Mathematics and Statistics
MAJOR MAP

How to use this map

Use the 5 rows of the map to explore possibilities and plan for success in the five overlapping areas of career and academics. The map just offers suggestions – you don't have to do it all! To make your own custom map, use the **My Major Map** tool.

Get started thinking about the future now – where do you want to go after your degree? Having tentative goals (like careers or grad school) while working through your degree can help with short-term decisions about courses and experiences, but also help you keep motivated for success.

Get the help you need

Queen's provides you with a broad range of support services from your first point of contact with the university through to graduation. At Queen's, you are never alone. We have many offices dedicated to helping you learn, think and do.

Ranging from help with academics and careers, to physical, emotional, or spiritual resources – our welcoming living and learning environment offers the programs and services you need to be successful, both academically and personally, and Queen's wants you to succeed! Check out the **Student Affairs website** for available resources.

Succeed in the workplace

What employers want

The Canadian Council of Chief Executives list the top 6 skills sought by employers as:

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

Take the time to think about the unique skills you have developed at Queen's, starting with the skills list here for ideas. Explaining your strengths with compelling examples will be important for applications to employers and further education. For help, check out the **Career Services skills workshop**.

What can I learn studying MATHEMATICS AND STATISTICS?

- **Logical reasoning and problem solving to apply analytical and critical reasoning to solve problems**
- **Ability to solve problems by applying analytical and critical reasoning**
- **Understand strong evidence to 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 to explore examples and recognize patterns**
- **Persistence to approach problem solving with openess and a willingness to try multiple approaches**
- **Oral and written comunication to communicate quantitative ideas with clarity and coherence through writing and speaking**

Why study in Kingston?

For over 175 years, the Kingston community has been a collection of bright minds. We are proud that our city was named one of the top Intelligent Communities across the globe, an accolade largely due to the thousands of students who study here every single year. In fact, the BBC has identified Kingston as one of the GREATEST UNIVERSITY TOWNS in the world, which might be why Instagram named the city 'the happiest place on the planet'. Just a quick drive to Toronto, Montreal, Ottawa and even New York, Kingston is a safe and liveable city. Not only are we known as the freshwater sailing capital of the world, Kingston is arguably the birthplace of hockey. Wondering what to do while you're attending school? Queen's has more clubs per capita than any other university in Canada, and Kingston has more restaurants per capita than any other city in North America; your time here is guaranteed to be 'fresh made daily'.

We're **closer** than you **think**.

Beijing / 15 hrs
London / 7 hrs
Dubai / 14 hrs
Vancouver / 5 hrs
Calgary / 4 hrs
Halifax / 2 hrs
San Francisco / 5.5 hrs
Toronto
Kingston
Denver / 3 hrs
New York / 1.5 hrs
Dallas / 3.5 hrs
Atlanta / 2 hrs
Bermuda / 2 hrs
CANADA
UNITED STATES
Queen's

Mathematics and Statistics

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 theories, 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.

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

Queen's ADMISSION

BAH students apply to Queen's Arts (QA) through the OUAC (Ontario Universities' Application Centre) website (ouac.on.ca). Secondary School prerequisites include six 4U and 4M courses, including a minimum of three 4U courses, one of which must be ENG4U. Applicants outside of Ontario may have additional requirements.

BScH students apply to Queen's Science (QS) through the OUAC (Ontario Universities Application Centre) website (ouac.on.ca). Secondary School prerequisites include English 4U, Advanced Functions 4U, Calculus and Vectors 4U, plus 2 of Physics 4U, Chemistry 4U or Biology 4U or recognized equivalents. Visit queensu.ca/admission for additional information regarding requirements and admission to Queen's.

Degree PLANS

Bachelor of Science (Honours)
Major / Minor in Mathematics and Statistics / Specialization in Biology and Mathematics, Mathematical Physics

Bachelor of Computing (Honours)
Specialization in Computing and Mathematics

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

Internship option available

A Year to CHOOSE

We often say that our students are like explorers. In Arts and Science, your first year is all about making choices and exploring new paths. Whether you are in Arts, Science or Computing, you will choose your courses from a wide variety of subjects as you settle into university life and become familiar with new styles of learning. By the end of your first year, you will have discovered your areas of interest, passion and success, and will then declare your major. Your first year, whether you consider it to be undeclared, undecided or simply a time for exploration, is bound to be a year full of adventure.

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.

Acquire Skills. **Gain** Experience. **Go** Global.
That is a degree from Queen's.
quartsci.com

2017 - 2018
Mathematics and Statistics MAJOR MAP

BACHELOR OF SCIENCE (HONOURS): SPECIALIZATION, MAJOR, MINOR | BACHELOR OF COMPUTING (HONOURS): SPECIALIZATION | BACHELOR OF ARTS (HONOURS): MEDIAL, MINOR

Want to enhance you degree? Consider a certificate in **Geographic Information Science** or explore other **certificates available**.

Queen's UNIVERSITY

	1ST YEAR	2ND YEAR	3RD YEAR	4TH OR FINAL YEAR
GET THE COURSES YOU NEED	In first year take MATH 110(6.0) and 120(6.0).* *In certain situations other possibilities exist—talk to the Undergraduate Chair, if you need to explore other options. Each Plan will have at least one required first-year course, including minors. It is important to take a variety of first-year courses to keep as many pathways open as possible for you going into second year. For details see the Arts and Science Academic Calendar.	In second year take MATH 280(3.0), 281(3.0), STAT 268(3.0) and 269(3.0). If possible, also take MATH 210(3.0) and MATH 231(3.0). Please see the Academic Calendar to ensure you are taking the correct courses.	In third year take 15.0 units of BIOM, MATH, or STAT at the 300-level or above. Some 300- and 400-level courses are only offered in alternating years. Many 400-level courses can be taken in third year. Need help mapping all of your core, option, supporting and elective courses (including those not listed above) to make sure you will have what you need to complete your degree? Use the Course Mapping Tool on the Arts and Science website.	In fourth year take 6.0 units of BIOM, MATH, or STAT at the 400-level or above and 9.0 units of BIOM, MATH, STAT at the 300-level or above. Complete all courses in an area of focus. By fourth year you should be working on your remaining option and elective courses. Make sure to map your minor and / or certificate(s) as well. Apply to graduate in SOLUS.
GET RELEVANT EXPERIENCE	Join teams or clubs on campus such as the Queen's Math Club, Putnam team, and the Math Investigations Program. See the AMS Clubs Directory or the Queen's Get Involved page for more ideas.	Look into summer jobs by talking to the dept. or Career Services about work through SWEP or NSERC. Take more responsibility within different clubs or extracurriculars.	Consider applying to do a 12-16 month QUIP internship between your third and fourth year. Consider entrepreneurial opportunities via programs like the Queen's Innovation Connector Summer Initiative (QICSI).	Investigate requirements for full-time jobs or other opportunities related to careers of interest. Assess what experience you're lacking and fill in gaps with volunteering, clubs, or internships – check out the Career Services skills workshop for help. Consider submitting your work to an undergraduate journal like Inquiry@Queen's.
GET CONNECTED WITH THE COMMUNITY	Volunteer on or off campus with different community organizations such as Best Buddies.	Get involved with the Mathematics and Statistics Departmental Student Council (DSC).	Do targeted networking with alumni working in careers of interest by joining the LinkedIn group Queen's Connects. Check out Career Services networking workshops. Connect with professors at events or workshops hosted by the DSC.	Consider joining professional associations like the Canadian Applied and Industrial Mathematics Society, the Canadian Mathematical Society, and the Statistical Society of Canada. Join groups on LinkedIn reflecting specific careers or topics of interest in Mathematics.
GET THINKING GLOBALLY	Prepare for work or studies in a multi-cultural environment by taking QUIC's Intercultural Competency Certificate, and research possible immigration regulations. Speak to a QUIC advisor to get involved in their programs, events, and training opportunities.	Is an exchange in your future? Start thinking about where you would like to study abroad. Apply in January for a 3rd year exchange through the International Programs Office. Apply for the Math in Moscow Scholarship or the Budapest Semesters in Mathematics.	Build your intercultural competence by getting involved with other cultures or by practicing or improving your language skills.	International students interested in staying in Canada can speak with an International Student Advisor.
GET READY FOR LIFE AFTER GRADUATION	Grappling with program decisions? Go to Majors Night or get some help wondering about career options from Career Services. Build your transferable skills in time management, problem-solving, writing and more with Student Academic Success Services.	Explore different careers of interest by reading books in the Career Services Career Advising and Resource Area, such as the *Great Jobs for Math Majors*. For more information check out Career Cruising or by finding and connecting with alumni on LinkedIn.	Start focusing on areas of interest. Research any further education requirements for careers of interest. If needed, prepare to take any required tests (like the LSAT or GMAT) and get help thinking about grad school from Career Services.	Apply to jobs or future education, or make plans for other adventures. Get help from Career Services with job searching, resumes, interviews, grad school applications, or other decisions.

CONSIDER A 12-16 MONTH QUIP INTERNSHIP

Where could I go after graduation?

- Accounting
- Actuarial science
- Aerospace
- Architecture
- Astronomy
- Auditing
- Banking
- Bioinformatics scientist
- 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.

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

*This map is intended to provide suggestions for potential activities and career paths, but everyone's abilities, experience, and constraints are different. Build your own map using our online My Major Map tool.