APPLIED MATHEMATICS, PHD

The Applied Mathematics PhD program is a joint program with The University of Alabama in Birmingham and The University of Alabama in Huntsville.

Admissions

In addition to the minimum Graduate School admission requirements, to be considered for regular admission an application must include:

- A resume/CV
- 3 letters of recommendation.

Scores on the general test of the GRE are optional. We encourage applicants to submit GRE scores if they think doing so will boost their chance of getting admitted. However, applications with and without GRE scores will both get full consideration.

See the Admission Criteria section of this catalog for more information.

Curricular Requirements

Students must complete 54 coursework hours and 24 dissertation research hours in order to qualify for the PhD in Applied Mathematics. The grade of each course has to be at least a B. The student's supervisory committee and the Joint Program Committee must approve the selection of all these courses. At least 18 hours must be in a major area of concentration, selected so that the student will be prepared to conduct research in an area of applied mathematics, while at least 12 hours have to be in a minor area of study, which is a subject outside mathematics.

Code and Title	Hours
A major area of applied mathematics	**18**
These 18 credit hours can come from any of the following courses. This is not an exhaustive list courses options. Other options may include from The University of Alabama in Huntsville and The University of Alabama in Birmingham may be selected with advisor approval.	
MATH 510 Numerical Linear Algebra	
MATH 511 Numerical Analysis I	
MATH 512 Numerical Analysis II	
MATH 520 Linear Optimization Theory	
MATH 521 Non-Linear Optimization Theory	
MATH 541 Boundary Value Problems	
MATH 554 Advanced Math Statistics I	
MATH 555 Advanced Math Statistics II	
MATH 557 Stochastic Processes I	
MATH 559 Stochastic Processes II	
MATH 610 Iteratve Meth Linear Sys	
MATH 611 Numerical PDEs	
MATH 642 Partial Differential Equations	
MATH 644 Singular Perturbations	
A minor area of study	**12**
These 12 credit hours can come from graduate level courses offered by the Departments of Physics, Computer Science, Aerospace Engineering and Mechanics, Chemical and Biological Engineering, Economics, or Applied Statistics.	
Additional Courses	**24**

Additional courses are available to students that provide the foundation to do research at the PhD level. Students with an uneven preparation at the undergraduate level may be advised to take foundation courses before proceeding with the program above. See the preliminary test requirements listed above. Only courses with numbers above 500 are accepted for graduate credit; however, some courses have dual numbers so that they can be taken for either undergraduate or graduate credit. For example, students cannot take both MATH 465 and MATH 565 for credit. This situation may apply to students who have been undergraduates at UA. Also, be aware that some 500-level courses may count toward the Master's degree requirement, but not toward the PhD requirement.

Dissertation	**24**
MATH 699 Dissertation Research	

Transfer Credit

See the Graduate School policy.

Doctoral Plan of Study Requirement

The programs of study require prior approval by the Joint Program Committee. See also the Graduate School Policy on the Doctoral plan of study.

Joint Program Examinations

Every student planning to earn the PhD in Applied Mathematics must pass the two Joint Program Examinations. One exam covers real analysis. The other exam covers linear algebra and numerical linear algebra.

The exams are administered twice a year. During each administration, a student may take one or both of the exams. A single exam may be attempted at most twice, with a maximum of three attempts allowed for passing both exams; those who do not will be dropped from the program.

Comprehensive Exam

Students will take the Comprehensive Qualifying Examination after three years of graduate studies. The examination will cover the program of study, with a written and an oral component, and will be jointly prepared and graded by the student's Graduate Study Supervisory Committee. This will consist of six faculty members: the student's advisor serves as Committee Chair; two others from the student's home department; one faculty member from each of the Mathematics departments at UAB and UAH; and one from outside the department in the student's minor area. The written component will consist of three parts; two parts will be devoted to the student's major area, and one part will be devoted to his minor area. Three hours will be allowed for each part. The oral portion will cover the entire program of study. Copies of old exams are available on the department's website.

If the judgment of the Supervisory Committee is that the student's performance on the test is not satisfactory, then they may, at their discretion, and without obligation, elect to give the test at most one additional time. The second test, if given, will conform to the above policies for the first test. Students must pass both the written and oral component by the end of their fourth year of full-time graduate studies; those who do not will be dropped from the program.

Admission to Candidacy Requirements

Advancing to candidacy requires the passing of the joint program examinations, the language requirement, the comprehensive exam, the completion of all the course- work as listed on the approved plan of study, and the approval of the dissertation subject by the supervisory dissertation committee.

Continuous Enrollment Policy

See the Graduate School policy.

Dissertation Requirements

See the Graduate School policy.

Time Limits for Degree Completion Requirements

See the Graduate School policy.

Student Progress Requirements

Coursework may be finished within two years after the Qualifying Exam. Research should be started while coursework is still underway. Typically, work on the thesis itself takes 12-18 months. Therefore, depending on your background, it can take four to six years to obtain both the M.S. and the Ph.D. degree.

Additional Requirements

Language Requirement

The language requirement for each student will be set by the Joint Program Committee with the approval of the appropriate Graduate Dean.

Academic Misconduct Information

See the Graduate School Policy.

Withdrawals and Leave of Absence Information

See the Graduate School Policy.

Academic Grievances Information

See the Graduate School Policy.

Grades and Academic Standing

See the Graduate School Policy.

Graduate School Deadlines Information

See the Graduate School Deadlines.

Application for Graduation Information

See the Graduate School Policy on application for graduation.