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Mathematics, Ph.D.



A Return to: Undergraduate & Graduate Degrees

A student working towards a Ph.D. degree in mathematics is expected to major in one of the areas of mathematics in which there is active faculty research interest. These areas currently include algebra, analysis, applied mathematics, numerical analysis, statistics, and topology.

Admission

In addition to meeting the general application and admission requirements of the Graduate School, applicants to the PH.D. program in Mathematics must meet all requirements for admission at the master's level and must submit satisfactory scores on the Graduate Record Examination (GRE); official scores must be sent directly from the test administrator to the Graduate School.

General Requirements

A minimum of seventy-two semester hours of credit beyond the bachelor's degree is required; at least forty-eight of these hours must be in regular course work. A student entering the program who has had previous graduate work in applied mathematics, pure mathematics or statistics will have the program of study adjusted according to the graduate work already completed.

General Comprehensive Examination

Each student must complete five of the beginning graduate-level sequences, or their equivalents, in the following topics: abstract or linear algebra; complex or real analysis; numerical analysis; ordinary or partial differential equations; applied, experimental, or mathematical statistics; and algebraic or general topology. A student must pass written exams in three of the course sequences, with at least one written exam in the area of the student's dissertation.

In addition to these written examinations, the student must pass an oral examination covering all work in the area of specialization, with special attention given to topics from advanced courses.

Language Requirements

The student must demonstrate knowledge in either two approved natural languages other than English or a combination of two of an approved natural language, a computer language, mathematical software (such as Mathematica or MATLAB), and several statistical computer packages. Departmental approval is required.

Dissertation

After the student has been admitted to candidacy and a major professor has been selected, the department will recommend a dissertation committee to the Dean of the Graduate School. The major professor chairs the committee.

The dissertation must represent an original contribution to applied mathematics, pure mathematics, or statistics and must be of such quality as to be publishable in an appropriate professional journal.

Final Examination

A final public oral examination devoted to the defense and evaluation of the dissertation is

