



BACHELOR OF SCIENCE

**MATHEMATICS AND**

**COMPUTER SCIENCE**



College of Science and Technology

*The mathematics and computer science bachelor's degree combines an appreciation of mathematical reasoning with an understanding of computing, including algorithms, software engineering, computer architecture, data structures, operating systems, networks and artificial intelligence.*

# MATHEMATICS AND COMPUTER SCIENCE

## Bachelor of Science

### Program Overview

This bachelor of science is intended for students who are interested in computer science and mathematical computing. This degree provides a solid foundation of theoretical computer science and its mathematical foundations and compares favorably with other theoretically oriented computer science programs. The program is particularly recommended for those students who are interested in pursuing a graduate degree in computer science or computational mathematics.

### Courses include:

- Basic Concepts of Math
- Calculus I, II and III
- Computer Systems and Low-Level Programming
- Data Structures and Algorithms
- Introduction to Modern Algebra
- Introduction to Systems Programming and Operating Systems
- Linear Algebra
- Mathematical Concepts in Computing I and II
- Modern Algebra
- Number Theory
- Numerical Analysis I
- Probability Theory I
- Real & Complex Analysis I and II
- Program Design and Abstraction
- Software Design

### Research Opportunities

Students can work directly with experienced researchers in mathematics and computer and information science and across the College of Science and Technology. Research efforts in the Department of Mathematics encompass the fields of algebra, analysis, applied mathematics and scientific computing, geometry and topology, and probability. The Department of Computer & Information Sciences' research efforts are particularly strong in data mining for spatial, temporal and distributed data and applications of these techniques to large biomedical databases; networked computing; mathematical theory of computation; algorithms and their applications to molecular computing and bioinformatics; and artificial intelligence.

### Career Options

Mathematics and computer science are disciplines central to research in the natural and social sciences, finance, and technology. Mathematics prepares students for challenging careers in computer science, teaching, or any field in which advanced mathematical techniques and tools are used to analyze data, improve scientific research or make optimal business decisions. On the computer science side, graduates are hired as system analysts, software developers and programmers in healthcare, investments, insurance, computer software and hardware, and science laboratories, and by the government.

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