Mathematics, M.A.

Ph.D. students in the math department and students enrolled in other UW Ph.D. programs are eligible to earn an M.A. degree in Mathematics.

The M.A. degree is available with the named option titled Foundations of Advanced Studies (FAS) ([http://guide.wisc.edu/graduate/mathematics/mathematics-ma/mathematics-foundations-advanced-studies-ma](http://guide.wisc.edu/graduate/mathematics/mathematics-ma/mathematics-foundations-advanced-studies-ma)). 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

The M.A. (no named option) is offered for work leading to the Ph.D. Students may not apply directly for the master's, and should instead see the admissions information for the Ph.D ([http://guide.wisc.edu/graduate/mathematics/mathematics-phd](http://guide.wisc.edu/graduate/mathematics/mathematics-phd)).

Students may also apply to the M.A. Named Option in Foundations of Advanced Studies ([http://guide.wisc.edu/graduate/mathematics/mathematics-ma/mathematics-foundations-advanced-studies-ma](http://guide.wisc.edu/graduate/mathematics/mathematics-ma/mathematics-foundations-advanced-studies-ma)).

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](https://grad.wisc.edu/funding)) is available from the Graduate School. Be sure to check with your program for individual policies and processes related to funding.

Requirements

Minimum Graduate School Requirements

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

Major Requirements

Mode of Instruction

<table>
<thead>
<tr>
<th>Face to Face</th>
<th>Evening/Weekend</th>
<th>Online</th>
<th>Hybrid</th>
<th>Accelerated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
</tbody>
</table>

Mode of Instruction Definitions

Evening/Weekend: These programs are offered in an evening and/or weekend format to accommodate working schedules. Enjoy the advantages of on-campus courses and personal connections, while keeping your day job. For more information about the meeting schedule of a specific program, contact the program.

Online: These programs are offered primarily online. Many available online programs can be completed almost entirely online with all online programs offering at least 50 percent or more of the program work online. Some online programs have an on-campus component that is often designed to accommodate working schedules.

Take advantage of the convenience of online learning while participating in a rich, interactive learning environment. For more information about the online nature of a specific program, contact the program.

Hybrid: These programs have innovative curricula that combine on-campus and online formats. Most hybrid programs are completed on-campus with a partial or completely online semester. For more information about the hybrid schedule of a specific program, contact the program.

Accelerated: These on-campus programs are offered in an accelerated format that allows you to complete your program in a condensed time-frame. Enjoy the advantages of on-campus courses with minimal disruption to your career. For more information about the accelerated nature of a specific program, contact the program.

Curricular Requirements

<table>
<thead>
<tr>
<th>Minimum Credit Requirement</th>
<th>30 credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Residence Credit Requirement</td>
<td>16 credits</td>
</tr>
<tr>
<td>Minimum Graduate Coursework Requirement</td>
<td>The coursework must consist of graduate-level coursework; courses with the Graduate Level Coursework attribute are identified and searchable in the university's Course Guide (<a href="https://registrar.wisc.edu/course-guide/">https://registrar.wisc.edu/course-guide/</a>).</td>
</tr>
<tr>
<td>Overall Graduate GPA Requirement</td>
<td>3.00 GPA required.</td>
</tr>
<tr>
<td>Other Grade Requirements</td>
<td>At least 12 credits from a specified list of 700 courses are required to be passed with grade B or higher.</td>
</tr>
<tr>
<td>Assessments and Examinations</td>
<td>None.</td>
</tr>
<tr>
<td>Language Requirements</td>
<td>No language requirements.</td>
</tr>
</tbody>
</table>

Required Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Core Courses: ¹</td>
<td>Select four of the following:</td>
<td></td>
</tr>
<tr>
<td>MATH 703</td>
<td>Methods of Applied Mathematics 1</td>
<td></td>
</tr>
<tr>
<td>MATH 704</td>
<td>Methods of Applied Mathematics-2</td>
<td></td>
</tr>
<tr>
<td>MATH/COMP SCI 714</td>
<td>Methods of Computational Mathematics I</td>
<td></td>
</tr>
<tr>
<td>MATH/COMP SCI 715</td>
<td>Methods of Computational Mathematics II</td>
<td></td>
</tr>
<tr>
<td>MATH 721</td>
<td>A First Course in Real Analysis</td>
<td></td>
</tr>
<tr>
<td>MATH 722</td>
<td>Complex Analysis</td>
<td></td>
</tr>
<tr>
<td>MATH 725</td>
<td>A Second Course in Real Analysis</td>
<td></td>
</tr>
<tr>
<td>MATH/STAT 733</td>
<td>Theory of Probability I</td>
<td></td>
</tr>
<tr>
<td>MATH/STAT 734</td>
<td>Theory of Probability II</td>
<td></td>
</tr>
<tr>
<td>MATH 741</td>
<td>Abstract Algebra</td>
<td></td>
</tr>
<tr>
<td>MATH 742</td>
<td>Abstract Algebra</td>
<td></td>
</tr>
<tr>
<td>MATH 751</td>
<td>Introductory Topology I</td>
<td></td>
</tr>
<tr>
<td>MATH 752</td>
<td>Introductory Topology II</td>
<td></td>
</tr>
<tr>
<td>MATH 761</td>
<td>Differentiable Manifolds</td>
<td></td>
</tr>
<tr>
<td>MATH 770</td>
<td>Foundations of Mathematics</td>
<td></td>
</tr>
</tbody>
</table>

¹ Select four of the following:
Mathematics, M.A.

MATH 771 Set Theory
MATH 773 Computability Theory
MATH 776 Model Theory

(ii) Four Mathematics courses at 600 level or above passed with a grade of B or higher 1, 2 12
(iii) Electives (500 level or above) 6
(iv) Advanced Computer Science Course:

Students must complete an advanced computer science course which involves substantial programming. Other courses require prior approval of the director of graduate studies. This requirement is waived for Math Ph.D. students, provided two qualifying exams have been passed.

COMP SCI 400 Programming III
COMP SCI 536 Introduction to Programming Languages and Compilers
COMP SCI 537 Introduction to Operating Systems
COMP SCI 564 Database Management Systems: Design and Implementation
COMP SCI 704 Principles of Programming Languages
COMP SCI/ MATH 714 Methods of Computational Mathematics I
COMP SCI/ MATH 715 Methods of Computational Mathematics II
COMP SCI/ I SY E 719 Stochastic Programming
COMP SCI/I SY E/ MATH 730 Nonlinear Optimization II

Total Credits 30

1 Students must pass with a grade of B or higher.
2 The graduate advisor may also approve to have courses at the 500 level counted for this requirement (but typically no introductory courses such as MATH 521 Analysis I, MATH 541 Modern Algebra or MATH 551 Elementary Topology).

30 graduate credits related to mathematics, including at least 24 credits in the mathematics department (cross-listed courses included). At least 12 credits from a specified list of 700 core courses must be taken.

NAMED OPTIONS (SUB-MAJORS)

A named option is a formally documented sub-major within an academic major program. Named options appear on the transcript with degree conferral.


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.

MAJOR-SPECIFIC POLICIES

GRADUATE PROGRAM HANDBOOK

The Graduate Program Handbook (https://www.math.wisc.edu/graduate_gsh_toc) is the repository for all of the program’s policies and requirements.

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

No more than 7 credits from a UW–Madison undergraduate degree are allowed to count toward the degree. Coursework earned five or more years prior to admission to a master's degree is not allowed to satisfy requirements.

UW–Madison University Special

With program approval, students are allowed to count no more than 15 credits of coursework numbered 300 or above taken as a UW–Madison Special student. Coursework earned five or more years prior to admission to a master's degree is not allowed to satisfy requirements.

PROBATION

The Graduate School regularly reviews the record of any student who earned grades of BC, C, D, F, or Incomplete in a graduate course (300 or above), or grade of U in research credits. This review could result in academic probation with a hold on future enrollment or in being suspended from the Graduate School.

1. Good standing (progressing according to standards; any funding guarantee remains in place).
2. Probation (not progressing according to standards but permitted to enroll; loss of funding guarantee; specific plan with dates and deadlines in place in regard to removal of probationary status).
3. Unsatisfactory progress (not progressing according to standards; not permitted to enroll, dismissal, leave of absence or change of advisor or program).

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.

Master's degree students who have been absent for five or more consecutive years lose all credits that they have earned before their absence. Individual programs may count the coursework students completed prior to their absence for meeting program requirements;
that coursework may not count toward Graduate School credit requirements.

OTHER
n/a

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.

LEARNING OUTCOMES

1. Learn a substantial body of mathematics presented in introductory graduate level courses in mathematics.
2. Select and utilize appropriate methodologies to solve problems.
3. Communicate clearly in written/oral presentations.
4. Recognize and apply principles of ethical and professional conduct.

PEOPLE

Faculty: Professors Anderson, Angenent, Arinkin, Assadi, Bolotin, Boston, Căldăraru, Craciun, Denissov, Ellenberg, Feldman, Gong, Jin, Lempp, Mari Beffa (chair), Maxim, Miller, Mitchell, Paul, Roch, Seeger, Seppäläinen, Smith, Terwilliger, Thiffeault, Valko, Waleffe, M. Wood, Yang; Associate Professors Dymarz, Gurevich, Kent, Stechmann, Street, Yin; Assistant Professors Andrews, Erman, Ifrim, Kim, Li, Marshall, Sam, Soskova, Spagnolie, Stovall, Tran, Bi. Wang, Bo. Wang, L. Wang, P. Wood; Affiliate Faculty Bach, Cai, Del Pia, Ferris, Ron, Sifakis.