

# Applied Mathematical and Computational Sciences, PhD

beginning their graduate study. The examination is typically based on outside area courses and/or directed readings.

## Requirements

The Doctor of Philosophy program in applied mathematical and computational sciences (AMCS) requires a minimum of 72 s.h. of graduate credit.

## Course of Study

Faculty members can help each student plan a course of study that is consistent with the student's background, interests, and goals. Individual plans are designed to help students develop expertise in methods of applied mathematics and build a strong foundation in related topics. They also provide sufficient knowledge in an outside area to enable students to use mathematical techniques in that area. Students may also arrange their study plan to earn a master's degree from another department after they complete part of their plan. Students find suitable thesis problems and supervisors with the help of the faculty.

## Required Courses in Core Areas

Students must successfully complete these three core course sequences in the first two years of graduate study.

Course #	Title	Hours
All of these:		
MATH:5200 & MATH:5210	Introduction to Analysis I-II	6
MATH:5600 & MATH:5700	Nonlinear Dynamics With Numerical Methods - Introduction to Partial Differential Equations	6
MATH:5800 & MATH:5810	Numerical Methods I-II	6

## Outside Area Courses

Students must take and pass PhD-level courses in areas in which mathematics is applied: one preparation course in the first two years of study and then two advanced courses outside of mathematics numbered 6000 or above.

## Advanced Mathematics Course Requirement

In order to establish a solid foundation in mathematics, students must successfully pass two more mathematics courses (prefix MATH) numbered 5000-5999 and complete at least 12 s.h. of graduate mathematics courses numbered 6000-7999, with the exception of seminar courses. The courses should be chosen to obtain mathematical breadth and must be approved by the AMCS chair.

## Comprehensive Examination

Students complete a comprehensive examination that covers their research area within three and a half years after