The department offers the doctor of philosophy degree with a major in mathematics and a master of arts degree in mathematics.

The Ph.D. degree requires proficiency in basic and advanced graduate mathematics and the completion of a dissertation containing a significant piece of original research in some area of mathematics. The Ph.D. specialty and dissertation may be in any area of mathematics, including but not limited to algebra, algebraic geometry, applied mathematics, combinatorics, computational mathematics, complex analysis, differential equations, differential geometry, dynamical systems, harmonic analysis, logic, mathematical biology, number theory, probability, and topology. A complete list of faculty and their areas of expertise is available through the department website.

Students in the Ph.D. program also have the option to earn a master of arts degree.

The M.A. degree is available with the named option titled foundations of advanced mathematics. 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.

Prospective students should see the program website for funding information.

To make progress toward a graduate degree, students must meet the Graduate School Minimum Degree Requirements and Satisfactory Progress in addition to the requirements of the program.

Students who are not yet working with a dissertation advisor are required to meet semiannually with their academic advisor. All students must have a dissertation advisor by the end of the sixth semester.

All students are required to pass at least one qualifying exam by the beginning of their fourth semester (the spring semester of the second year), and two by the beginning of their sixth semester (the spring semester of the third year.)

Students must satisfy all the requirements for dissertator status by the end of the eighth semester (end of fourth year).
TIME CONSTRAINTS
Eight years. Extensions have to be approved by the program.

A candidate for a doctoral degree who fails to take the final oral examination and deposit the dissertation within five years after passing the preliminary examination may by require to take another preliminary examination and to be admitted to candidacy a second time.

Doctoral degree students who have been absent for ten 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.

LANGUAGE REQUIREMENTS
No language requirements.

ADMISSIONS
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).

LEARNING OUTCOMES

KNOWLEDGE AND SKILLS
• Students learn a substantial body of mathematics in introductory and research level graduate courses in mathematics.
• Students complete a dissertation under the guidance of an advisor. The dissertation should make an original and substantive contribution to its subject matter.
• Students demonstrate breadth within the learning experiences.
• Students present research in seminar talks, conferences or publications.
• Students communicate complex ideas in a clear and understandable manner.

PROFESSIONAL CONDUCT
• Students foster ethical and professional conduct.

PEOPLE

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