

Applied Mathematics, PhD

The Ph.D. degree program in Applied Mathematics is designed to enable students to master a significant body of mathematics, including a specialty in Applied Mathematics; to relate this knowledge to a coherent area of science or engineering other than mathematics; and to carry on fundamental research in Applied Mathematics. Students who are interested in the program should contact the graduate program director of the department.

Each Program of Study requires at least 54 semester hours of graduate coursework, and must include a major area of concentration consisting of at least six courses in addition to the four common core courses, and a minor consisting of at least four related graduate courses in some area outside of the department. The major, minor, and other courses in the Program of Study must be selected so that the student will be prepared to conduct research in an area of applied mathematics.

Students must pass three examinations:

- the joint program examination,
- the comprehensive qualifying examination, and
- the final examination.

The joint program examination is a written test of the student's ability to successfully pursue a Ph.D. in Applied Mathematics. It covers a four course common core in real analysis (MA 653, MA 654) and linear and numerical linear algebra (MA 544, MA 614). The joint program examination cannot be taken more than twice.

The comprehensive qualifying examination covers the entire Program of Study and the student's proposal for a dissertation topic, and is administered by the student's graduate study supervisory committee on behalf of the School of Graduate Studies. The examination is part written and part oral. It cannot be taken more than twice. Upon successful completion of the comprehensive qualifying examination and dissertation proposal, the student is admitted to candidacy for the Ph.D. degree.

The final examination is an oral presentation of the dissertation in the form of a seminar before the student's graduate study supervisory committee. The dissertation is evidence that the student can independently identify a problem of contemporary significance through familiarity with the current literature in some area of Applied Mathematics, organize and execute a program of research, recognize and analyze the results, and present them in cogent, well-written exposition. It must include mathematical results suitable for publication in a nationally recognized journal.

The Ph.D. degree program in Applied Mathematics is a joint program with the other two campuses (Birmingham and Tuscaloosa) of the University of Alabama System. All requirements of the program can be completed at the University of Alabama in Huntsville.