MATHEMATICS: FOUNDATIONS OF ADVANCED STUDIES, M.A.

This is a named option within the Mathematics M.A. It is designed to strengthen the student’s mathematics background and enhance the opportunities for applications to Ph.D. programs and for employment as a mathematician in nonacademic environments.

ADMISSIONS

Please consult the table below for key information about this degree program’s admissions requirements. The program may have more detailed admissions requirements, which can be found below the table or on the program’s website.

Graduate admissions is a two-step process between academic programs and the Graduate School. Applicants must meet the minimum requirements (https://grad.wisc.edu/apply/requirements/) of the Graduate School as well as the program(s). Once you have researched the graduate program(s) you are interested in, apply online (https://grad.wisc.edu/apply/).

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall Deadline</td>
<td>February 15</td>
</tr>
<tr>
<td>Spring Deadline</td>
<td>October 15</td>
</tr>
<tr>
<td>Summer Deadline</td>
<td>The program does not admit in the summer.</td>
</tr>
<tr>
<td>GRE (Graduate Record Examinations)</td>
<td>Not required but may be considered if available.</td>
</tr>
<tr>
<td>English Proficiency Test</td>
<td>Every applicant whose native language is not English or whose undergraduate instruction was not in English must provide an English proficiency test score and meet the Graduate School minimum requirements (<a href="https://grad.wisc.edu/apply/requirements/english-proficiency">https://grad.wisc.edu/apply/requirements/english-proficiency</a>).</td>
</tr>
<tr>
<td>Other Test(s) (e.g., GMAT, MCAT)</td>
<td>The GRE subject test in Mathematics or another science is recommended.</td>
</tr>
<tr>
<td>Letters of Recommendation Required</td>
<td>3</td>
</tr>
</tbody>
</table>

Admission is competitive. Applicants to the Ph.D. program are automatically considered for financial support. For more information about application to the Ph.D. and M.A. programs, see the department’s admission website (https://www.math.wisc.edu/graduate/admissions/).

FUNDING

GRADUATE SCHOOL RESOURCES

Resources to help you afford graduate study might include assistantships, fellowships, traineeships, and financial aid. Further funding information (https://grad.wisc.edu/funding/) is available from the Graduate School. Be sure to check with your program for individual policies and restrictions related to funding.

PROGRAM RESOURCES

The Department of Mathematics cannot provide financial support for the Master’s–Foundations of Advanced Studies Degree program.

Students enrolled in this program are not eligible to receive tuition remission from graduate assistantship appointments at this institution.

REQUIREMENTS

MINIMUM GRADUATE SCHOOL REQUIREMENTS

Review the Graduate School minimum academic progress and degree requirements (http://guide.wisc.edu/graduate/#policiesandrequirementstext), in addition to the program requirements listed below.

NAMED OPTION REQUIREMENTS

MODE OF INSTRUCTION

<table>
<thead>
<tr>
<th>Mode of Instruction Definitions</th>
<th>Detail</th>
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</thead>
<tbody>
<tr>
<td>Accelerated:</td>
<td>Accelerated programs are offered at a fast pace that condenses the time to completion. Students are able to complete a program with minimal disruptions to careers and other commitments.</td>
</tr>
<tr>
<td>Evening/Weekend:</td>
<td>Courses meet on the UW–Madison campus only in evenings and/or on weekends to accommodate typical business schedules. Students have the advantages of face-to-face courses with the flexibility to keep work and other life commitments.</td>
</tr>
<tr>
<td>Face-to-Face:</td>
<td>Courses typically meet during weekdays on the UW-Madison Campus.</td>
</tr>
<tr>
<td>Hybrid:</td>
<td>These programs combine face-to-face and online learning formats. Contact the program for more specific information.</td>
</tr>
<tr>
<td>Online:</td>
<td>These programs are offered 100% online. Some programs may require an on-campus orientation or residency experience, but the courses will be facilitated in an online format.</td>
</tr>
</tbody>
</table>

CURRICULAR REQUIREMENTS

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Detail</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Credit</td>
<td>30 credits</td>
</tr>
<tr>
<td>Minimum Residence Credit Requirement</td>
<td>16 credits</td>
</tr>
<tr>
<td>Minimum Graduate Coursework</td>
<td>All credits must be graduate-level coursework. Details can be found in the Graduate School’s Minimum Graduate Coursework (50%) policy (<a href="https://policy.wisc.edu/library/UW-1244/">https://policy.wisc.edu/library/UW-1244/</a>).</td>
</tr>
</tbody>
</table>
Overall Graduate GPA Requirement: 3.00 GPA required. This program follows the Graduate School’s GPA Requirement policy (https://policy.wisc.edu/library/UW-1203).

Other Grade Requirements: None.

Assessments and Examinations: None.

Language Requirements: No language requirements.

REQUIRED COURSES

|| Code | Title | Credits |
|---|---|---|
| Required Courses: | | |
| These courses must be taken by all students, except when it is determined by the director of graduate studies that equivalent courses were taken prior to entering the program. | | |
| MATH 522 | Analysis II | 3 |
| MATH 542 | Modern Algebra | 3 |
| Basic Electives: | | |
| All other 500-level and all 600-level courses in Mathematics may be taken as elective courses. Currently the following courses are available. Select four of the following: | | |
| MATH/COMP SCI 513 | Numerical Linear Algebra | |
| MATH/COMP SCI 514 | Numerical Analysis | |
| MATH 519 | Ordinary Differential Equations | |
| MATH/ISY/E/STAT 525 | Linear Optimization | |
| MATH 531 | Probability Theory | |
| MATH 552 | Elementary Geometric and Algebraic Topology | |
| MATH 561 | Differential Geometry | |
| MATH 567 | Modern Number Theory | |
| MATH/PHILOS 571 | Mathematical Logic | |
| MATH 605 | Stochastic Methods for Biology | |
| MATH 608 | Mathematical Methods for Physical Modeling in Biology | |
| MATH/B M I/ BIOCHEM/ BMOLCHEM 609 | Mathematical Methods for Systems Biology | |
| MATH 619 | Analysis of Partial Differential Equations | |
| MATH 621 | Analysis III | |
| MATH 623 | Complex Analysis | |
| MATH 627 | Introduction to Fourier Analysis | |
| MATH 629 | Introduction to Measure and Integration | |
| MATH/ISY/E/OTM/STAT 632 | Introduction to Stochastic Processes | |
| MATH 635 | An Introduction to Brownian Motion and Stochastic Calculus | |
| MATH/ECE 641 | Introduction to Error-Correcting Codes | |

Advanced Electives:

All 700 level courses in Mathematics may be taken as elective courses. Students must pass at least four of the following core graduate courses with a Grade of B or higher. Select four of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>MATH 703</td>
<td>Methods of Applied Mathematics 1</td>
</tr>
<tr>
<td>MATH 704</td>
<td>Methods of Applied Mathematics 2</td>
</tr>
<tr>
<td>MATH/COMP SCI 714</td>
<td>Mathematics I</td>
</tr>
<tr>
<td>MATH/COMP SCI 715</td>
<td>Mathematics II</td>
</tr>
<tr>
<td>MATH 721</td>
<td>A First Course in Real Analysis</td>
</tr>
<tr>
<td>MATH 722</td>
<td>Complex Analysis</td>
</tr>
<tr>
<td>MATH 725</td>
<td>A Second Course in Real Analysis</td>
</tr>
<tr>
<td>MATH/STAT 733</td>
<td>Theory of Probability I</td>
</tr>
<tr>
<td>MATH/STAT 734</td>
<td>Theory of Probability II</td>
</tr>
<tr>
<td>MATH 741</td>
<td>Abstract Algebra</td>
</tr>
<tr>
<td>MATH 742</td>
<td>Abstract Algebra</td>
</tr>
<tr>
<td>MATH 751</td>
<td>Introductory Topology I</td>
</tr>
<tr>
<td>MATH 752</td>
<td>Introductory Topology II</td>
</tr>
<tr>
<td>MATH 761</td>
<td>Differentiable Manifolds</td>
</tr>
<tr>
<td>MATH 770</td>
<td>Foundations of Mathematics</td>
</tr>
<tr>
<td>MATH 771</td>
<td>Set Theory</td>
</tr>
<tr>
<td>MATH 773</td>
<td>Computability Theory</td>
</tr>
<tr>
<td>MATH 776</td>
<td>Model Theory</td>
</tr>
</tbody>
</table>

Total Credits: 30

Students in this program may not take courses outside the prescribed curriculum without faculty advisor and program director approval. Students in this program cannot enroll concurrently in other undergraduate, graduate or certificate programs.

POLICIES

GRADUATE SCHOOL POLICIES

The Graduate School’s Academic Policies and Procedures (https://grad.wisc.edu/acadpolicy/) provide essential information regarding general university policies. Program authority to set degree policies beyond the minimum required by the Graduate School lies with the degree program faculty. Policies set by the academic degree program can be found below.

NAMED OPTION-SPECIFIC POLICIES

PRIOR COURSEWORK

Graduate Work from Other Institutions

Students in the M.A. program are allowed to count no more than 14 credits of graduate coursework from other institutions. Coursework earned five or more years prior to admission to a master’s degree is not allowed to satisfy requirements.
UW–Madison Undergraduate
This program follows the Graduate School's policy for Satisfying Requirements with Coursework from Undergraduate Career at UW–Madison. (https://policy.wisc.edu/library/UW-1216/)

UW–Madison University Special
This program follows the Graduate School's policy for Transfer from UW–Madison University Special Student Career at UW–Madison. (https://policy.wisc.edu/library/UW-1216/)

PROBATION
This program follows the Graduate School's Probation policy. (https://policy.wisc.edu/library/UW-1217/)

ADVISOR / COMMITTEE
Students are recommended to meet with an advisor.

CREDITS PER TERM ALLOWED
15 credits

TIME CONSTRAINTS
Two years. Extensions have to be approved by the program.

Otherwise, this program follows the Graduate School's Time Limits policy. (https://policy.wisc.edu/library/UW-1221/)

GRIEVANCES AND APPEALS
These resources may be helpful in addressing your concerns:

- Bias or Hate Reporting (https://doso.students.wisc.edu/bias-or-hate-reporting/)
- Graduate Assistantship Policies and Procedures (https://hr.wisc.edu/policies/gapp/#grievance-procedure)
- Hostile and Intimidating Behavior Policies and Procedures (https://hr.wisc.edu/hib/)
  - Office of the Provost for Faculty and Staff Affairs (https://facstaff.provost.wisc.edu/)
  - Dean of Students Office (https://doso.students.wisc.edu/) (for all students to seek grievance assistance and support)
  - Employee Assistance (http://www.eao.wisc.edu/) (for personal counseling and workplace consultation around communication and conflict involving graduate assistants and other employees, post-doctoral students, faculty and staff)
  - Employee Disability Resource Office (https://employeedisabilities.wisc.edu/) (for qualified employees or applicants with disabilities to have equal employment opportunities)
  - Graduate School (https://grad.wisc.edu/) (for informal advice at any level of review and for official appeals of program/departmental or school/college grievance decisions)
  - Office of Compliance (https://compliance.wisc.edu/) (for class harassment and discrimination, including sexual harassment and sexual violence)
  - Office of Student Conduct and Community Standards (https://conduct.students.wisc.edu/) (for conflicts involving students)
  - Ombuds Office for Faculty and Staff (http://www.ombuds.wisc.edu/) (for employed graduate students and post-docs, as well as faculty and staff)
  - Title IX (https://compliance.wisc.edu/titleix/) (for concerns about discrimination)

Students should contact the department chair or program director with questions about grievances. They may also contact the L&S Academic Divisional Associate Deans, the L&S Associate Dean for Teaching and Learning Administration, or the L&S Director of Human Resources.

OTHER
The Department of Mathematics cannot provide financial support for students in the Master's Degree–Foundations of Advanced Studies program.

PROFESSIONAL DEVELOPMENT
GRADUATE SCHOOL RESOURCES
Take advantage of the Graduate School's professional development resources (https://grad.wisc.edu/pd/) to build skills, thrive academically, and launch your career.

PEOPLE