

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:

1. Public health knowledge
2. Data warehouse development for health data analytics
3. Health data analytics
4. Translation of data analytics into actionable knowledge

Curriculum

The curriculum has four main components:

1. Public health foundations
2. Principles of data warehouse construction (i.e., creating Big Data from little data)
3. Advanced analytics (i.e., Big Data analytics, data mining)
4. 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)
- Submission of GRE Quantitative and Verbal section scores*
- 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)

* GRE scores may be waived only in cases where other academic credentials establish the ability to succeed in the curriculum, as determined by the program director.

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

Course	Title	Hours
Year 1		
Fall		
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		
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/>).