APPLIED MATHEMATICS (MS)

Program Requirements	Quarter Hours
Core	24-40
Electives	8-24
Degree Requirements	**48 hours**

Learning Outcomes

Students will be able to:

- Demonstrate knowledge of the mathematical basis and foundations of probability and statistics necessary to develop and implement appropriate mathematical models.
- Solve a computational problem by using appropriate numerical and statistical procedures with a focus on accuracy, error control, and efficiency.
- Implement a variety of mathematical and statistical structures to model and analyze complex problems.
- Identify, formulate, abstract, and solve mathematical problems using tools from a variety of mathematical areas including calculus, linear algebra, algebra, analysis, probability, and statistics.
- Use computational and statistical software platforms to develop and execute various mathematical procedures and numerical algorithms.
- Communicate mathematical ideas professionally, in verbal and visual form, by using appropriate terminology and notation.

Degree Requirements

Course Requirements

Candidates for the degree must complete at least 48 quarter hours of graduate level work in applied mathematics.

Concentration Requirement

Applied Mathematics students must choose one concentration: Actuarial Science, Statistics, Applied and Computational Mathematics, or Mathematical Finance.

Computer Usage

The department places strong emphasis on computation and is well supported with equipment and software necessary for research. Computers are used for data analysis and to find solutions to problems that arise in numerical analysis, simulations, and mathematical modeling. The computer packages used in these courses are likely to play an important role in the solution of the problems students will encounter in their places of employment.

Concentration Requirements

Concentrations, tracks and specializations provide focus to the degree. Students may declare at most two concentrations for their MS, provided they successfully complete at least 14 courses as 56 credit hours required for their degree.

In addition to any degree requirements, students are required to choose one of the following:

- Actuarial Science Concentration, Applied Mathematics (MS) (https://catalog.depaul.edu/programs/applied-mathematics-ms/actuarial-science-concentration/)
- Applied and Computational Mathematics Concentration, Applied Mathematics (MS) (https://catalog.depaul.edu/programs/applied-mathematics-ms/applied-computational-mathematics-concentration/)
- Mathematical Finance Concentration, Applied Mathematics (MS) (https://catalog.depaul.edu/programs/applied-mathematics-ms/mathematical-finance-concentration/)
- Statistics Concentration, Applied Mathematics (MS) (https://catalog.depaul.edu/programs/applied-mathematics-ms/statistics-concentration/)

Student Handbook

Academic Probation

A student will be placed on academic probation at the time when his/her cumulative GPA falls below 2.70.

Academic Dismissal

A graduate student may be academically dismissed under one or more of the following violations of satisfactory progress: his/her cumulative GPA remains below 2.70 after one year of coursework while being on academic probation, or lack of progress toward degree completion.

Conditional Admission

Students whose undergraduate degrees were in majors other than mathematics or related fields may be conditionally admitted provided they complete the following minimum prerequisites as conditions: two years of calculus [the equivalent of MAT 150-MAT 152], multivariable calculus and linear algebra [the equivalent of MAT 260-MAT 262], and a course in statistics. Additionally, a course in computer programming is required.

Readmission

The same readmission standards outlined in the Graduate Student Handbook and approval of the program director are observed for students in these programs.

Transfer Credit

No more than two graduate courses (8 quarter credit hours or its semester equivalent) may be transferred from another DePaul program or institution provided that they are equivalent to courses offered in DePaul's graduate program, and they did not count toward another degree either at DePaul or another institution. Written approval must come from graduate program director and associate dean for graduate studies.

Undergraduate Courses

No undergraduate courses shall count toward the graduate degree.

Graduation Requirements

Requirements include, but are not limited to, twelve graduate courses (48 credit hours) at a minimum cumulative GPA of 2.70.

Graduation with Distinction

A minimum cumulative GPA of 3.83 for coursework applied toward the applied mathematics degree is required for graduation with distinction.

Time Limitation

The degree is expected to be completed in a maximum of six years.