## Admission Requirements

### Applied Mathematics (BA, BSc)

<table>
<thead>
<tr>
<th>Prerequisite Requirements for BA:</th>
<th>Prerequisite Requirements for BSc:</th>
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</thead>
<tbody>
<tr>
<td>• ENG4U, MHF4U</td>
<td>• ENG4U, MHF4U, SBI4U or SCH4U or SPH4U</td>
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<td>• Recommended: MCV4U</td>
<td>• Recommended: MCV4U</td>
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</table>

Expected minimum admission average: high 70s – mid 80s

### If you major in Applied Mathematics your courses in first year will probably be:

- Calculus
- Statistics
- Problems, Conjectures and Proofs
- Computing for Math and Statistics
- one of Biology, Chemistry, or Physics (BSc students only)
- General education course(s)
- Elective

### In second year you will probably take:

- Linear Algebra
- Calculus of Several Variables with Applications
- Elementary Probability
- Real Analysis or one of Biology, Chemistry, or Physics (BSc students only)
- Mathematics electives
- General education course(s)

### Career options for Applied Mathematics majors include:

- Aerospace Engineer
- Accountant
- Actuary
- Architect
- Database Developer
- Engineering Consultant
- Financial Analyst
- Hardware Developer
- Laboratory Technician
- Mathematician
- Risk Analyst
- Statistician

### Courses you might take in upper years include:

- Abstract Algebra
- Vector Integral Calculus
- Introduction to Geometries
- Mathematical Analysis
- Number Theory and Theory of Equations
- Discrete Mathematics
- History of Mathematics
- Mathematics of Cryptography
Why study Applied Mathematics & Statistics at York?

At York your studies in Applied Mathematics will give you a solid base of knowledge in mathematics with an emphasis on the applications of mathematics and computing in the science, engineering, and business fields. Your studies will begin with core courses in calculus and differential equations, problems, conjectures & proofs, linear algebra, computing and computation, probability and statistics, and you may then choose to specialize in areas like numerical analysis, operations research, probability and statistics or combine your studies with other degree programs in Science and Engineering. Your studies in Applied Mathematics will prepare you for success in professional careers in operations research, numerical and computational modeling, industrial and scientific research, actuarial and financial analysis, education, government, and for further professional or postgraduate studies. Your studies in Applied Mathematics at York can also give you access to professional qualifications such as the Diploma in Operations Research or membership in the Society of Actuaries, or they may lead to graduate studies in Applied Math.

BA or BSc

Students in Applied Mathematics have the option of pursuing the major as either a Bachelor of Arts (BA) or 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 Applied Mathematics within the context of other sciences, such as physics, chemistry, biology, computer science, and earth and atmospheric science.

Program Overview

Applied & Industrial Mathematics involves the modern and traditional relationship of math to science and engineering. This area will allow you to examine the variety of applications of computers and mathematics to real world needs. Courses include advanced study in symbolic computation and numerical methods. Mathematical modelling and computation are vital tools in many aspects of industrial research and development, including manufacturing design, process control, product testing, environmental assessment, controlling the spread of infectious disease and other biomedical applications, and signal and image processing.

Facilities and Opportunities at York and Beyond

Your studies in Mathematics & Statistics at York will take place in energetic classes and tutorials taught by fifty full-time faculty members whose teaching and research interests span the spectrum of mathematical studies today. Our strong academic support system includes the Math and Statistics Tutorial Labs and the peer Study Group program to bolster your mathematical understanding. Club Infinity offers social and intellectual exchange with your peers. A rich array of academic prizes and awards recognizes high achievement in your mathematical and statistical studies. Mathematics & Statistics at York strongly supports its students who enter and achieve highly in international mathematics contests like the Putnam Competition and the Mathematical Contest in Modeling.

As a graduate of Mathematics & Statistics at York, you will be prepared for leadership in a wide array of careers, and will gain the background to succeed in a full range of graduate professional and academic programs. 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. Our graduates are quick to credit York's challenging Mathematics & Statistics program for their successes.