

MATHEMATICS: FOUNDATIONS OF ADVANCED STUDIES, MA

This is a named option within the Mathematics MA. It is designed to strengthen the student's mathematics background and enhance the opportunities for applications to PhD programs and for employment as a mathematician in nonacademic environments.

ADMISSIONS

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/>).

Requirements	Detail
Fall Deadline	March 15
Spring Deadline	November 1
Summer Deadline	The program does not admit in the summer.
GRE (Graduate Record Examinations)	Not required but may be considered if available.
English Proficiency Test	Refer to the Graduate School: Minimum Requirements for Admission policy: https://policy.wisc.edu/library/UW-1241 (https://policy.wisc.edu/library/UW-1241/).
Other Test(s) (e.g., GMAT, MCAT)	The GRE subject test in Mathematics is not required but may be considered if available.
Letters of Recommendation Required	3

Admission is competitive. For more information about application to the MA program, see the department's admission website (<https://math.wisc.edu/graduate/master-of-arts-foundation-of-studies/applying-for-ma-fas/>).

FUNDING

FUNDING

GRADUATE SCHOOL RESOURCES

The Bursar's Office provides information about tuition and fees associated with being a graduate student. Resources to help you afford graduate

study might include assistantships, fellowships, traineeships, and financial aid. Further funding information 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 degree requirements (<https://guide.wisc.edu/graduate/#requirementstext>) and policies (<https://guide.wisc.edu/graduate/#policiestext>), in addition to the program requirements listed below.

NAMED OPTION REQUIREMENTS

MODE OF INSTRUCTION

Face to Face	Evening/ Weekend	Online	Hybrid	Accelerated
Yes	No	No	No	Yes

Mode of Instruction Definitions

Accelerated: Accelerated programs are offered at a fast pace that condenses the time to completion. Students typically take enough credits aimed at completing the program in a year or two.

Evening/Weekend: 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.

Face-to-Face: Courses typically meet during weekdays on the UW–Madison Campus.

Hybrid: These programs combine face-to-face and online learning formats. Contact the program for more specific information.

Online: 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.

CURRICULAR REQUIREMENTS

Requirement Detail	
Minimum Credit Requirement	30 credits
Minimum Residence Credit Requirement	16 credits

Minimum Graduate Coursework Requirement	30 credits must be graduate-level coursework. Refer to the Graduate School: Minimum Graduate Coursework (50%) Requirement policy: https://policy.wisc.edu/library/UW-1244 (https://policy.wisc.edu/library/UW-1244/).
Overall Graduate GPA Requirement	3.00 GPA required. Refer to the Graduate School: Grade Point Average (GPA) Requirement policy: https://policy.wisc.edu/library/UW-1203 (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
Core		
These courses must be taken by all students, except when it is determined by the director of the program that equivalent courses were taken prior to entering the program.		
MATH 522	Analysis II	3
MATH 542	Modern Algebra	3
Basic Electives:		
FOUR courses numbered 500 or above in Mathematics may be taken as basic elective courses, including up to three credits of MATH 698 or MATH 790. Excludes courses counted toward another requirement. Excludes MATH 521, 522, 541, 542, 607, 681, 682, 691, 692, 790.		12
MATH/COMP SCI 513	Numerical Linear Algebra	
MATH/COMP SCI 514	Numerical Analysis	
MATH 519	Ordinary Differential Equations	
MATH/COMP SCI/I SY E/STAT 525	Linear Optimization	
MATH 531	Probability Theory	
MATH 535	Mathematical Methods in Data Science	
MATH 551	Elementary Topology	
MATH 552	Elementary Geometric and Algebraic Topology	
MATH 561	Differential Geometry	
MATH 567	Modern Number Theory	
MATH/PHILOS 571	Mathematical Logic	
MATH 570	Fundamentals of Set Theory	
MATH/B M I/BIOCHEM/BMOLCHEM 609	Mathematical Methods for Systems Biology	
MATH 616	Data-Driven Dynamical Systems, Stochastic Modeling and Prediction	
MATH 619	Analysis of Partial Differential Equations	

MATH 621	Introduction to Manifolds
MATH 623	Complex Analysis
MATH 627	Introduction to Fourier Analysis
MATH 629	Introduction to Measure and Integration
MATH/I SY E/OTM/STAT 632	Introduction to Stochastic Processes
MATH 635	An Introduction to Brownian Motion and Stochastic Calculus
MATH 698	Directed Study
MATH 705	Mathematical Fluid Dynamics
MATH/STAT 709	Mathematical Statistics I
MATH/STAT 710	Mathematical Statistics II
MATH 716	Ordinary Differential Equations
MATH 718	Randomized Linear Algebra and Applications
MATH/COMP SCI/I SY E/STAT 726	Nonlinear Optimization I
MATH/COMP SCI/I SY E 728	Integer Optimization
MATH/COMP SCI/I SY E 730	Nonlinear Optimization II
MATH 735	Stochastic Analysis
MATH 740	Enumerative Combinatorics/Symmetric Functions
MATH 746	Topics in Ring Theory
MATH 747	Lie Algebras
MATH 748	Algebraic Number Theory
MATH 749	Analytic Number Theory
MATH 750	Homological Algebra
MATH 753	Algebraic Topology I
MATH 763	Introduction to Algebraic Geometry
MATH 764	Introduction to Algebraic Geometry
MATH 765	Differential Geometry
MATH 790	Masters Thesis
Advanced Electives:	
FOUR courses numbered 700 or above in Mathematics listed below may be taken as advanced elective courses.	
MATH 703	Methods of Applied Mathematics 1
MATH 704	Methods of Applied Mathematics-2
MATH/COMP SCI 714	Methods of Computational Mathematics I
MATH/COMP SCI 715	Methods of Computational Mathematics II
MATH 719	Partial Differential Equations
MATH 717	Stochastic Computational Methods
MATH 720	Partial Differential Equations
MATH 721	A First Course in Real Analysis
MATH 722	Complex Analysis
MATH 725	A Second Course in Real Analysis
MATH/STAT 733	Theory of Probability I

MATH/STAT 734	Theory of Probability II
MATH 741	Abstract Algebra
MATH 742	Abstract Algebra
MATH 751	Introductory Topology I
MATH 752	Introductory Topology II
MATH 758	Introduction to Ergodic Theory and Dynamics
MATH 761	Differentiable Manifolds
MATH 770	Foundations of Mathematics
MATH 771	Set Theory
MATH 773	Computability Theory
MATH 776	Model Theory

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 or graduate degree programs.

POLICIES

GRADUATE SCHOOL POLICIES

The Graduate School's Academic Policies and Procedures (<https://grad.wisc.edu/acadpolicy/>) serve as the official document of record for Graduate School academic and administrative policies and procedures and are updated continuously. Note some policies redirect to entries in the official UW-Madison Policy Library (<https://policy.wisc.edu/>). Programs may set more stringent policies than the Graduate School. Policies set by the academic degree program can be found below.

NAMED OPTION-SPECIFIC POLICIES

PRIOR COURSEWORK

Graduate Credits Earned at Other Institutions

Students in the MA program may transfer no more than 14 credits of graduate coursework from other institutions. Coursework earned ten or more years prior to admission to a master's degree is not allowed to satisfy requirements.

Undergraduate Credits Earned at Other Institutions or UW-Madison

Refer to the Graduate School: Transfer Credits for Prior Coursework (<https://policy.wisc.edu/library/UW-1216/>) policy.

Credits Earned as a Professional Student at UW-Madison (Law, Medicine, Pharmacy, and Veterinary careers)

Refer to the Graduate School: Transfer Credits for Prior Coursework (<https://policy.wisc.edu/library/UW-1216/>) policy.

Credits Earned as a University Special Student at UW-Madison

Refer to the Graduate School: Transfer Credits for Prior Coursework (<https://policy.wisc.edu/library/UW-1216/>) policy.

PROBATION

Refer to the Graduate School: Probation (<https://policy.wisc.edu/library/UW-1217/>) policy.

ADVISOR / COMMITTEE

Students are recommended to meet with an advisor.

CREDITS PER TERM ALLOWED

15 credit maximum. Refer to the Graduate School: Maximum Credit Loads and Overload Requests (<https://policy.wisc.edu/library/UW-1228/>) policy.

TIME LIMITS

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

Otherwise, refer to the Graduate School: Time Limits (<https://policy.wisc.edu/library/UW-1221/>) policy.

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/>)
- 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/departamental or school/college grievance decisions)
- Office of Compliance (<https://compliance.wisc.edu/>) (for class harassment and discrimination, including sexual harassment and sexual violence)
- Office Student Assistance and Support (OSAS) (<https://osas.wisc.edu/>) (for all students to seek grievance assistance and support)
- 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)

L&S POLICY FOR GRADUATE STUDENT ACADEMIC APPEALS

Graduate students have the right to appeal an academic decision related to an L&S graduate program if the student believes that the decision is inconsistent with published policy.

Academic decisions that may be appealed include:

- Dismissal from the graduate program
- Failure to pass a qualifying or preliminary examination
- Failure to achieve satisfactory academic progress
- Academic disciplinary action related to failure to meet professional conduct standards

Issues such as the following cannot be appealed using this process:

- A faculty member declining to serve as a graduate student's advisor.
- Decisions regarding the student's disciplinary knowledge, evaluation of the quality of work, or similar judgements. These are the domain of the department faculty.
- Course grades. These can be appealed instead using the L&S Policy for Grade Appeal (<https://kb.wisc.edu/lis/22258/>).
- Incidents of bias or hate, hostile and intimidating behavior (<https://hr.wisc.edu/hib/>), or discrimination (Title IX (<https://compliance.wisc.edu/titleix/>), Office of Compliance (<https://compliance.wisc.edu/eo-complaint/formal-investigations/>)). Direct these to the linked campus offices appropriate for the incident(s).

Appeal Process for Graduate Students

A graduate student wishing to appeal an academic decision must follow the process in the order listed below. Note time limits within each step.

1. The student should first seek informal resolution, if possible, by discussing the concern with their academic advisor, the department's Director of Graduate Studies, and/or the department chair.
2. If the program has an appeal policy listed in their graduate program handbook, the student should follow the policy as written, including adhering to any indicated deadlines. In the absence of a specific departmental process, the chair or designee will be the reviewer and decision maker, and the student should submit a written appeal to the chair within 15 business days of the academic decision. The chair or designee will notify the student in writing of their decision.
3. If the departmental process upholds the original decision, the graduate student may next initiate an appeal to L&S. To do so, the student must submit a written appeal to the L&S Assistant Dean for Graduate Student Academic Affairs within 15 business days of notification of the department's decision.
 - a. To the fullest extent possible, the written appeal should include, in a single document: a clear and concise statement of the academic decision being appealed, any relevant background on what led to the decision, the specific policies involved, the relief sought, any relevant documentation related to the departmental appeal, and the names and titles of any individuals contributing to or involved in the decision.
 - b. The Assistant Dean will work with the Academic Associate Dean of the appropriate division to consider the appeal. They may seek additional information and/or meetings related to the case.
 - c. The Assistant Dean and Academic Associate Dean will provide a written decision within 20 business days.
4. If L&S upholds the original decision, the graduate student may appeal to the Graduate School. More information can be found on their website: Grievances and Appeals (<https://grad.wisc.edu/documents/grievances-and-appeals/>) (see: Graduate School Appeal Process).

OTHER

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

PROFESSIONAL DEVELOPMENT

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.