

# MATHEMATICS (PH.D.)

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## Doctor of Philosophy. Major in Mathematics.

In addition to the general university requirements for the Ph.D., the department requires that 36 credits of graduate-level mathematics (excluding MATH 500, MATH 510, MATH 599, MATH 600, seminars, and directed study) be completed or transferred (with at least 18 credits completed at UI).

The preliminary examination must be passed no later than the end of the student's fourth year of graduate study and before the dissertation is started. The preliminary examination is composed of three parts covering the areas algebra, analysis, and one of topology, combinatorics, or differential equations. These are given all in a one-week period and are graded by a departmental committee that may recommend additional testing in one or more of the specific areas if satisfactory results are not obtained. The committee may also recommend an oral examination in certain areas by the supervisory committee.

The dissertation must be of an original research nature and be in an area spanned by the research interests of the major professor. A final examination that amounts to a defense of the dissertation is required. Acceptability of the dissertation is to be determined by the student's major professor and graduate committee.

1. The student can conduct research in mathematics.
2. The student has prepared for success in the job market by being able to give research-level and undergraduate-level lectures, and by being able to articulate teaching and research goals.
3. The student can demonstrate a knowledge of advanced mathematics.