

APPLIED MATHEMATICS, MASTER OF ARTS WITH A CONCENTRATION IN APPLIED MATHEMATICS AND STATISTICS (M.A.)

Program Objectives

The objectives of the graduate mathematics program are the following:

1. To provide a graduate program in mathematics and statistics leading to a degree which prepares students for careers in government or industry.
2. To provide a graduate program in mathematics designed for certified high school teachers who wish to broaden their knowledge of the mathematics related to the field in which they teach.
3. To provide the necessary mathematical content for certified teachers to teach dual-credit courses at the secondary level or courses at a community college, two-year college, or four-year college.
4. To include in this program courses in the areas of mathematics, statistics, statistical analysis, mathematics applications, and courses demonstrating the relationships among these fields.
5. To guide students in tailoring a program of study ideally suited to their background, aptitude, and career interests.

Admission Requirements

Clear admission to graduate standing will be granted to those students who have the following:

1. Scores of 144 or higher on the Verbal Reasoning portion and 147 or higher on the Quantitative Reasoning portion of the Graduate Record Exam. Applicants with cumulative undergraduate GPA's of 3.0 or higher are exempt from the GRE requirement.
2. An undergraduate grade point average of 2.5 or higher.
3. Prerequisites for the core courses. (For example, six hours of calculus and courses in linear algebra and statistics would be sufficient.) Applicants who do not have this preparation may be granted admission without the prerequisites but are required to take the courses needed to strengthen their backgrounds. Students seeking a change in Kentucky Teacher rank must have initial certification in secondary mathematics.

Program Requirements

CIP Code: 27.0503

Applied Mathematics Program

Each student must apply 15 or more hours from 800-level courses toward the M.A. degree.

Code	Title	Hours
Core Courses		
MAT 720 or STA 720	Mathematical Statistics I	3
MAT 865	Applied Linear Algebra	3

MAT 866	Combinatorial Optimization	3
MAE 704 or STA 775	Tech for Teaching & Research Statistics Methods Using SAS	3

No course may be counted under both core requirements and concentration requirements.

Concentrations

Students must select one of the following Concentrations:

Secondary Mathematics	
Applied Mathematics and Statistics	15
Data Science	

Exit Requirements

MAT 898	Applied Mathematics Capstone	3
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Total Hours 30

Concentration

Code	Title	Hours
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Concentration Courses

Choose from nine hours of the following: 9

DSC 780	R and Introductory Data Mining
MAT 706	Number Theory
MAT 727	Cryptology
MAT 740	Appl of Partial Diff Equatio
MAT 750	Appl of Complex Analysis
MAT 755	Graph Theory
MAT 765	Math of Structural Bioinformat
MAT 777	Intro to Alg Coding Theory
MAT 853	Ordinary Differential Equation
MAT 856	Applied Mathematics
MAT 871	Numerical Analysis
MAT 880	Seminar in:_____
STA 721	Mathematical Statistics II
STA 770	Quality Control & Reliability
STA 775	Statistics Methods Using SAS
STA 780	R and Introductory Data Mining
STA 785	Experimental Design
STA 835	Linear Models
STA 840	App Multi Statistical Analysis
STA 880	Seminar in:_____

Electives

Choose from six hours of advisor-approved electives selected from 700- or 800-level courses with DSC, MAE, MAT, STA, or CSC prefixes 6

Total Hours 15

Exit Requirements

Capstone

Students are required to complete 3 hours of MAT 898 Applied Mathematics Capstone.