APPLIED MATHEMATICS, BS

More Information: https://mathstats.case.edu/undergraduate-programs/why/frequently-asked-questions/
Degree: Bachelor of Science (BS)
Major: Applied Mathematics

Program Overview

All undergraduate degrees in the department are based on a four-course sequence in calculus and differential equations and have a computational component. The mathematics and applied mathematics degrees all require further mathematics courses in analysis and algebra. The statistics degrees all require a further statistics core. The applied mathematics program has a four-course professional core requirement to promote the understanding of how mathematics is applied in other fields. There are additional requirements particular to each degree program, including technical electives in the major. Each degree program requires a minimum of 120 credit hours.

A student majoring in applied mathematics must design a program of study in consultation with his or her academic advisor. This should include identifying an area of application that the student plans to pursue, four mathematics electives relevant to this area, and a separate professional core of 12 credit hours of coursework to develop scientific background in this area. The program of study must explicitly list the mathematics electives and the professional core in the area of application.

Areas of research in applied mathematics well represented in the department include:

- Applied dynamical systems
- Applied probability and stochastic processes
- Imaging
- Life science
- Scientific computing

Undergraduate Policies

For undergraduate policies and procedures, please review the Office of Undergraduate Studies section of the General Bulletin.

Accelerated Master's Programs

Undergraduate students may participate in accelerated programs toward graduate or professional degrees. For more information and details of the policies and procedures related to accelerated studies, please visit the Office of Undergraduate Studies section of the General Bulletin.

Program Requirements

Students seeking to complete this major and degree program must meet the general requirements for bachelor's degrees and the general requirements of the College of Arts and Sciences. Students completing this program as a secondary major while completing another undergraduate degree program do not need to satisfy the latter set of requirements.

The BS degree in applied mathematics requires at least 50 hours of coursework in mathematics and related subjects, a 12 hour professional core that is specific to the area of application of interest to the student, and at least 17 hours in basic science.

Code	Title	Hours
Mathematics Requirements		
MATH 121	Calculus for Science and Engineering I	4
MATH 122	Calculus for Science and Engineering II	4
or MATH 124	Calculus II	
MATH 223	Calculus for Science and Engineering III	3
or MATH 227	Calculus III	
MATH 224	Elementary Differential Equations	3
or MATH 228	Differential Equations	
MATH 307	Linear Algebra	3
MATH 321	Fundamentals of Analysis I	3
MATH 322	Fundamentals of Analysis II	3
MATH 330	Introduction to Scientific Computing	3
One of the following two courses:		3
MATH 324	Introduction to Complex Analysis	
MATH 425	Complex Analysis I	
Approved mathematics electives:		21
Four approved mathematical courses specific to the concentration area of interest to the student. If appropriate, courses other than MATH or STAT may be used. (12 units)		
Three MATH courses at the 300 level or higher (9 units)		
Professional Core Requirement		
12 approved credit hours specific to an area of application. This requirement is intended to promote scientific breadth and encourage application of mathematics to other fields.		12
Other Non-mathematics Requirements		
PHYS 121	General Physics I - Mechanics	4
PHYS 122	General Physics II - Electricity and Magnetism	4
PHYS 221	Introduction to Modern Physics	3
One of the following sequences:		6-8
ASTR 101 & ASTR 103	Introduction to the Sun and Its Planets and Introduction to the Stars, Galaxies, and the Universe	
CHEM 105 & CHEM 106	Principles of Chemistry I and Principles of Chemistry II	
CHEM 111 & ENGR 145	Principles of Chemistry for Engineers and Chemistry of Materials	
EEPS 110 & EEPS 115	Physical Geology and Introduction to Oceanography	
EEPS 110 & EEPS 210	Physical Geology and Earth History: Time, Tectonics, Climate, and Life	
Total Hours		**79**

More details about these program requirements and the way they are implemented can be found in the Frequently Asked Questions at the "More Information" link at the bottom of this page.