A NEW MASTER’S DEGREE PROGRAM OPTION IN MATHEMATICS

The Department of Mathematics has introduced a new option in the Master’s Degree program, Master of Arts in Mathematics – Foundations of Advanced Studies. It is designed to prepare students for competitive Ph.D. level graduate programs and enhance their chances for admittance to high quality graduate schools. This new Master’s program option will be structured so that students with basic preparation from their undergraduate institutions can complete it in no more than two years. Some students with a higher level of preparation may have some of the course requirements waived based on previously completed equivalent work; such students may advance more quickly through the program and complete the degree in only one year.

Admissions Requirements

We are inviting applications to enter this program starting from the academic year 2014-2015. Applicants will have earned an undergraduate degree in Mathematics or a related field with a strong mathematical component. We expect GRE scores to be submitted with the application (both General and Math Subject GRE) except for students who participate in a designated program for which GRE scores are waived. For admitted international students who are not native speakers, TOEFL scores of 93 and above are required, except for students who participate in a designated program for which TOEFL scores are waived.

Prospective students are expected to have taken courses in Linear Algebra (Math 341 or equiv.), Analysis I (Math 521 or equiv.) Modern Algebra I (Math 541 or equiv.), and Elementary Topology (Math 551 or equiv.). Some of these courses may also be taken at UW in the first semester of the program but do not count for credit towards the degree.

Degree Requirements

• 30 graduate credits in Mathematics, as outlined below. These will include at least 12 credits in courses numbered 700 and above. Credit requirements may be met by courses taken or, in some cases and in the extent allowed by the UW Graduate School, by waivers for prior work approved by the Director of Graduate Studies.

• Required courses (3 credits each): 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.
  • Analysis II (Math 522)
  • Modern Algebra II (Math 542)
• Basic electives (3 credits each): All other 500 level and all 600 level courses in Mathematics may be taken as elective courses. Currently the following courses are available.
  • Numerical Linear Algebra (Math 513)
  • Numerical Analysis (Math 514)
  • Introduction to Splines and Wavelets (Math 515)
  • Ordinary Differential Equations (Math 519)
  • Linear Programming Methods (Math 525)
  • Probability Theory (Math 531)
  • Algebraic Topology (Math 552)
  • Differential Geometry (Math 561)
  • Elementary Number Theory (Math 567)
  • Mathematical Logic (Math 571)
  • Sequence in Mathematical Biology (Math 605, 606, 608, 609)
  • Analysis of Partial Differential Equations (Math 619)
  • Analysis III (Math 621)
  • Complex Analysis (Math 623)
  • Fourier Analysis (Math 627)
  • Measure and Integration (Math 629)
  • Introduction to Stochastic Processes (Math 632)
  • Introduction to Brownian Motion and Stochastic Calculus (Math 635)
  • Introduction to Error-Correcting Codes (Math 641)

• Advanced electives (3 credits each): 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.
  • Applied Mathematics I (Math 703)
  • Applied Mathematics II (Math 704)
  • Computational Mathematics I (Math 714)
  • Computational Mathematics II (Math 715)
  • Real Analysis I (Math 721)
  • Complex Analysis (Math 722)
  • Real Analysis II (Math 725)
  • Probability Theory I (Math 733)
  • Probability Theory II (Math 734)
  • Algebra I (Math 741)
  • Algebra II (Math 742)
  • Topology I (Math 751)
  • Topology II (Math 752)
  • Differentiable Manifolds (Math 761)
  • Foundations of Mathematics (Math 770)
  • Set Theory (Math 771)
  • Computability Theory (Math 773)
  • Model Theory (Math 776)

• Only in exceptional cases may a student enroll in 800 or 900 level courses. This requires approval by a graduate advisor.
• Exceptional students who wish to pursue a Master’s thesis will be able to enroll in an individual studies course Math 790 (Master thesis).

• Courses offered by other departments which are not cross-listed with the Mathematics Department will be allowed to fulfill the credit requirement only in exceptional circumstances, and must be approved by the Director of Graduate Studies or the Graduate Program Committee.

• Grades: Students must achieve an overall GPA 3.0 or better in mathematics and cross-listed courses.

• Advising requirement: At the beginning of the program, students will submit a tentative plan of study which needs to be approved by a graduate advisor. Students will meet with a graduate advisor before each fall semester to discuss a plan of study for the following academic year.

• Residence requirement: 16 graduate credits must be earned in residence at UW-Madison.

• Time limit: This is a program designed to be completed in no more than two years. In exceptional circumstances, the Director of Graduate Studies, in consultation with the Graduate Program Committee, may allow extensions.

• Financial Support: The College of Letters and Science does not currently offer graduate assistant positions or other financial support to students enrolled in this program.