MATHMATICAL STATISTICS (M.A.)

Admission Requirements

Admission to this program is contingent upon admission to the Graduate School (http://bulletins.wayne.edu/graduate/general-information/admission).

Except for the program leading to the degree of Master of Arts in Applied Mathematics, the entrance requirements for the master’s programs in mathematics and statistics include successful completion of twelve semester credits in mathematics beyond sophomore calculus (equivalent to MAT 2010, MAT 2020, MAT 2030, MAT 2250, and MAT 2350); this course work should include advanced calculus and linear or modern algebra. Credit accrued in courses such as the history of mathematics or the teaching of mathematics, in which the study of mathematics itself is not the primary purpose will not be counted toward this requirement. As preparation for graduate study, the Department of Mathematics strongly recommends undergraduate course work along the line of option A, described under Bachelor’s Degrees in the undergraduate bulletin.

The Master of Arts in Mathematical Statistics is offered under the following options:

Plan A: Twenty-four credits in course work plus an eight credit thesis in the area of mathematical statistics.

Plan B: Twenty-seven credits in course work plus a three credit essay in the area of mathematical statistics.

Plan C: Thirty credits in course work.

Degree Requirements

At least twenty-four credits in course work from the Department of Mathematics, including credits earned toward a thesis or essay under Plan A or Plan B options.

Select one of the following (if not previously taken):

- MAT 5420  Algebra I
- MAT 5430  and Algebra II
- MAT 7400  Advanced Algebra I

Select one of the following (if not previously taken):

- MAT 5600  Introduction to Analysis I
- & MAT 5610  and Introduction to Analysis II
- MAT 7600  Real Analysis I

Select one of the following (if not previously taken):

- MAT 5700  Introduction to Probability Theory
- & MAT 5710  and Introduction to Stochastic Processes
- MAT 7700  Advanced Probability Theory I

Select one of the following (if not previously taken):

- MAT 5800  Introduction to Mathematical Statistics
- MAT 7810  Advanced Statistics Theory I

Select at least two additional courses of the following: 1

- MAT 5030  Statistical Computing and Data Analysis
- MAT 5770  Mathematical Models in Operations Research
- MAT 5830  Applied Time Series
- MAT 5870  Methods of Optimization

- MAT 6420  Advanced Linear Algebra
- MAT 6600  Complex Analysis
- MAT 6830  Design of Experiments
- MAT 6840  Linear Statistical Models
- MAT 7700  Advanced Probability Theory I
- MAT 7710  Advanced Probability Theory II
- MAT 7810  Advanced Statistics Theory I
- MAT 7820  Advanced Statistics Theory II

1 MAT 7700 is recommended. Other courses may be approved by the Departmental Graduate Committee on an individual basis.

A final oral examination. All students in Plan C are required to take this examination. Students in Plan A or B may, upon recommendation of the thesis or essay adviser, be excused from the final oral examination by the Departmental Graduate Committee.

A public lecture on the thesis or essay for each student in Plan A or Plan B.

By the time twelve credits have been earned, each student must submit a Plan of Work, approved by a departmental adviser, to the director of the program. In the Plan of Work, the student must choose Plan A, Plan B, or Plan C. The Plan of Work must be approved by the Departmental Graduate Committee, at which time the student will be advanced to candidacy. Students are not allowed to take more than twelve credits in the program unless candidacy has been established.

NOTE: Candidates for the Master of Arts in Mathematical Statistics are exempt from the Graduate School requirement that six credits in the major field must be in courses numbered 7000 and above.

NOTE: The following courses cannot be applied towards this degree:

- MAT 5000  Fundamental Concepts of Mathematics and Proof Writing
- MAT 5070  Elementary Concepts of Mathematics and Proof Writing
- MAT 6130  Discrete Mathematics
- MAT 6140  Geometry: An Axiomatic Approach
- MAT 6150  Probability and Statistics for Teachers
- MAT 6170  Algebra: Ring Theory Through Exploration, Conjecture, and Proof
- MAT 6180  Algebra: Group Theory Through Exploration, Conjecture, and Proof
- MAT 6200  Teaching Arithmetic, Algebra and Functions from an Advanced Perspective
- MAT 6210  Teaching Geometry, Probability and Statistics, and Discrete Mathematics from an Advanced Perspective

Academic Scholarship: All course work must be completed in accordance with the regulations of the Graduate School (http://bulletins.wayne.edu/graduate/general-information/academic-regulations) and the College of Liberal Arts and Sciences (http://bulletins.wayne.edu/graduate/college-liberal-arts-sciences/academic-regulations).