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/).

The entrance requirements for the master's program in statistics includes successful completion of course work equivalent to the following:

Code	Title	Credits
Calculus sequence:		
MAT 2010	Calculus I	
MAT 2020	Calculus II	
MAT 2030	Calculus III	
MAT 2250	Elementary Linear Algebra	3
MAT 2150	Differential Equations and Matrix Algebra	4
or MAT 2350	Elementary Differential Equations	
MAT 5070	Elementary Analysis	4
At least 3 more credits in Mathematics at the 5000 level		

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.

Program Requirements

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

Code	Title	Credits
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 5600 & MAT 5610	Introduction to Analysis I and Introduction to Analysis II	
MAT 7600	Real Analysis I	
STA 5030 & STA 5820	Statistical Computing and Data Analysis and Introduction to Data Science	
Select one of the following (if not previously taken):		
MAT 5700 & MAT 5710	Introduction to Probability Theory and Introduction to Stochastic Processes	
MAT 7700	Advanced Probability Theory I	
Select one of the following (if not previously taken):		
STA 5800	Introduction to Mathematical Statistics	
STA 7810	Advanced Statistics Theory I	
Select at least three additional courses of the following: [1]		
STA 5030	Statistical Computing and Data Analysis	
MAT 5100	Numerical Methods I	
MAT 5110	Numerical Methods II	
MAT 5410	Applied Linear Algebra	
MAT 5420	Algebra I	
MAT 5430	Algebra II	
MAT 5540	Topological Data Analysis	
MAT 5600	Introduction to Analysis I	
MAT 5610	Introduction to Analysis II	
MAT 5710	Introduction to Stochastic Processes	
MAT 5750	Mathematics of Finance	
MAT 5770	Mathematical Models in Operations Research	
STA 5820	Introduction to Data Science	
STA 5830	Applied Time Series	
MAT 5870	Methods of Optimization	
MAT 5890	Special Topics in Mathematics [2]	
MAT 6420	Advanced Linear Algebra	
MAT 6600	Complex Analysis	
STA 6830	Design of Experiments	
STA 6840	Applied Regression Analysis	
MAT 7400	Advanced Algebra I	
MAT 7700	Advanced Probability Theory I	
MAT 7770	Special Topics in Probability	
STA 7810	Advanced Statistics Theory I	
STA 7820	Advanced Statistics Theory II	
STA 7870	Topics in Statistics	

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

[2] Topic has to be related to probability or statistics and needs the approval of the Departmental Graduate Committee.

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:

Code	Title	Credits
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/).