

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

1. 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 [english-test.com/](https://www.english-test.com/) applicants (<https://nam11.safelinks.protection.outlook.com/?url=http%3A%2F%2Fenglish-test.duolingo.com%2Fapplicants&data=04%7C01%7Ccheryl.schroader%40louisville.edu%7C0baa30a62e8345914a7c08d9faf80847%7Cdd246e4a54344e158ae391ad97%7CTWFpbGZsb3d8eyJWljoicjoiMC4wLjAwMDAiLCJQIjoiV2luMzIiLCJBTiI6Ikh1haWV%7C3000&sdata=touQ%2Brap6mVG4VBHkhRok5SfbyjKROnFk0ySeS6clh8%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/isss/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:

1. 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
2. Pairing with other programs to form hybrid or dual science/business or public health degrees, such as an MS/MBA or MS/MPH programs
3. Individuals interested in progressing through management ranks in Pharmacology or biotech businesses
4. The basis for a scientific writing career, when coupled with extensive scientific writing experience or electives
5. 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 of 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 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