MATHEMATICS, M.S.

Program Description

The Master of Science degree in Mathematics is offered by the Department of Mathematics and Physics. This is a two-year program designed to prepare students for positions in industry, government agencies, or business; for further graduate study at the doctoral level; and for teaching positions at the secondary or two-year college level. We also offer an Area of Emphasis in Statistics in the M.S. Mathematics degree program.

Note: An area of emphasis in mathematics, Math through Algebra I, is offered by the M.S. degree programs in Elementary Education and Secondary Education. These programs, which are offered through the College of Education and Professional Development, are intended to meet the needs of public school teachers (K-12).

Admission Requirements

Applicants to the Mathematics program must follow the admissions process described in the Graduate Catalog, or at the Graduate Admissions website at www.marshall.edu/graduate-admissions/ (https://www.marshall.edu/graduate-admissions/).

International applicants should also consult the Office of International Student Services and review the website www.marshall.edu/international-admissions/ (https://www.marshall.edu/international-admissions/).

In addition:

- Applicants must have a Grade Point Average of at least 2.5 on a scale of 4 from the bachelor's degree-granting institution. International applicants should contact the Office of International Student Services to inquire about possible substitute documentation.
- Applicants may optionally report scores from the Graduate Record Examination. Applicants who choose to send scores should send them directly to the Graduate Admissions office.

Deadlines. To ensure full consideration for admission, domestic applicants must ensure that their application materials are received by the Graduate Admissions office no later than August 1 for admission in the fall, and no later than December 1 for admission in the spring. International applicants must ensure that their application materials are received by the Graduate Admissions office no later than June 15, for admission in the fall, and no later than October 15, for admission in the spring. Applicants who apply for a Graduate Assistantship should follow the earlier dates set below in the section Timeframe for Awarding Graduate Assistantships.

Conditional Admission. The Mathematics program may admit applicants conditionally, for one term, pending receipt of required credentials. Applicants whose transcripts do not show coursework equivalent to a bachelor's degree in mathematics may be admitted conditionally and required to take additional foundational courses, which may include undergraduate courses. Applicants who are conditionally admitted are not eligible to receive a Graduate Assistantship, but become eligible when fully admitted.

Provisional Admission. The Mathematics program may admit applicants provisionally, for one term, when the undergraduate Grade Point Average does not meet the requirement for admission.
For more information on the types of admissions, please see www.marshall.edu/graduate-admissions/ (https://www.marshall.edu/graduate-admissions/).

Mathematics Graduate Assistantships and Financial Support
The department offers a limited number of Graduate Assistantships. An applicant wishing to be considered for a Graduate Assistantship must submit a separate application form to the Mathematics Department Graduate Coordinator. This form can be obtained from the Graduate Coordinator or from the Department of Mathematics website at www.marshall.edu/cos/math-physics/ (https://www.marshall.edu/cos/math-physics/).

For complete information on graduate assistantships and other financial support opportunities, please see the Graduate Studies website at www.marshall.edu/graduate/graduate-assistantship-overview/ (https://www.marshall.edu/graduate/graduate-assistantship-overview/).

Additional requirements for Graduate Assistant applications:

- The applicant should arrange for no more than three letters of recommendation supporting the application. Letters may be sent by email or by postal mail directly by the referrers to the Graduate Coordinator, Department of Mathematics and Physics, One John Marshall Drive, Huntington WV 25755.
- The applicant must also submit a personal statement not more than two pages in length. This statement should describe the applicant's background, motivation for studying mathematics, future plans, and any other topics relevant to the applicant's qualifications for a Graduate Assistantship.
- Applicants for a Graduate Assistantship must also apply for a graduate degree program. Graduate Assistantships can only be awarded to students who are accepted in graduate degree programs.
- Applicants may optionally report GRE scores. Scores will be considered as part of the application if they are reported to Marshall University before the application is reviewed.
- A minimum Grade Point Average of at least 2.75 on a scale of 4 from the bachelor's degree granting institution is required.

Timeframe for Awarding Graduate Assistantships. Offers for Graduate Assistantships will be made beginning after May 15, for admission the following fall, and November 15, for admission the following spring. Applicants should ensure their materials are received before these dates to ensure full consideration. Applications received after these dates will be considered until all available Graduate Assistantships are filled.

Program Requirements

The M.S. in Mathematics degree requires 36 credit hours of coursework. The optional Area of Emphasis in Statistics can usually be completed within the same 36 credit hours. In some cases, additional credit hours may be required to fulfill the M.S. in Mathematics degree requirements or the requirements for the Area of Emphasis.

The requirements for the M.S. in Mathematics degree include a 500-level breadth requirement, a 600-level depth requirement, and a comprehensive oral exam or thesis. To ensure that students are on

track to graduate, each student must submit an approved Plan of Study to the Mathematics Graduate Coordinator for approval during the first semester of the M.S. in Mathematics program. Changes to the plan of study must be approved by the Graduate Coordinator.

Breadth requirement (18 hours)
The breadth requirement consists of three sequences, each of which has two courses. All students must take these courses or receive an exemption.

- MTH 527: Advanced Calculus 1 and MTH 528: Advanced Calculus 2
- STA 545: Probability and Statistics 1 and MTH 546: Probability and Statistics 2
- MTH 550: Modern Algebra 1 and MTH 552: Modern Algebra 2 (if not pursuing the Area of Emphasis in Statistics)
- STA 512: Regression Analysis and STA 513: Experimental Design (if pursuing the Area of Emphasis in Statistics)

If a student can demonstrate previous equivalent coursework for one or more of these courses, the Graduate Coordinator may grant exemptions. The department may ask for course syllabi or other information to verify the equivalence.

Exemptions do not change the number of hours required for the degree. Credit hours for the exempted courses become electives. The choice of electives will be made by the student with the approval of the Graduate Coordinator. Electives must be from the MTH and/or STA subject areas, except as described under Graduate Minor. Electives may be at the 500 or 600 level. They may include regular courses, independent study courses, and/or additional thesis credit hours, with the approval of the Graduate Coordinator.

Depth Requirement (18 hours)
For the depth requirement, students must take six courses (18 hours) at the 600 level. The following restrictions apply:

- Independent study courses do not count toward the depth requirement.
- Up to 3 hours of thesis credit may count toward the depth requirement.

The university allows up to 6 hours of thesis credit. Only 3 hours may count towards the depth requirement. Additional thesis credit may count as an elective if the student has exemptions as described under the Sequence Requirement.

Credit hours for MTH 589 (Graduate Mathematics Seminar) do not count towards the 36 hours required for the M.S. in Mathematics degree. A few other graduate mathematics and statistics courses, offered for the benefit of other degree programs, cannot be counted towards the M.S. in Mathematics degree. The Graduate Coordinator can provide information about which courses are suitable for the degree.

Comprehensive Oral Exam or Thesis
Each student must choose to take a comprehensive oral exam or write and defend a master's thesis.

Students who choose to take a comprehensive oral exam will select three 600-level courses from their transcript, with the approval of the Graduate Coordinator. The student Graduate Coordinator will then select a committee of three faculty members to examine the student on the selected courses.

Students who choose to write a master's thesis will work under the guidance of a Thesis Advisor. With the approval of the Thesis Advisor and the Graduate Coordinator, the student will select a committee of at least three graduate faculty, including the Thesis Advisor.

Graduate Minor
Students may take a graduate minor offered by another program and listed in the Graduate Catalog. Up to two 500-level courses from a graduate minor may be used to fill exemptions from the sequence requirement, if the student has exemptions. Additional courses in the graduate minor will increase the number of credit hours required for the degree.

First Year		
First Semester		**Credit Hours**
MTH 527	Advanced Calculus I	3
STA 545	Probability and Statistics I	3
Choice of sequence depends on AoE		3
MTH 550	Modern Algebra I (if not pursuing the AoE in Statistics)	
STA 512	Regression Analysis (if pursuing the AoE in Statistics)	
	Credit Hours	**9**
Second Semester		
MTH 528	Advanced Calculus II	3
STA 546	Probability and Statistics II	3
Choice of sequence depends on AoE		3
MTH 552	Modern Algebra II (if not pursuing the AoE in Statistics)	
STA 513	Experimental Designs (if pursuing the AoE in Statistics)	
	Credit Hours	**9**
Second Year		
First Semester		
600-level depth requirement (3 courses)		9
	Credit Hours	**9**
Second Semester		
600-level depth requirement (3 courses)		9
	Credit Hours	**9**
	Total Credit Hours	**36**

Area of Emphasis

- Statistics, Emphasis (http://catalog.marshall.edu/graduate/programs-az/science/mathematics-ms/statistics-emphasis/)