Sciences)

Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).

Note: Credit may not be received for WGST 530 or HIST 588 and WGST 630.

Note: Junior-standing recommended.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 531. Women in the Twentieth Century in Europe and the U.S. - WR 3 Units

Prerequisite(s): Junior standing.

Description: The history of women in Western society, including Europe and the U.S. in the twentieth century. Includes political, economic, social, and cultural developments. (Social Sciences)

Note: Cross-listed with HIST 583.

Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).

Note: Credit may not be earned for WGST 531/HIST 583 and WGST 631.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 532. History of American Sexualities - WR 3 Units

Prerequisite(s): Junior standing.

Description: The course focuses on sexual behaviors and meanings in America from the colonial period to the late twentieth century and how sexual meanings impact people's identities, choices, and social positions. The course also concerns the interaction of gender, race, and class. (Social Sciences)

Note: HIST 211 and HIST 212 is recommended.

Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).

Note: Credit may not be earned for this course and HIST 589.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 533. Women in 19th Century America - WR 3 Units

Prerequisite(s): Completion of ENGL 102 or ENGL 105, or the equivalent.

Description: Course focuses on material conditions, ideologies, and knowledge-systems that shaped American women's lives in the 19th century, with attention to race, class, and regional differences. Credit may not be earned for both WGST 533 and WGST 633.

Note: Approved for the Arts & Sciences upper-level requirement in written communication (WR).

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 538. Woman and Sport 3 Units

Term Typically Offered: Occasionally Offered

Description: An effort to understand the role of the American woman in sport. Studies concepts about women, sport, and society in contemporary and historical perspectives. (Social Sciences)

Note: Cross-listed with SPAD 529.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 540. Women's Health in Africa - WR 3 Units

Prerequisite(s): Senior standing.

Description: Examination of population growth, early marriage, family size and cultural and religious beliefs on reproductive health of contemporary African women. (Social Sciences)

Note: Cross-listed with PAS 562.

Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).

Note: Credit may not be earned for both WGST 540/PAS 562 and WGST 640/PAS 662.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 541. Feminism and Science Fiction 3 Units

Term Typically Offered: Occasionally Offered

Description: This class will examine the science fiction genre through the lens of gender and feminism. The course will develop students' critical reading, thinking, writing and presentation skills. Reading works of science fiction with and against classic readings in feminist theory, students will develop an understanding of the ways writers, particularly women writers, have worked within the genre to explore issues related to gender, race, class, and sexuality. Students will be asked to consider the ways the science fiction writers have participated in on-going dialogues within larger culture, within the SF community, and within feminism, related to gender roles, gender and sexual identity, and hegemonic social structures.

Note: Cross-listed with HUM 541.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 542. African American Women and the History of Reproductive Justice 3 Units

Term Typically Offered: Fall, Spring

Description: Course explores the fight for reproductive justice within African American communities. Using Loretta Ross' reproductive justice framework, the course examines how race, gender, class, sexuality and ability have impacted African American women's right to reproductive decision making. The course introduces primary and secondary sources that contextualize African American women's position as autonomous beings with the right to choose if, when, how, where and with whom to have children. The course discusses the following major themes: reproductive lives of enslaved Black women with a focus on gynecological acts of resistance; medical exploitation and the beginning of modern gynecology; development of eugenic health initiatives focused on African American women and girls; intersectional activist collectives; maternity and survival within carceral spaces; intersections of LGBTQ and reproductive justice movements; ethical use of reproductive technologies.

Note: Cross-listed with WGST 642.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 543. Black Women's Voices - WR 3 Units

Prerequisite(s): At least 6 credit hours in Social Science or Humanities or consent of faculty.

Description: Global synopsis of black women's studies and social thoughts. Highlights roadblocks and bridges experienced. Captures race, gender, class and spatial dimensions. (Social Sciences)

Note: Cross-listed with PAS 542.

Note: Approved for the Arts & Sciences upper-level requirement in written communication (WR).

Note: Credit may not be earned for both WGST 543/PAS 542 and WGST 643/PAS 643.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

- WGST 545. Southern Women: Black and White** 3 Units
Term Typically Offered: Occasionally Offered
Description: Course focuses on questions of identity for southern women, black and white, by contrasting stereotypes and ideals with realities for these women in the slave, Jim Crow, and modern South. (Social Sciences)
Note: Cross-listed with PAS 545.
Note: Credit may not be earned for this course and WGST 645 or PAS 645.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- WGST 547. Language, Race, Class, and Gender** 3 Units
Prerequisite(s): Junior standing.
Description: Course investigates the intersections of linguistic behavior with questions of race, class and gender. Students will gain an understanding of the multiple characteristics of communication. (Humanities)
Note: Cross-listed with PAS 547.
Note: Credit may not be earned for this course and PAS 547.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- WGST 556. Feminist Theory - WR** 3 Units
Description: Survey of the history and scope of the feminist tradition with emphasis upon liberal, radical, Marxist, socialist, psychoanalytic, and postmodern approaches to feminist theory. (Social Sciences)
Note: Cross-listed with POLS 568.
Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).
Note: Credit may not be earned for both WGST 556/POLS 568 and WGST 656/POLS 668.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- WGST 558. Women in Developing Countries - WR** 3 Units
Description: Follows the progress of the international women's movement by focusing on the emergence of women leaders and their work in developing countries since the First World Conference on Women, 1975 to the present. (Social Sciences)
Note: Cross-listed with POLS 563.
Note: Approved for the Arts and Sciences upper-level requirement in written communication (WR).
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- WGST 560. Feminist Philosophical Literature** 3 Units
Prerequisite(s): Junior standing.
Description: Examination of central works by feminist philosophers in such sub-disciplines as ethics, political philosophy, and epistemology. (Humanities)
Note: Cross-listed with PHIL 518.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- WGST 571. Francophone Women Writers - WR** 3 Units
Prerequisite(s): Faculty consent.
Description: Readings of literary and non-literary texts by women of the French-speaking world. (Humanities)
Note: Cross-listed with M L 506.
Note: Approved for the Arts & Sciences upper-level requirement in written communication (WR).
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- WGST 582. Health and Social Justice** 3 Units
Term Typically Offered: Occasionally Offered
Prerequisite(s): Admission into Bioethics MA program, or consent of instructor.
Description: An interdisciplinary approach to a wide array of issues pertaining to health and health care that arise at the intersection of gender, race, sex, disability, class, and culture.
Note: Cross-listed with PHIL 682, WGST 682, PHIL 582, BETH 682.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- WGST 584. Women in East Asian History** 3 Units
Description: The history of women in China from ancient times to the twentieth century, with comparisons to women's experiences in Japan, Korea, and Vietnam. (Social Sciences)
Note: Cross-listed with HIST 584.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- WGST 589. Independent Study: Women's, Gender and Sexuality Studies-Humanities** 1-3 Units
Prerequisite(s): Restricted to students who have a 3.0 cumulative GPA and have completed a minimum of 12 hours in WGST courses; permission of instructor.
Description: Provides opportunity for a student to do advanced interdisciplinary, humanities work on a Women's, Gender and Sexuality Studies topic.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)
- WGST 590. Independent Study: Women's, Gender and Sexuality Studies-Social Sciences** 1-3 Units
Prerequisite(s): Restricted to students who have a 3.0 cumulative GPA and have completed a minimum of 12 hours in WGST courses; permission of instructor.
Description: Provides opportunity for a student to do advanced interdisciplinary, social sciences work on a Women's, Gender and Sexuality Studies topic. Topics announced in Schedule of Courses.
- For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 591. Topics in Women's, Gender and Sexuality Studies: Social Sciences 3 Units**Term Typically Offered:** Occasionally Offered**Description:** Provides advanced study of a special topic related to women, gender or sexuality from an interdisciplinary, social sciences perspective. Topics announced in Schedule of Courses. (Social Science) For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**WGST 592. Topics in Women's, Gender and Sexuality Studies: Social Sciences - WR** 3 Units**Description:** Provides advanced study of a special topic related to women, gender or sexuality from an interdisciplinary, social sciences perspective. Topics announced in Schedule of Courses.**Note:** Approved for the Arts and Sciences upper-level requirement in written communication (WR).For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**WGST 593. Topics in Women's, Gender and Sexuality Studies: Humanities** 3 Units**Description:** Provides advanced study of a special topic related to women, gender or sexuality from an interdisciplinary, humanities perspective. Topics announced in Schedule of Courses. (Humanities) For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**WGST 594. Topics in Women's, Gender and Sexuality Studies: Humanities - WR** 3 Units**Description:** Provides advanced study of a special topic related to women, gender or sexuality from an interdisciplinary, humanities perspective. Topics announced in Schedule of Courses.**Note:** Approved for the General Education requirement in written communication (WR).For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**WGST 600. Research/Writing in Women's and Gender Studies.** 1 Unit**Prerequisite(s):** Restricted to students admitted to WGST MA or graduate certificate program.**Description:** Course focuses on building research and academic writing skills. Students will become familiar with primary/secondary-source databases and with the process and structure of academic writing in the social sciences and humanities.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**WGST 601. Feminist Research in the Humanities** 3 Units**Prerequisite(s):** Restricted to students admitted to WGST MA or graduate certificate program, or permission of instructor.**Description:** Course examines ways feminist concerns have influenced research questions in the humanities (history; philosophy; religious, cultural, and literary studies). Readings focus on gender issues as they relate to power, representation, race, ethnicity, class, sexuality.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**WGST 602. Feminist Research and Methods in the Social Sciences** 3 Units**Prerequisite(s):** Admission to Women's and Gender Studies Graduate Certificate or MA degree program, or admission to Sociology MA program, or permission of instructor.**Description:** Through readings across social sciences disciplines (i.e.; in sociology, anthropology, psychology, economics, political science), course will analyze many ways feminist theory and methodology have influenced research in the social sciences.**Note:** Cross-listed with SOC 672.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**WGST 603. History of U.S. Feminisms** 3 Units**Prerequisite(s):** Restricted to graduate students.**Description:** Course focuses on social, ideological, and institutional dynamics that have shaped the development of feminisms in the U.S. since 1840. Students will read primary and secondary sources related to self-described feminist movements as well as other movements aimed at gender and social justice.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)**WGST 604. Community Engaged Research Methods** 3 Units**Term Typically Offered:** Fall Only**Description:** This course will examine the principles and methods of community-engaged research practices from a transdisciplinary gender studies framework and with two goals in mind. First, we will examine what it means to do community engaged scholarship in some branches of the social sciences and humanities through a) a brief survey of key canonical and experimental readings in histories, theories, ethics, and practices of community engaged scholarship, and b) a few models presented by other UL community engaged scholars whose work provides useful lessons learned. Second, the course will provide both an overview of key qualitative methods used in community engaged scholarship and hands-on opportunities for you to participate in, on a small scale, meaningful engaged research with a community partner (Muhammad Ali Center's Education Department). Together, this learning the literature and learning-by-doing are designed to help you imagine what it might be like for you to work in this tradition.**Note:** Cross-listed with WGST 504.**Course Attribute(s):** CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 608. Queer Performance**3 Units****Term Typically Offered:** Occasionally Offered

Description: What constitutes queer performance? Is queer who you are or what you do? Is sexuality all we mean by queer? What are the historical, aesthetic, and political aspects of queer performance? Integral to our theoretical discussions will be questions of practice and production: Where is queer performance staged and how is it received? How is it produced, for whom, by whom, and with what funds? Is queer inherently or even necessarily radical? Within rigid Western notions of gender, the "Queer Performer," is a gender outlaw; an individual who pushed at the edges of gender, forcing us to recognize that gender has little to do with our biological sex. Their performances of their gender(s), race(s), and/or sexuality(ies) challenges our prevailing notions of what it means to be Queer and what it means to perform identity. This course will examine the artistic and aesthetic performances of various Queer Performers to foster an understanding and appreciation of the rich diversity of the forms of performance styles and practitioners that might be called "lesbian," "gay," "transgender," and "queer," among others. Secondly, it will motivate students to examine the broad social, political, religious, and cultural contexts in which queer performance takes place. Lastly, this course will allow students to contemplate what it means to be a spectator of performance through a queer perspective, regardless of one's identity, or sexual orientation.

Note: Cross-listed with WGST 508 and HUM 608.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 609. Women and Medicine**3 Units****Term Typically Offered:** Occasionally Offered

Description: In this course we will focus on women and medicine in the United States from the early 19th century to the 21st century. We will be concerned with women as patients, caretakers, and practitioners, and the sexual and racial politics of health care.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 610. Black Feminism in Action**3 Units****Term Typically Offered:** Fall Only

Description: The course examines the evolution of Black Feminist consciousness in the U.S. from the 1830s to the present. (Social Sciences)

Note: Cross-listed with PAS 410 and WGST 410.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 611. Transnational Feminism**3 Units****Term Typically Offered:** Fall, Spring

Description: Transnational Feminism in Theory and Praxis is both an introduction to transnational feminism and a methods class. Using a mix of recent and older texts, we will examine how scholars in our field of Women's, Gender, and Sexuality Studies (WGST) innovatively link research questions with methods, sources, and interlocutors. In the process, we will reflect on the relationship between what we value as knowledge, and how we pursue and construct knowledge: in other words, the relationship between feminist epistemology and methodology. With an eye towards praxis - the theoretically informed application of knowledge - we will ask ourselves, for whom do we research?

Note: Cross-listed with WGST 511.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 612. Gender, Race, Work, and Welfare**3 Units**

Prerequisite(s): 9 hours of social sciences work at the 300 level or above; or consent of instructor.

Description: Introduction to theory and research on labor market and welfare state with focus on gender race/ethnicity as they influence women's experiences of and ideas about work and welfare.

Note: Cross-listed with PAS 612, WGST 512, PAS 512, and SOC 612.**Note:** Credit may not be earned for both WGST 512/PAS 512 and SOC 612/PAS 512/PAS 612.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 613. U.S. Social Justice Movements of the 20th Century**3 Units****Term Typically Offered:** Fall, Spring**Prerequisite(s):** Junior standing.

Description: Course will begin with abolitionism, then concentrate on social justice upsurges of the 20th century, with emphasis on women in the civil rights and Black liberation movements. (Social Sciences)

Note: Cross-listed with HIST 513, PAS 513, SCHG 513, WGST 513.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 615. Seminar in the Sociology of Disabilities**3 Units**

Description: Intensive examination of sociological perspectives on medicine, culture, and science to examine the meanings, experiences, demographics, and impact of disability in historical and contemporary contexts.

Note: Cross-listed with SOC 642.**Note:** Credit may not be earned for this course and WGST 415 or SOC 442.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 620. Women's Personal Narratives**3 Units**

Description: Course examines issues such as race, class, religion, geography, and sexual orientation surrounding the writing/reading of women's personal narratives (e.g., diaries, letters, autobiographies, oral histories, biographies, and film) from the 19th and 20th centuries.

Note: Credit may not be earned for this course and WGST 520 or ENGL 554.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 622. The Body in Popular Media**3 Units**

Description: Examines the relationship between culture and the body, focusing on how Western philosophy, as well as gender, race and class, have constructed popular images of and attitudes toward the body.

Note: Credit may not be earned for both WGST 522 and WGST 622.

Note: WGST 522 does not carry graduate credit.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 625. Art and Trauma**3 Units**

Prerequisite(s): Graduate standing.

Description: Representations of Trauma in the Visual Arts is an advanced exploratory seminar examining the changing relationships between trauma and its representation in the twentieth century. Beginning with the Holocaust, the course charts a trajectory from this most profound of collective traumas, to the refinement of clinical definitions of trauma (e.g., PTSD) in the wake of the Vietnam War, the development of trauma studies in the humanities in the 1990s, to the recent "pictorial turn" within scholarship on trauma. This historical framework will be brought to bear upon the dynamics of how trauma and visually have been approached by scientists, scholars, and artists. Each week's reading and viewing materials will offer students an example of historical or clinical account of trauma, a secondary or applied analysis, and its artist's original work that responds to the particular traumatic event under consideration. In this regard, students will be encouraged to negotiate the discursive relationships between history, theory, and practice.

Note: Cross-listed with ARTH 625.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 630. Feminism in Western Civilization**3 Units**

Description: Comparative analysis of feminist movements in the United States, Britain, and Europe, stressing intellectual background, social composition, goals and political strategies.

Note: Credit may not be received for WGST 530 or HIST 588 and WGST 630.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 631. Women in the Twentieth Century in Europe and the U.S.**3 Units**

Description: The history of women in Western society, including Europe and the U.S. in the twentieth century. Includes political, economic, social, and cultural developments.

Note: Credit may not be earned for WGST 531/HIST 583 and WGST 631.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 632. History of American Sexualities**3 Units**

Description: The course focuses on sexual behaviors and meanings in America from colonial period to the late twentieth century and how sexual meanings impact people's identities, choices, and social position. The course also examines the interaction of gender, race, and class.

Note: Credit may not be earned for this course and WGST 532 or HIST 589.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 633. Women in 19th-Century America**3 Units**

Description: Course focuses on material conditions, ideologies, and knowledge-systems that shaped American women's lives in the 19th century, with attention to race, class, and regional differences.

Note: Credit may not be received for this course and for HIST 506 or WGST 533.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 640. Women's Health in Africa**3 Units**

Prerequisite(s): Graduate standing.

Description: Examination of population growth, early marriage, family size, and cultural and religious beliefs of reproduction on the health of the contemporary African woman.

Note: Cross-listed with PAS 662.

Note: Credit cannot be earned for both WGST 540/PAS 562 and WGST 640/PAS 662.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 641. Feminism and Science Fiction**3 Units**

Term Typically Offered: Occasionally Offered

Description: This class will examine the science fiction genre through the lens of gender and feminism. The course will develop students' critical reading, thinking, writing and presentation skills. Reading works of science fiction with and against classic readings in feminist theory, students will develop an understanding of the ways writers, particularly women writers, have worked within the genre to explore issues related to gender, race, class, and sexuality. Students will be asked to consider the ways the science fiction writers have participated in ongoing dialogues within larger culture, within the SF community, and within feminism, related to gender roles, gender and sexual identity, and hegemonic social structures.

Note: Cross-listed with HUM 641.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 642. African American Women and the History of Reproductive Justice 3 Units

Term Typically Offered: Fall, Spring

Description: Course explores the fight for reproductive justice within African American communities. Using Loretta Ross' reproductive justice framework, the course examines how race, gender, class, sexuality and ability have impacted African American women's right to reproductive decision making. The course introduces primary and secondary sources that contextualize African American women's position as autonomous beings with the right to choose if, when, how, where and with whom to have children. The course discusses the following major themes: reproductive lives of enslaved Black women with a focus on gynecological acts of resistance; medical exploitation and the beginning of modern gynecology; development of eugenic health initiatives focused on African American women and girls; intersectional activist collectives; maternity and survival within carceral spaces; intersections of LGBTQ and reproductive justice movements; ethical use of reproductive technologies.

Note: Cross-listed with WGST 542.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 643. Black Women's Voices 3 Units

Prerequisite(s): Graduate standing.

Description: Global synopsis of black women's studies and social thoughts. Highlights roadblocks and bridges experienced. Captures race, gender, class and spatial dimensions.

Note: Cross-listed with PAS 643.

Note: Credit may not be earned for both WGST 543/PAS 542 and WGST 643/PAS 643.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 644. Black Lesbian Lives 3 Units

Term Typically Offered: Occasionally Offered

Description: Course focuses on black, lesbian-identified people cross-culturally, examining autobiographical accounts and visual culture within the context of LGBTQ politics and discourse. (Social Sciences).

Note: Cross-listed with PAS 344 and WGST 344.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 645. Southern Women: Black and White 3 Units

Description: Course focuses on questions of identity for southern women, black and white, by contrasting stereotypes and ideals with realities for these women in the slave, Jim Crow, and modern south.

Note: Cross-listed with PAS 645.

Note: Credit may not be earned for this course and WGST 545 or PAS 545.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 656. Feminist Theory 3 Units

Description: Survey of the history and scope of the feminist tradition with emphasis upon liberal, radical, Marxist, socialist, psychoanalytic, and post modern approaches to feminist theory. (Social Sciences)

Note: Cross-listed with POLS 668.

Note: Credit may not be earned for both WGST 556/POLS 568 and WGST 656/POLS 668.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 682. Health and Social Justice 3 Units

Term Typically Offered: Occasionally Offered

Prerequisite(s): Admission into Bioethics MA program, or consent of instructor.

Description: An interdisciplinary approach to a wide array of issues pertaining to health and health care that arise at the intersection of gender, race, sex, disability, class, and culture.

Note: Cross-listed with PHIL 682, BETH 682, PHIL 582, WGST 582.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 689. Independent Study: Women's, Gender and Sexuality Studies-Humanities 1-3 Units

Description: Provides opportunity for a student to do advanced interdisciplinary, humanities work on a Women's, Gender and Sexuality Studies topic.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 690. Independent Study: Women's, Gender and Sexuality Studies-Social Sciences 1-3 Units

Prerequisite(s): Consent of instructor.

Description: Provides opportunity for a graduate student to do advanced interdisciplinary, social sciences work on a Women's, Gender and Sexuality Studies topic.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 691. Advanced Topics in Women's, Gender and Sexuality Studies-Social Sciences 3 Units

Prerequisite(s): Graduate standing.

Description: Provides advanced study of a special topic related to women, gender or sexuality from an interdisciplinary, social sciences approach.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 692. Advanced Topics in Women's, Gender and Sexuality Studies-Humanities 3 Units

Prerequisite(s): Graduate standing.

Description: Provides advanced study of a special topic related to women, gender or sexuality from an interdisciplinary, humanities perspective.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 695. Women's, Gender and Sexuality Studies Practicum 3 Units

Prerequisite(s): Consent of chair.

Description: 150 hours of field work in a community organization, culminating in a portfolio, research project, or grant proposal.

Course Attribute(s): CBL - This course includes Community-Based Learning (CBL). Students will engage in a community experience or project with an external partner in order to enhance understanding and application of academic content.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 698. Master's Degree Project 3 Units

Prerequisite(s): Consent of chair.

Description: Students pursuing the non-thesis option will complete a master's project as a requirement for the MA. The master's project will consist of a culminating essay or research portfolio in accordance with departmental guidelines.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

WGST 699. Thesis 3-6 Units

Prerequisite(s): Consent of instructor.

For class offerings for a specific term, refer to the Schedule of Classes (<http://htmlaccess.louisville.edu/classSchedule/setupSearchClassSchedule.cfm>)

2019-2020 (<https://catalog.louisville.edu/archive/2019-2020/>) (web)
2019-2020 (http://catalog.louisville.edu/graduate/archive/University_of_Louisville_GRAD_Catalog_2019-2020.pdf) (PDF)
2018-2019 (<https://catalog.louisville.edu/archive/2018-19/>) (web)
2018-2019 (http://catalog.louisville.edu/graduate/archive/2018-2019_grad.pdf) (PDF)

Archived catalogs prior to 2018-2019 are available as PDFs only:

2017-2018 (http://catalog.louisville.edu/graduate/archive/Graduate_Catalog_2017-18.pdf)

2016-2017 (http://catalog.louisville.edu/graduate/archive/Graduate_Catalog_2016-2017.pdf)

2015-2016

2014-2015 (http://catalog.louisville.edu/graduate/archive/Graduate_Catalog_2014-2015.pdf)

2013-2014 (http://catalog.louisville.edu/graduate/archive/Graduate_Catalog_2013-2014.pdf)

2012-2013 (http://catalog.louisville.edu/graduate/archive/Graduate_Catalog_2012-2013.pdf)

2011-2012 (http://catalog.louisville.edu/graduate/archive/Graduate_Catalog_2011-2012.pdf)

2010-2011 (http://catalog.louisville.edu/graduate/archive/Graduate_Catalog_2010-2011.pdf)

2008-2010 (http://catalog.louisville.edu/graduate/archive/Graduate_Catalog_2008-2010.pdf)

2007-2008 (http://catalog.louisville.edu/graduate/archive/Graduate_Catalog_2007-2008.pdf)**

2005-2007 (http://catalog.louisville.edu/graduate/archive/Graduate_Catalog_2005-2007.pdf)

2003-2005 (http://catalog.louisville.edu/graduate/archive/Graduate_Catalog_2003-2005.pdf)

2001-2003 (http://catalog.louisville.edu/graduate/archive/Graduate_Catalog_2001-2003.pdf)

1999-2001 (http://catalog.louisville.edu/graduate/archive/Graduate_Catalog_1999-2001.pdf)

Graduate Catalog Archive



Archived Catalogs

Requests for information from Academic Catalogs published prior to the 2009-10 academic year can be directed to the Registrar's Office by phone at 502-852-6522 or via email to regoff@louisville.edu

The following catalogs contain descriptions of the various policies, graduate programs, degree requirements, and related matters intended to be in effect at the University of Louisville for the indicated catalog year.

2022-2023 (<https://catalog.louisville.edu/archive/2022-2023/>) (web)

2022-2023 (http://catalog.louisville.edu/graduate/archive/22_23_Grad.pdf) (PDF)

2021-2022 (<https://catalog.louisville.edu/archive/2021-2022/>) (web)

2021-2022 (http://catalog.louisville.edu/graduate/archive/2021-2022_Graduate_Catalog.pdf) (PDF)

2020-2021 (<https://catalog.louisville.edu/archive/2020-2021/>) (web)

2020-2021 (http://catalog.louisville.edu/graduate/archive/Graduate_Academic_Catalog_Summer_2020_-_Spring_2021_.pdf) (PDF)

The University of Louisville Graduate Catalog works best with the free Adobe Reader. Get the latest version of Adobe Reader » (<http://www.adobe.com/>).

Printing Tip: Right-click on the section title in the Bookmarks menu (left) of the PDF and click "Print Page(s)" to print only that section. You can also enter the page range in the "Pages to Print" section of the Print dialog.

** Beginning with the 2007-2008 Graduate Catalog, the online catalog is the official version. For years 2005-2007 and earlier, the printed copy of the catalog is the official version.

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