MATHEMATICS, MS

Banner Code: SC-MS-MATH

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This program provides exciting opportunities for students interested in studying advanced mathematics.

Assistantships

A limited number of merit-based teaching assistantships are available for students taking at least 6 graduate credits each semester. Other sources of support, such as research assistantships, are available as funding permits. Graduate students also have the opportunity to work in the Math Tutoring Center (http://math.gmu.edu/tutor-center.php) and the Math Learning Center (http://math.gmu.edu/math-learning-center.php).

Admissions & Policies

Admissions

University-wide admissions policies can be found in Graduate Admissions Policies.

To apply for this program, please complete the George Mason University Admissions Application (https://www2.gmu.edu/admissions-aid/apply-now).

Applicants interested in this program must submit three letters of recommendation. GRE scores are not required.

Students must have taken an upper-division course in advanced calculus (equivalent to MATH 315 Advanced Calculus I), an abstract algebra course (equivalent to MATH 321 Abstract Algebra) and an upper-division course in linear algebra (equivalent to MATH 322 Advanced Linear Algebra). Students should have some computer knowledge.

Policies

For policies governing all graduate programs, see AP.6 Graduate Policies.

MATH 500 through MATH 614 cannot be used for credit, with the exception of MATH 555 Actuarial Modeling I and MATH 556 Actuarial Modeling II.

Requirements

Degree Requirements

Total credits: 30

Students should refer to the Admissions & Policies tab for specific policies related to this program.

Coursework

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>MATH 675</td>
<td>Linear Analysis</td>
<td>3</td>
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</tbody>
</table>

Coursework Options

Select three from the following:

- MATH 621 Algebra I
- MATH 631 Topology I: Topology of Metric Spaces
- MATH 677 Ordinary Differential Equations
- MATH 685 Numerical Analysis

Additional Approved Coursework

Select four approved graduate courses, at least two of which are MATH courses.1

Total Credits: 24

1. All four courses must be approved by the student's advisor. Courses not listed as MATH courses must be approved by the graduate committee. Different rules apply if the student wishes to count graduate actuarial courses toward his or her degree (consult the graduate coordinator).

Research and Creative Component

A student may fulfill the research and creative component in one of three ways: Thesis Option, Paper Presentation Option, or Preliminary Exams for the PhD.

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<tr>
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<tbody>
<tr>
<td>MATH 799</td>
<td>MS Thesis</td>
<td>6</td>
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</table>

Thesis Option

In preparation for this option, the student must form a committee comprising a chair and two other faculty members. The chair and at least one other member must be from the Department of Mathematical Sciences, one member may be from a related field.

The student completes a thesis under the direction of the committee chair. The thesis work is typically completed while students are registered for 6 credits of MATH 799 MS Thesis. A thesis proposal and thesis are submitted in accordance with AP.6 Graduate Policies. The student must give an oral defense of the thesis to the committee and the George Mason University community at large. Students are expected to respond to questions on the thesis and related material. The committee determines whether the defense is satisfactory.

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Paper Presentation Option

In preparation for this option, the student must form a committee comprising a chair and two other faculty members. The chair and at least one other member must be from the Department of Mathematical Sciences, one member may be from a related field. The student gives an
Mathematics and Statistical Science Dual-Degree MS

This program allows students to earn an MS in Mathematics and an MS in Statistical Science by completing 48 credits of coursework in both areas instead of the 60 that would be required if the degrees were sought independently.

Admission Requirements

Applicants must satisfy admission requirements for both the MS in Mathematics and the MS in Statistical Science programs. A joint faculty committee from the Department of Mathematical Sciences and the Department of Statistics make final admission decisions into the dual-degree program.

MS-MATH/STAT Dual-Degree Requirements

Total credits: 48

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<td>Algebra I</td>
<td>3</td>
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<tr>
<td>MATH 675</td>
<td>Linear Analysis</td>
<td>3</td>
</tr>
<tr>
<td>MATH 677</td>
<td>Ordinary Differential Equations</td>
<td>3</td>
</tr>
<tr>
<td>or MATH 678</td>
<td>Partial Differential Equations</td>
<td></td>
</tr>
<tr>
<td>MATH 685</td>
<td>Numerical Analysis</td>
<td>3</td>
</tr>
<tr>
<td>STAT 544</td>
<td>Applied Probability</td>
<td>3</td>
</tr>
<tr>
<td>STAT 554</td>
<td>Applied Statistics I</td>
<td>3</td>
</tr>
<tr>
<td>STAT 634</td>
<td>Case Studies in Data Analysis</td>
<td>3</td>
</tr>
<tr>
<td>STAT 652</td>
<td>Statistical Inference</td>
<td>3</td>
</tr>
<tr>
<td>STAT 654</td>
<td>Applied Statistics II</td>
<td>3</td>
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Total Credits: 27

Electives

Select 6 additional credits of electives

Total Credits: 6

Preliminary Exams for the PhD

The research and creative component can also be fulfilled by passing three preliminary written examinations, as required for the Mathematics, PhD degree.

Accelerated Master's

Mathematics, BA or BS/Mathematics, Accelerated MS

Overview

This degree program allows academically strong Mathematics, BA and Mathematics, BS students to obtain their bachelor's and a Mathematics, MS by successfully completing 144 credits. Well-prepared students may be admitted to this program after the completion of 90 undergraduate credits. Upon completion and conferral of the bachelor's degree and with satisfactory graduate-level performance (3.00 GPA) in graduate courses, students are given advanced standing in the Mathematics, MS program and complete an additional 24 credits to receive the master's degree.

For more detailed information, see AP6.7 Bachelor's/Accelerated Master's Degrees. For policies governing all graduate degrees, see AP6 Graduate Policies.

Application Requirements

Applicants to all graduate programs at George Mason University must meet the admission standards and application requirements for graduate study as specified in Graduate Admission Policies. Application information for this accelerated master's program can be found on the Department of Mathematical Sciences website (http://math.gmu.edu/).

Successful applicants will have an overall undergraduate GPA of at least 3.00. Additionally, they will have completed the following courses with a GPA of 3.00 or higher: MATH 315 Advanced Calculus I, MATH 321 Abstract Algebra, and MATH 322 Advanced Linear Algebra.

Accelerated Option Requirements

At the beginning of the student's final undergraduate semester, students must submit a bachelor's/accelerated master's transition form (available from the Office of the University Registrar (http://registrar.gmu.edu)) to the College of Science's Office of Academic and Student Affairs (https://cos.gmu.edu/about/contact-us). Students must begin their
master's program in the semester immediately following conferral of the bachelor's degree.

Students must maintain an overall GPA of 3.00 or higher in graduate coursework.

**Reserve Graduate Credit**

While still in undergraduate status, a maximum of 6 additional graduate credits may be taken as reserve graduate credit and applied to the master's program. Reserve graduate credits do not apply to the undergraduate degree. See AP.1.4.4 Graduate Course Enrollment by Undergraduates.