Get to know

MATHEMATICS
AND STATISTICS

Mathematicians seek out patterns, construct rigorous arguments, articulate assumptions, appreciate the value of a precise definition, analyze mathematical models, and create beautiful structures. Statisticians produce trustworthy data, extract meaning and draw practical conclusions from data, test conjectures, provide mathematical evidence, and critique the reasoning of others. In both cases, these skills have a surprising ability to help make sense of the physical, biological, artistic, psychological, economic, social, and philosophical worlds. As a consequence, quantitative expertise is in high demand on the job market. Moreover, rankings of occupations invariably list multiple careers in mathematics and statistics among the very best.

Queen’s ADMISSIONS

Students apply to either Queen’s Science (QS) or Queen’s Arts (QA) through the OUAC website. Secondary School prerequisites include English 4U, Advanced Functions 4U, Calculus 4U, or recognized equivalents. The Specializations in Biology and Mathematics require Biology 4U, and Mathematical Physics requires Physics 4U.

“One of two founding programs of Queen’s University, a proud history dating back to 1842.”

Degree OPTIONS

Bachelor of Science (Honours)
- Major in Mathematics or Statistics
- Minor in Mathematics or Statistics
- Specialization in Biology and Mathematics
- Computing and Mathematics or Mathematical Physics

Bachelor of Computing (Honours)
- Specialization in Computing and Mathematics

Bachelor of Arts (Honours)
- Medial / Minor in Mathematics or Statistics

Bachelor of Science (General)
- Mathematics or Statistics

Bachelor of Arts (General)
- Mathematics or Statistics

A Common START

Students in our Faculty are admitted into Arts, Science or Computing but the focus is on a common first year. Through self-exploration, and while you settle into university life, you have the chance to work with our advisors and faculty to uncover where your real interests and opportunities for success are. Sometimes that discovery happens fairly quickly, and for other students it takes some work and time before the “ah-ha!” happens – either way your first year will be a great experience at Queen’s.

Course HIGHLIGHTS

Mathematics and Statistics courses are taught to students throughout the university, not just in Arts and Science. Popular upper-level courses include Computational Data Analysis, Evolutionary Game Theory, Group Theory, Life Contingencies, Modeling Techniques in Biology, Real Analysis, and an Introduction to Coding Theory.


That is a degree from Queen’s.

quartsci.com
**Mathematics and Statistics MAJOR MAP**

**BACHELOR OF SCIENCE HONOURS (SPECIALIZATION, MAJOR, MINOR) | BACHELOR OF COMPUTING HONOURS (SPECIALIZATION) | BACHELOR OF ARTS HONOURS (MEDIAL, MINOR) | BACHELOR OF ARTS/SCIENCE (GENERAL)**

**1ST YEAR**
- **GET THE COURSES YOU NEED**
  - Take MATH 110(6.0), 120(6.0).* *In certain situations other possibilities exist—talk to the Undergraduate Chair.
  - For details on plan requirements or thresholds, go to the Arts and Science website. See an Academic Advisor at the Arts and Science Office or the Undergraduate Chair for help.

**2ND YEAR**
- **GET THINKING GLOBALLY**
  - The Queen's University International Centre is your first stop to learn how to internationalize your degree or to leverage your existing cross-cultural experience.
  - Speak to a QUIC advisor or get involved in their programs, events and training opportunities.

**3RD OR FINAL YEAR**
- **GET CONNECTED WITH THE COMMUNITY**
  - Volunteer on or off campus with different community organizations such as Big Brothers, Big Sisters.
  - Get involved with the Mathematics and Statistics Departmental Student Council (DSC).
  - Start or continue volunteering with organizations such as Queen's Undergraduate Actuarial Society (QUAS).

**4TH OR FINAL YEAR**
- **WHERE COULD I GO AFTER GRADUATION?**
  - Accounting
  - Actuarial science
  - Aerospace
  - Architecture
  - Astronomy
  - Auditing
  - Banking
  - Bioinformatics
  - Biostatistician
  - Communications
  - Computer scientist
  - Credit management
  - Cryptanalyst
  - Data mining
  - Data processing
  - Data scientist
  - Economics
  - Fibre and laser electro-optics
  - Financial analysis
  - Financial auditor
  - Financial manager
  - Information science
  - Inventory control specialist
  - Mathematician
  - Operations research analyst
  - Quality control manager
  - Quantitative analyst
  - Risk analyst
  - Security specialist
  - Software developer
  - Statistician
  - Survey researcher

*Some careers may require additional training.*

**CAUTION:** This map is meant as a guide to provide suggestions throughout your university career. The activities, resources, and careers mentioned are possibilities – you are not restricted to them and you don’t have to follow this exact timeline. Every person (including you!) will find their own unique path through their degree at Queen’s and beyond.

Visit careers.queensu.ca/majormaps.html for the online version with links!
Mathematics and Statistics

MAJOR MAP

How to use this map

• Got questions about careers and classes?
• Feeling a little lost or overwhelmed by choices?
• Wondering what you are “supposed” to be doing?

Use this map to plan for success in five overlapping areas of career and academic life. Each map helps you explore possibilities, set goals and track your accomplishments. To make your own custom map, use the My Major Map tool.

Don’t stress if you haven’t done all of the suggested activities. The map is not a prescription – it’s a tool for finding your own way at Queen’s.

Getting what you need to succeed in the workplace

WHAT DO EMPLOYERS WANT?
In a recent survey from the Canadian Council of Chief Executives the top 6 skills sought by employers were:

1. People skills
2. Communication skills
3. Problem-solving skills
4. Analytical abilities
5. Leadership skills
6. Industry – specific knowledge

HOW DO I GET THE SKILLS I NEED?
It is important to develop a balanced skill set – many of which you will develop during your studies. To stand out, take advantage of experiential learning through the multitude of clubs and activities in and around Queen’s. Check out the Get Relevant Experience section of this map.

WHAT CAN I LEARN STUDYING MATHEMATICS AND STATISTICS AT QUEEN’S?

• Logical reasoning and problem solving – apply analytical and critical reasoning to solve problems
• Analytical skills – analyze data to make their meaning clear and devise and test conjectures by generating both special and extreme cases
• Understand strong evidence – produce trustworthy data and provide mathematical evidence for conjectures and generalizations
• Knowledge of a broad range of mathematical fields and methods
• Ability to create mathematical models
• Pattern recognition – explore examples and recognize patterns
• Persistence – approach problem solving with persistence and a willingness to try multiple approaches
• Oral and written communication – communicate quantitative ideas with clarity and coherence through writing and speaking

WHAT MAKES ME SPECIAL?
No one will get exactly the same experience as you. Take the time to think about what skills you have developed to be able to best explain them with compelling examples in future applications to employers and further education. For help with this, check out the Career Services skills workshop.