

Mathematics (BA, BSc)

Admission Requirements

Prerequisite Requirements for BA:

- ENG4U, MHF4U,
- Recommended: MCV4U
- Expected minimum admission average: high 70s – mid 80s

Prerequisite Requirements for BSc:

- ENG4U, MHF4U, SBI4U or SCH4U or SPH4U
- Recommended: MCV4U
- Expected minimum admission average: high 70s – mid 80s

Program Overview

If you have chosen Mathematics, your studies at York will emphasize **mathematical concepts, abstraction, and reasoning, together with high-level problem-solving**. Your studies will begin with core courses like calculus, problems, conjectures & proofs, linear algebra, probability and computing, and will prepare you for more advanced courses including abstract algebra, differential equations, geometry, mathematical analysis, number theory and theory of equations, and discrete mathematics. These studies are ideal for students who intend to pursue teaching or graduate studies in mathematics, and will also give you an excellent background for occupations demanding skills in mathematical reasoning and techniques.

Students in Mathematics have the option of pursuing the major as either a Bachelor of Arts (BA) or a Bachelor of Science (BSc), giving you the option to combine your studies in mathematics with human and social issues or with other science disciplines. The mathematics courses required for the major are the same in the BA and BSc programs. The difference between the BA and BSc lies in the requirements outside your major. BA students take courses from liberal arts areas, such as humanities, social sciences, economics, and languages. BSc students study Mathematics within the context of other sciences, such as physics, chemistry, biology, computer science, and earth and atmospheric science.

First Year Mathematics Major Courses:

- Calculus
- Statistics
- Problems, Conjectures and Proofs
- Computing for Math and Statistics
- One of Biology, Chemistry, or Physics (BSc students only)

Second Year Mathematics Major Courses:

- Elementary Probability
- Real Analysis
- Intermediate Economic Theory I and II
- Financial Economics
- Calculus of Several Variables with Applications
- Linear Algebra
- One of Biology, Chemistry, or Physics (BSc students only)

Upper Year Mathematics Course Options:

- Abstract Algebra
- Vector Integral Calculus
- Introduction to Geometries
- Mathematical Analysis
- Number Theory and Theory of Equations
- Discrete Mathematics
- History of Mathematics
- Mathematics of Cryptography

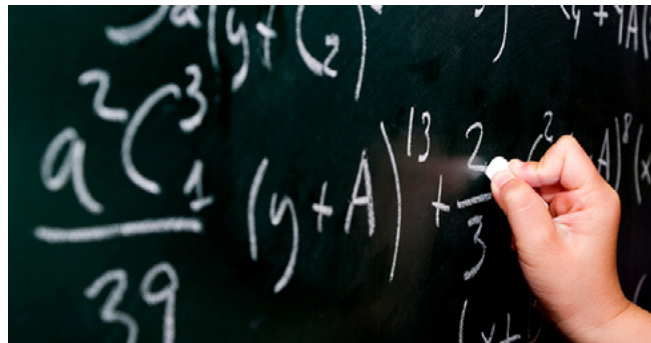
Experiential Education

The Faculty of Science provides a rich diversity of opportunities for undergraduate students to engage in Experiential Education. The Internship Program provides students in this program with the opportunity to integrate their classroom learning with hands-on, paid, work experiences related to their field of study. Internship students will begin their work term(s) after their third year of classroom study and can take part in 4, 8, 12, or 16 months of work before returning to school to complete their studies.

Here are just a few of the companies you could have the opportunity to work for:

- Sanofi Pasteur
- Health Gene Corporation
- Parks Canada
- City of Toronto
- Grande Prairie Regional College

Visit yorku.ca/science/students/experiential-education/ for more information.



Career Pathways for Mathematics

Our graduates go on to post-graduate and professional studies in mathematics and related science and social science fields, and establish rewarding careers in fields as diverse as biometrics, cryptography, data and research analysis, teaching and finance.

- Accountant, Financial Auditor, Actuary, Financial Analyst
- Applied Science Technologist, Quality Control Analyst
- Operations Research and Optimization, Industrial and Scientific Research
- Biometrician, Biostatistician
- Cryptologist, Cryptographer
- Computer Programmer/Systems Analyst
- Demographer
- Mathematician, Statistician
- Education – elementary, high school, college, university