Mathematics for Education (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

Despite the surplus of teachers in Ontario, there is a shortage of qualified teachers of mathematics in not only Ontario, but also across North America. A degree in Mathematics for Education from York will prepare you for a fulfilling future in mathematics education. We will help you achieve this goal by **providing you with foundational knowledge in mathematical concepts; teach you how to think critically; allow you to develop your problem-solving skills; and enhance your understanding of the history of mathematics and the role of mathematics in the education system and society**. You will come away from this degree well prepared for continuing studies in education, including a Bachelor of Education (BEd), as well as graduate work in Mathematics Education.

Students in Mathematics for Education 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 for Education Major Courses:

- Calculus
- Statistics
- Problems, Conjectures and Proofs
- Computing for Math and Statistics
- One of Biology, Chemistry, or Phyics (BSc students only)
- An elective course in an area planned as second teaching subject

Second Year Mathematics for Education Major Courses:

- Linear Algebra
- Calculus of Several Variables with Applications
- Differential Equations or Statistics or Mathematical Theory of Interest
- Elementary Probability
- Plus a course in an area planned as a second teaching subject

Upper Year Mathematics for Education Course Options:

- Topics in Mathematics Education
- History of Mathematics
- Introduction to Geometries
- Operations Research
- Computational Mathematics
- Algebra   • Mathematical Analysis
- Number Theory and Theory of Equations
- Differential Equations
- Courses in an area planned as a second teaching subject

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 for Education

This program is specifically designed for those looking to go into a Mathematics Education related field but can still allows you to obtain careers in the following:

• Math teacher – elementary, high school, college, university
• Math education research and policy
• Post Graduate Studies
• Areas combining mathematical skills and communication skills
• Mathematician, Statistician

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