**MATHEMATICAL 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 5420 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 3
- MAT 5070 Elementary Analysis 4
- MAT 6130 Discrete Mathematics 3
- MAT 6140 Geometry: An Axiomatic Approach 3
- MAT 6150 Probability and Statistics for Teachers 4
- MAT 6170 Algebra: Ring Theory Through Exploration, Conjecture, and Proof 4
- MAT 6180 Algebra: Group Theory Through Exploration, Conjecture, and Proof 3
- MAT 6200 Teaching Arithmetic, Algebra and Functions from an Advanced Perspective 3
- MAT 6210 Teaching Geometry, Probability and Statistics, and Discrete Mathematics from an Advanced Perspective 3

**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).