

# DEPARTMENT OF MATHEMATICAL AND STATISTICAL SCIENCES

## UNDERGRADUATE STUDIES

### OVERVIEW

THE DEPARTMENT OF **MATHEMATICAL AND STATISTICAL SCIENCES** IS BUILT ON THREE IMPORTANT PILLARS – REACHING, RESEARCH, AND OUTREACH – TO OFFER AN OUTSTANDING AND CONTINUOUSLY EVOLVING LEARNING AND STUDY ENVIRONMENT.

### DEGREE PROGRAMS

In addition to the degrees outlined below, students can also select a Mathematics or Statistics major or minor within the Bachelor of Science General program.

#### HONORS OR SPECIALIZATION IN MATHEMATICS

This flexible degree allows students to steer their studies in the direction they are most passionate about: analysis, coding theory, differential equations, functional analysis, geometry, manifolds, number theory, numerical methods, operator theory, or topology.

#### HONORS IN MATHEMATICS, MINOR IN COMPUTING SCIENCE

This program is designed for students looking to study the mathematical foundations of computing: algorithms, logic, or the application of modern algebraic theory to error-correcting codes and cryptography.

#### HONORS IN MATHEMATICS, MINOR IN STATISTICS

This combination includes the fundamental principles, philosophy, and historical origins of statistics and probability theory, and allows students to broaden their portfolio of interests and transfer their theoretical skills to the discipline of statistics.

#### SPECIALIZATION IN MATHEMATICS-COMPUTATIONAL SCIENCE

Students in this program combine the analytical and problem-solving skills of mathematical training with the power of modern computing science.

#### HONORS IN APPLIED MATHEMATICS

This program's focus is applying mathematical ideas to solve problems in the physical, social, and life sciences, as well as in engineering and finance. Students in the Applied Mathematics program can also opt for a minor in Computing Science or Statistics.

#### HONORS IN APPLIED MATHEMATICS, MINOR IN COMPUTING SCIENCE

This program will be of interest to students wishing to combine analytical mathematical training with the power of computers for solving sophisticated practical problems.

#### HONORS IN APPLIED MATHEMATICS, MINOR IN STATISTICS

This program is intended for students interested in including statistics in their repertory of applicable mathematical and computational techniques.

#### HONORS OR SPECIALIZATION IN MATHEMATICS AND ECONOMICS

Economists rely heavily on mathematical and statistical methods when they study how a society produces, consumes, and distributes goods and services. Through this program, you will learn the essentials of economics and better understand the related mathematical and statistical tools.

## HONORS OR SPECIALIZATION IN MATHEMATICS AND FINANCE

This interdisciplinary area provides a solid foundation in statistics, economics, accounting, and operations management necessary for careers in the financial industry.

## HONORS OR SPECIALIZATION IN STATISTICS

The Statistics program trains students in the discipline of collecting, analyzing, and interpreting data and includes a wide selection of subjects in theoretical and experimental areas. The study of statistics calls for strong mathematical skills and an interest in problem solving.

See [ualberta.ca/admissions](http://ualberta.ca/admissions) for admission requirements.

## RESEARCH AREAS

- + Algebra
- + Analysis
- + Computational mathematics and optimization
- + Differential equations, dynamical systems, fluid mechanics, and mathematical biology
- + Geometry, topology, and mathematical physics
- + Statistics, probability, and mathematical finance

## UNIQUE OFFERINGS

### DECIMA ROBINSON SUPPORT CENTRE

The Decima Robinson Support Center for Mathematical and Statistical Sciences offers comprehensive support for students taking introductory mathematics and statistics courses at the University of Alberta. Offerings include drop-in help and weekly review seminars, exam study sessions, and a mathematics primer course to help high school students make the transition to university.

## CAREERS

Our graduates lead successful careers in many areas, including:

- + Actuary
- + Appraiser

- + Auditor
- + Business Market Analyst
- + Claims Adjuster
- + Cryptographer
- + Econometrician
- + Economic Analyst
- + Healthcare Analyst
- + Information Technologist
- + Investment Advisor
- + Market Research Analyst
- + Mathematician
- + Numerical Analyst
- + Operations Researcher
- + Research Scientist
- + Risk Analyst
- + Statistician

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**For more information on the programs and opportunities in Mathematical and Statistical Sciences, visit: [ualberta.ca/mathematical-and-statistical-sciences](http://ualberta.ca/mathematical-and-statistical-sciences)**

## CONTACT

For admission related questions, contact [science.recruiting@ualberta.ca](mailto:science.recruiting@ualberta.ca).

## DEPARTMENT OF EARTH AND ATMOSPHERIC SCIENCES

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DEPARTMENT OF MATHEMATICAL  
& STATISTICAL SCIENCES