

DEPARTMENT OF

HEALTH MANAGEMENT & SYSTEMS SCIENCES

Master of Science in Health Data Analytics (MSHDA)

The University of Louisville is a state-supported research university located in Louisville, Kentucky. Louisville provides that small town feel with the big city appeal providing a wide assortment of restaurants, music, art, theater, and sports. Louisville is centrally located to some of the region's largest cities such as Cincinnati, Chicago, and Nashville. In addition, our economy is thriving as indicated by the fact a healthcare company based in Louisville is listed as a Fortune 500 company.

Who we are

The Department of Health Management and Systems Sciences, part of the School of Public Health and Information Sciences, was created to improve the health of the people of the Commonwealth of Kentucky and beyond by developing innovative healthcare leaders and partnering with the community. Our primary aims are to develop, disseminate, and apply evidence-based knowledge about health policymaking, systems design, and quality healthcare delivery.

Career Opportunities

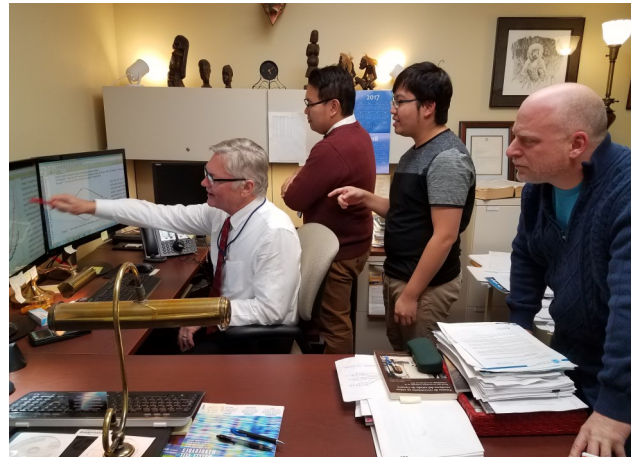
According to the most recent report from the U.S. Bureau of Labor Statistics, employment of computer and information research scientists is projected to grow 19% from 2016 to 2026, much faster than the average for all occupations. In May 2017, the median annual wage was \$114,520. Once students have completed our Master of Science in Health Data Analytics, they are able to enter a variety of health data analytics positions such as: healthcare analytics consultants, big data scientists, clinical analysts, analytics managers, etc. within healthcare, professional services, IT, finance, and insurance.

Format

The program of study in 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. The Master of Science in Health Data Analytics (MSHDA) is a 33-credit hour curriculum designed to be completed in two years. Health Data Analytics courses are offered online only.

**UNIVERSITY OF
LOUISVILLE®**

**SCHOOL OF PUBLIC HEALTH
& INFORMATION SCIENCES**



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).

Admission

The MSHDA 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.

Minimum Requirements

- Recommended minimum 3.0 GPA on a 4.0 scale
- Two current letters of recommendation
- A current curriculum vitae (CV)
- Submission of GRE Quantitative and Verbal sections' scores
- All postsecondary transcripts
- Foreign credential evaluation for each degree not from an accredited U.S. institution
- Statement of goals (i.e., general research interests)
- Admission interview by the HMSS Health Leadership Committee
- 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)

▶ ▶ ▶ [Learn more at louisville.edu/](http://louisville.edu/)

Tuition

Tuition for a full-time student in the Master of Science in Health Data Analytics Program is approximately \$13,500 per year for a Kentucky resident and \$27,500 per year for a non-resident of Kentucky. Get more information about cost at louisville.edu/bursar.

1st Year Master of Science in Health Data Analytics Coursework		
Semester	Course Title	Credit Hours
Fall I	<i>Public Health in the U.S.:</i> Course covers the history of and issues facing public health in the U. S.*	[3]
	<i>Introduction to Statistical Computing:</i> 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.	3
	<i>Biostatistical Methods I:</i> 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.	3
	<i>Biomedical Foundation for Health Data Analytics:</i> This course will offer an integrative molecular and biological perspective on public health problems and health data analytics.	3
	Semester Total	9[12]
Spring I	<i>Statistical Data Management:</i> The course is designed as an introduction to data management and analysis in SAS (Statistical Analysis System) and Stat (Stat Statistical Software).	3
	<i>Data Mining I:</i> 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.	3
	<i>Data Security and Electronic Health Records:</i> 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.	3
	<i>Health Data Analytics Practicum:</i> 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.	3
	Semester Total	12
2nd Year Master of Science in Health Data Analytics Coursework		
Semester	Course Title	Credit Hours
Fall II	<i>Statistical Analysis for Population Health:</i> This course is designed as an introduction to statistical analysis for population health in IBM SPSS Statistics 26.0 software package.	3
	<i>Data Management In Health Service Research:</i> The goal of the course is to build data structure foundations for students in health management emphasizing in health data analytics, the basic skills needed to organize, assess and analyze data sets. The course discusses a variety of tools (file systems, database systems, and the SAS environment) as well as a series of basic tasks, from generating metadata to basic filtering, organizing and enrichment of data sets.	3
	<i>Data Mining II:</i> 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.	3
	<i>MSHDA Capstone Course:</i> This course is an integrative learning experience drawing on all companies presented in the MSHDA program.	3
	Semester Total	12
Degree		33

**Public Health in the U.S.* fulfills the accreditation requirement that all graduates from the School of Public Health and Information Science receive foundational instruction in public health. The 3-credit hours do not accrue toward the 33 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.