DePAUL UNIVERSITY

MASTER OF SCIENCE IN APPLIED STATISTICS

PROGRAM DESCRIPTION

The Master of Science in applied statistics is one of the few evening programs of its kind offered in the Chicago area. The program is designed to provide students with the skills and knowledge they need to start their career and be successful in business, industry or government. The program also provides a solid foundation for students interested in pursuing a PhD in applied statistics, statistics or biostatistics.

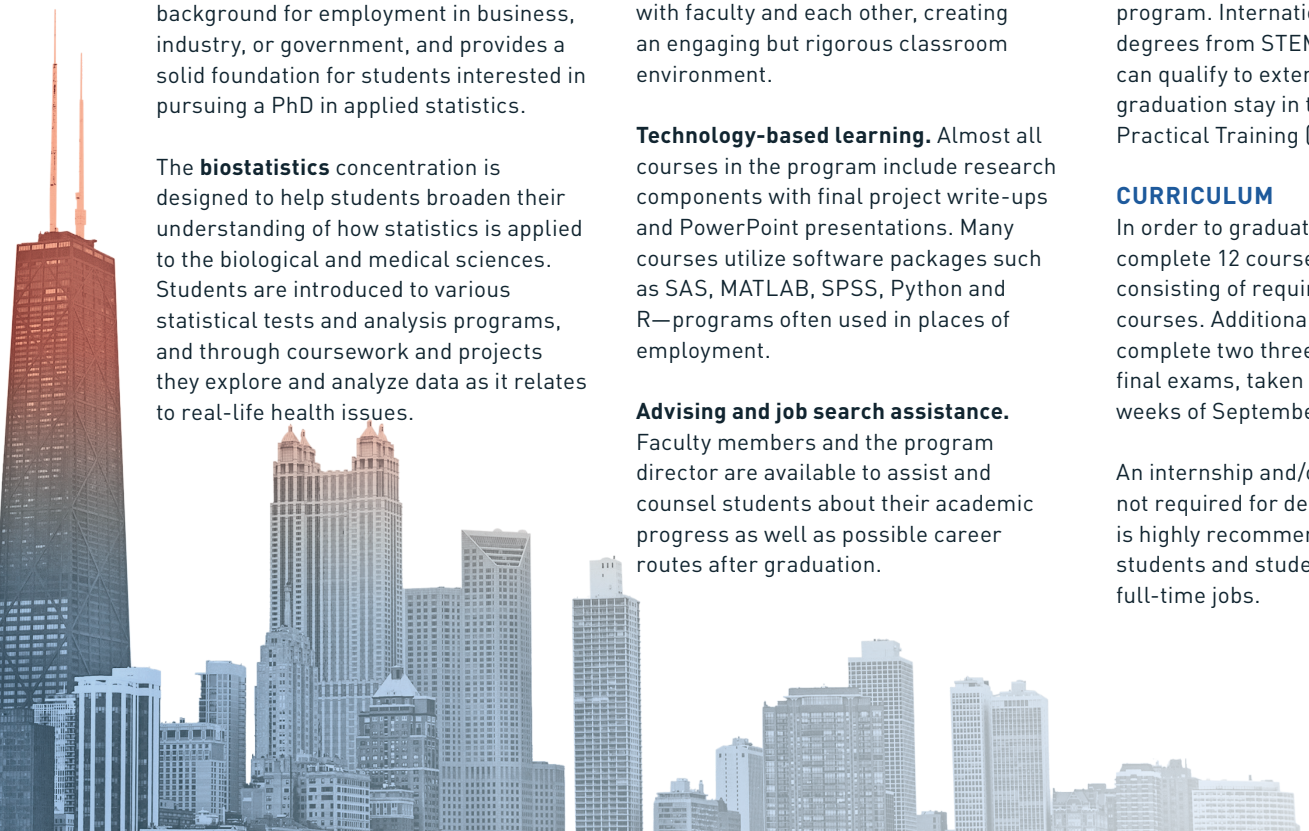
The program is designed for professionals who want to enhance their careers while still holding a full-time job and those who are contemplating a career change. The program also is intended for students whose career goals will be furthered by graduate-level training.

CONCENTRATIONS

The program offers degrees in three areas of concentration: biostatistics, data science, and general applied statistics.

The **general applied statistics** concentration is designed to provide students with the necessary quantitative background for employment in business, industry, or government, and provides a solid foundation for students interested in pursuing a PhD in applied statistics.

The **biostatistics** concentration is designed to help students broaden their understanding of how statistics is applied to the biological and medical sciences. Students are introduced to various statistical tests and analysis programs, and through coursework and projects they explore and analyze data as it relates to real-life health issues.



The biostatistics concentration is appropriate for students who are interested in working for pharmaceutical companies, university research groups, and hospitals or health-related industries.

The **data science** concentration is designed to provide students with computational techniques used by statistical researchers and practitioners beyond standard statistical software packages. Students receive rigorous training in mathematical statistics, applied statistics, statistical computing, programming, and data structure. They also are exposed to various applications of current interest. The program prepares students to apply the latest statistical methods, data analytics, data mining, and machine learning to real-world data sets.

PROGRAM FEATURES

Outstanding faculty. All courses are taught by full-time faculty, many renowned in their field, who consider teaching their primary commitment. Our students are encouraged to interact with faculty and each other, creating an engaging but rigorous classroom environment.

Technology-based learning. Almost all courses in the program include research components with final project write-ups and PowerPoint presentations. Many courses utilize software packages such as SAS, MATLAB, SPSS, Python and R—programs often used in places of employment.

Advising and job search assistance. Faculty members and the program director are available to assist and counsel students about their academic progress as well as possible career routes after graduation.

Post-graduation success. Ninety-three percent of our recent CSH graduates are employed, continuing their education in their field of study or not seeking employment after graduation. For example, graduates have obtained excellent jobs and careers as data quality analysts, finance data analysts, risk analysts, research analysts, and statistical programmers for companies like Allstate, Abbot Laboratories, AbbVie, Chase, Bank of America, Discover Card, Charles Schwab, Goldman Sachs, Humana, Rush University Medical Center, Kraft, Navistar, PepsiCo, as well as the IRS, the State of Illinois and many other notable organizations.

Flexibility. Courses are offered in the evenings to accommodate our students' schedules. Classes are held at the Lincoln Park Campus. Almost all courses integrate the use of technology and software. The program can be completed in two years by taking two classes per quarter.

A STEM designated program. The Master of Science in applied statistics is a STEM program. International students who earn degrees from STEM designated programs can qualify to extend their post-graduation stay in the U.S. for Optional Practical Training (OPT).

CURRICULUM

In order to graduate, students must complete 12 courses (48 quarter hours) consisting of required and elective courses. Additionally, students must complete two three-hour comprehensive final exams, taken during the first two weeks of September and April.

An internship and/or field experience is not required for degree completion, but is highly recommended for international students and students who do not hold full-time jobs.

(over)

DEGREE REQUIREMENTS

Core Courses
(seven courses, 28 quarter hours)

MAT 441 Statistical Data Analysis I
MAT 442 Statistical Data Analysis II
MAT 443 Statistical Data Analysis III
MAT 451 Probability and Statistics I
MAT 452 Probability and Statistics II
MAT 453 Probability and Statistics III
MAT 456 Applied Regression Analysis

Biostatistics Concentration
(three courses, 12 quarter hours)

MAT 421 Basic Biostatistics
MAT 424 Advanced Biostatistics
MAT 425 Survival Analysis

Electives
Choose two

MAT 526 Sampling Theory and Methods
MAT 528 Design and Analysis of Experiments
MAT 454 Multivariate Statistics
MAT 455 Stochastic Processes
MAT 457 Nonparametric Statistics
MAT 459 Simulation Models and Monte Carlo Method
MAT 465 Stochastic Survival Models
MAT 512 Applied Time Series and Forecasting

Data Science Concentration
(four courses, 16 quarter hours)

MAT 449 Statistical Data Management
MAT 450 Advanced Statistical Computing
MAT 491 Data Mining
CSC 555 Mining Big Data

Elective
Choose one

MAT 459 Simulation Models and Monte Carlo Method
MAT 455 Stochastic Processes
MAT 457 Nonparametric Statistics
MAT 454 Multivariate Statistics
MAT 488 Operations Research II: Optimization Theory
MAT 512 Applied Time Series and Forecasting
CSC 465 Data Visualization
CSC 478 Programming Machine Learning Applications
CSC 495 Social Network Analysis
CSC 575 Intelligent Information Retrieval

General Applied Statistics Concentration
(two courses, 8 quarter hours)

MAT 528 Design and Analysis of Experiments
MAT 512 Applied Time Series and Forecasting

Electives
(three courses, 12 quarter hours)
Choose three

MAT 449 Statistical Data Management
MAT 450 Advanced Statistical Computing
MAT 454 Multivariate Statistics
MAT 455 Stochastic Processes
MAT 457 Nonparametric Statistics
MAT 458 Statistical Quality Control
MAT 459 Monte Carlo Simulation Methods
MAT 460 Topics in Statistics (Reliability Theory and Life Testing, Survival Analysis, or Response Surface Methodology or Meta-Analysis)
MAT 489 Topics in Operation Research.
MAT 526 Sampling Theory and Methods
MAT 599 Independent Study
MAT 598 Research

ADMISSION REQUIREMENTS

To be eligible for the applied statistics program, applicants must hold a bachelor's degree conferred by a regionally accredited institution.

It is expected that applicants should have completed the following minimum requirements:

- Single- and Multivariable Calculus (equivalent to MAT 150, 151, 152 and MAT 260)
- Linear Algebra (equivalent to MAT 262)
- A course in Statistics (such as MAT 348)
- A course in scientific computer programming (e.g., courses in Python, Java, C++, etc.)

Applicants who do not have this preparation may be admitted on a conditional basis and should contact the graduate program director to discuss their options.

To apply, please submit the following:

- A completed online application
- Official transcripts from all previous college coursework (minimum GPA of 2.70 on a 4.0 scale)
- A personal statement (200 to 300 words) describing your goals and how they fit with the program you are applying.

Students educated outside of the U.S. must provide a credit evaluation and proof of English proficiency by submitting a TOEFL or IELTS score. Visit the program website or ***go.depaul.edu/cshinternational*** *for more information.*

HOW TO APPLY

Online applications can be submitted at **go.depaul.edu/apply**. Application credentials can be submitted through the online application or by email to graddepaul@depaul.edu. Additionally, official electronic transcripts can be emailed to graddepaul@depaul.edu directly by the issuing institution. Please make sure your name is on all documents.

Transcripts and other required credentials also can be mailed to:

The Office of Graduate Admission
College of Science and Health
DePaul University
2400 N. Sheffield Ave.
Chicago, IL 60614

FOR MORE INFORMATION

Web: go.depaul.edu/appliedstats
Visit: go.depaul.edu/appliedevents
Email: graddepaul@depaul.edu
Phone: (773) 325-7315

If you have questions about this program, please contact the program director, Dr. DeSale Habtzghi at dhabtzgh@depaul.edu or (773) 325-4054.

Please note the information provided is current as of November 2020 and is subject to change.

DEPAUL UNIVERSITY

The Office of Graduate Admission
2400 North Sheffield Avenue
Chicago, Illinois 60614-3936

Telephone: (773) 325-7315
Outside Illinois: (800) 4DEPAUL
Email: graddepaul@depaul.edu
Web: csh.depaul.edu