

APPLIED MATHEMATICS MAJOR: ECONOMICS OPTION (B.S.)

<https://ceps.unh.edu/mathematics-statistics/program/bs/applied-mathematics-economics-option>

Description

This degree program prepares students for employment and/or graduate study in a variety of fields and research specializations in which mathematics plays a critical role in the solution of important scientific and technological problems.

Graduation Requirements

In all courses used to satisfy the requirements for its major programs, the Department of Mathematics and Statistics requires that a student earn a grade of C- or better and have an overall grade-point average of at least 2.00 in these courses.

Requirements

Major Requirements

Code	Title	Credits
MATH 425	Calculus I	4
MATH 426	Calculus II	4
MATH 445	Mathematics and Applications with MATLAB	4
or IAM 550	Introduction to Engineering Computing	
MATH 527	Differential Equations with Linear Algebra ¹	4
MATH 528	Multidimensional Calculus ¹	4
MATH 531	Mathematical Proof	4
MATH 644	Statistics for Engineers and Scientists ²	4
MATH 645	Linear Algebra for Applications ¹	4
MATH 753	Introduction to Numerical Methods I	4
PHYS 407	General Physics I	4
Capstone: Select one of the following		
MATH 797	Senior Seminar	4
MATH 798	Senior Project	4
MATH 799	Senior Thesis	2 or 4

Total Credits 50-52

¹ MATH 525 Linearity I *may be substituted for* MATH 645.
MATH 525 & MATH 526, Linearity, *may be substituted for* MATH 527, MATH 528, and MATH 645.

² Applied Mathematics: Economics Option students take MATH 539 Introduction to Statistical Analysis.

Economics Option Requirements

Code	Title	Credits
MATH 739	Applied Regression Analysis	4
MATH 755	Probability with Applications	4
ONE approved MATH elective at the 700-level, selected in consultation with the academic advisor		4
ECON 401	Principles of Economics (Macro)	4
ECON 402	Principles of Economics (Micro)	4
ECON 605	Intermediate Microeconomic Analysis	4
ECON 611	Intermediate Macroeconomic Analysis	4
ECON 726	Introduction to Econometrics	4

ONE approved ECON or DS elective at the 700-level, selected in consultation with the academic advisor 4
Total Credits 36

Degree Plan

Course	Title	Credits
First Year		
Fall		
MATH 425	Calculus I	4
Discovery Course		4
Discovery Course		4
ECON 401	Principles of Economics (Macro)	4
MATH 400	Freshman Seminar	1
Credits		17
Spring		
MATH 426	Calculus II	4
MATH 445	Mathematics and Applications with MATLAB	4
ECON 402	Principles of Economics (Micro)	4
ENGL 401	First-Year Writing	4
Credits		16
Second Year		
Fall		
MATH 528	Multidimensional Calculus	4
MATH 531	Mathematical Proof	4
PHYS 407	General Physics I	4
ECON 605	Intermediate Microeconomic Analysis	4
Credits		16
Spring		
MATH 527	Differential Equations with Linear Algebra	4
MATH 539	Introduction to Statistical Analysis	4
ECON 611	Intermediate Macroeconomic Analysis	4
Inquiry Course		4
Credits		16
Third Year		
Fall		
MATH 739	Applied Regression Analysis	4
MATH 645	Linear Algebra for Applications	4
ECON or DS Elective Course		4
Discovery Course		4
Credits		16
Spring		
700-level MATH Elective Course		4
ECON 726	Introduction to Econometrics	4
Writing Intensive Course		4
Discovery Course		4
Credits		16
Fourth Year		
Fall		
MATH 753	Introduction to Numerical Methods I	4
MATH 755	Probability with Applications	4
Elective Course		4

Elective Course	4
Credits	16
Spring	
Capstone:	4
MATH 797 Senior Seminar or MATH 798 or Senior Project or MATH 799 or Senior Thesis	
Discovery Course	4
Elective Course	4
Elective Course	4
Credits	16
Total Credits	129

Student Learning Outcomes

- Students recognize common mathematical notations and operations used in mathematics, science and engineering.
- Students can recognize and classify a variety of mathematical models including differential equations, linear and nonlinear systems of algebraic equations, and common probability distributions.
- Students have developed a working knowledge (including notation, terminology, foundational principles of the discipline, and standard mathematical models within the discipline) in at least one discipline outside of mathematics.
- Students are able to extract useful knowledge, both quantitative and qualitative, from mathematical models and can apply that knowledge to the relevant discipline.