# Mathematics & Engineering, Mathematics & Statistics MSc, MASc Map



Applying to and Navigating Graduate Studies

## Why **GRADUATE STUDIES** in **MATHEMATICS and STATISTICS?**

A graduate degree in Mathematics and Statistics is essential for anyone aspiring to research or academic positions, and is very useful for those who want to assume a leadership role in government, business and industry. A Master's degree in mathematics and statistics prepares students for a wide variety of research and industry career options.

### Why QUEEN'S?

Queen's is an ideal place to pursue graduate study in Mathematics and Statistics. We have an outstanding group of faculty researchers who are internationally recognized in their fields of specialization. They represent a wide variety of areas including pure mathematics (number theory, algebra, algebraic geometry, combinatorics, operator algebras, random matrices and dynamical systems), mathematical physics, mathematics applied to engineering (control theory, communication theory), mathematical biology, and both theoretical and applied statistics.

### **Program STRUCTURE**

- MSc Pattern I (18-24 months): course work and a research thesis.
- MSc Pattern II (12 months): course work and research project.
- MASc (18-24 months): course work and a research thesis.





"The graduate mathematics community at Queen's is vibrant, international, and intellectually stimulatina."

-John Treilhard, MSc

### **RESEARCH** Areas

### MSc

- Algebra and Number Theory
- Analysis, Geometry and Topology
- Applied Mathematics
- Mathematics and Engineering
- Probability and Statistics

### MASc

• Mathematics and Engineering

We encourage you to identify an area of research interest and contact a potential supervisor before applying.

Visit the <u>Department of Mathematics and Statistics website</u> to read <u>faculty profiles</u> and learn more about faculty members' research areas. When you find a faculty member with similar research interests to yours, contact him/her and tell them about your interest in graduate work and related experience.





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# Mathematics and Statistics MSC, MASC MAP\*

MASTER OF SCIENCE (MSc), MASTER OF APPLIED SCIENCE (MASc)

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	GETTING STARTED	INTERMEDIATE STAGE	WRAPPING UP
ACHIEVE YOUR ACADEMIC GOALS	<ul> <li>Start with key priorities like developing your relationship with your supervisor and doing your coursework.</li> <li>Find your way through the academic process with help from departmental and <u>Expanding Horizons</u> professional development workshops, the department Grad Chair and the <u>SGS Habitat</u>.</li> </ul>	<ul> <li>Complete your coursework; begin to research and write your project or thesis.</li> <li>Attend the weekly Math &amp; Stats <u>Department Colloquium</u>.</li> </ul>	Complete and defend your project or thesis.
MAXIMIZE RESEARCH IMPACT	<ul> <li>Start to think about the audiences for your research.</li> <li>If you will be continuing graduate studies explore graduate programs and apply for external scholarships such as NSERC or OGS.</li> </ul>	<ul> <li>Attend or present at a graduate conference.</li> <li>Consider participating in the <u>3 Minute Thesis (3MT)</u> competition.</li> <li>Expand your research audience through social media such as Twitter or a blog.</li> </ul>	<ul> <li>Consider publication options for your research.</li> <li>Attend a major conference in your field, such as the Philosophy of Logic, Math, and Physics Conference, the Ottawa Math Conference, or an American Mathematical Society Conference.</li> </ul>
BUILD SKILLS AND EXPERIENCE	<ul> <li>Consider positions in student services, the <u>SGPS</u>, or media outlets like the <u>Queen's Journal</u>, <u>CFRC</u>, and the <u>SGS Blog</u>. Look in the <u>AMS Clubs Directory</u> for more ideas.</li> <li>Serve on departmental, faculty or university committees.</li> <li>Check out professional development workshops from <u>Expanding Horizons</u></li> </ul>	<ul> <li>Start keeping an eportfolio of your skills, experiences and competencies.</li> <li>Use a Research Assistant or Teaching Assistant position to develop your research or teaching skills.</li> <li>For help with teaching, get support from the Centre for Teaching and Learning. Enroll in SGS901 or the PUTL certificate for more professional development in teaching and learning.</li> </ul>	<ul> <li>Practice articulating the skills you have been developing in settings outside the university, such as casual conversation, networking, and interviews. Get help from a <u>Career Services workshop</u>.</li> <li>Check out opportunities for extra training through CTL, Expanding Horizons, <u>Mitacs</u>, or <u>other sources</u> to boost your skills.</li> </ul>
ENGAGE WITH YOUR COMMUNITY	<ul> <li>Explore how you can connect with your community through experiential opportunities on- and off-campus.</li> <li>Consider volunteering with different community organizations, such as Math Quest, a math camp for girls.</li> </ul>	<ul> <li>Participate in your graduate and professional community through activities such as graduate student outreach programs, organizing conferences, and research groups like Material Matters.</li> <li>Prepare for work or studies in a multi-cultural environment by taking QUIC's Intercultural Competency Certificate.</li> <li>If you are an international student interested in staying in Canada, consider speaking with an International Student Advisor.</li> </ul>	<ul> <li>Do some targeted networking with people working in careers of interest, through <u>QueensConnects</u> on LinkedIn, the <u>Queen's Alumni Association</u>, professional associations, and at conferences. Get help from a <u>Career Services workshop</u>.</li> <li>Consider joining professional associations like the <u>Canadian Mathematical Society</u> or the <u>Canadian Applied and Industrial Mathematics Society</u>.</li> </ul>
LAUNCH YOUR CAREER	<ul> <li>Finding a career that fits starts with knowing yourself. Get help by taking a <u>Career Services career planning workshop</u> or meeting with a career counsellor. Check out books like <i>So What Are You Going to do With That?</i> or <i>The Academic Job Search</i> from the <u>Career Resource Area</u> for advice on various career options.</li> <li>Start reading publications like <u>University Affairs</u> and the <u>Chronicle of University Affairs</u>.</li> </ul>	<ul> <li>Explore different careers of interest by reading <u>alumni profiles</u> on the SGS website, and using <u>QueensConnects</u> on LinkedIn to connect with Queen's alumni, or find alumni in various careers through "<u>Ask an Alum</u>".</li> <li>Check out the free online modules at <u>MyGradSkills</u> to help you plan your career.</li> </ul>	<ul> <li>Participate in hiring committees and attend job talks. Start focusing on areas of interest. Research organizations of interest and start putting together your CV or resume for potential positions of interest. Get help from Career Services with job searching, resumes, or interviews.</li> </ul>

• If you are considering a PhD, explore programs of interest reach out to

faculty, and apply to PhD programs and external scholarships.

### WHAT WILL I LEARN?

A graduate degree in Mathematics and Statistics or Mathematics and Engineering can equip you with valuable and versatile skills, such as:

- Knowledge and technical skills
- Effective communication skills in multiple forms for diverse audiences
- Information management:
   prioritize, organize and synthesize
  large amounts of information
- Time management: Meet deadlines and manage responsibilities despite competing demands
- Project management: develop ideas, gather information, analyze, critically appraise findings, draw and act on conclusions
- Creativity and innovation
- Perseverance
- Independence and experience as a collaborative worker
- Awareness, an understanding of sound ethical practices, social responsibility, responsible research and cultural sensitivity
- Professionalism in all aspects of work, research, and interactions
- Leadership: initiative and vision leading people and discussion

### WHERE CAN I GO?

A Master's degree in Mathematics and Statistics or Mathematics and Engineering can take your career in many directions. Many of our MSc students choose to continue their academic inquiry with a PhD. Our Master's students are equipped with a strong foundation for careers in:

- Academia
- Biostatistics
- Clinical Data Analysis
- Business AnalysisFinance

Taking time to explore career options, build experience, and network can help you have a smooth transition to the world of work after graduation.

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to explore your career pathways.

**Higher Education**. Browse non-academic labour market websites. Stay

on the lookout for special events like Graduate Student Career Week

• Check admission test deadlines if needed for further studies.

### Graduate Studies FAQs

### How do I use this map?

Whether you are considering or have embarked on graduate studies at Queen's, use this map to plan for success in five overlapping areas of your career and academic life. The map helps you explore possibilities, set goals and track your individual accomplishments. Everyone's journey is different – the guide offers options for finding your way at Queen's and setting the foundation for your future. To make your own customized map, use the online My Grad Map tool.

### Where can I get help?

Queen's provides you with a broad range of support services from your first point of contact with the university through to graduation.

Ranging from help with academics and careers, to physical, emotional, or spiritual resources – our welcoming environment offers the programs and services you need to be successful, both academically and personally. Check out the <a href="SGS">SGS</a>
<a href="HABITAT">HABITAT</a> for available resources.

### What is the community like?

At Queen's, graduate students from all disciplines learn and discover in a close-knit intellectual community. You will find friends, peers and support among the graduate students enrolled in Queen's more than 130 graduate programs within 50+ departments & research centres. With the world's best scholars, prize-winning professional development opportunities, excellent funding packages and life in the affordable, historic waterfront city of Kingston, Queen's offers a wonderful environment for graduate studies. Queen's is an integral part of the Kingston community, with the campus nestled in the core of the city, only a 10-minute walk to downtown with its shopping, dining and waterfront. For more about Kingston's history and culture, see Queen's University's **Discover** Kingston page.

### **Application FAQs**

### What do I need to know to APPLY?

### **ACADEMIC REQUIREMENTS**

- MSc: 4 year Bachelor's degree (perferably honours) with a minimum B+ standing.
- MASc: 4 year Bachelor's degree (normally in engineering) with a minimum B+ standing.

### ADDITIONAL REQUIREMENTS

- Two official transcripts for all post-secondary studies.
- At least 2 letters of reference.
- Curriculum vitae.
- If English is not a native language, prospective students must meet the English language proficiency requirements in writing, speaking, reading, and listening. The School of Graduate Studies requires the following minimum scores: TOEFL (paperbased): 550, (2) TOEFL iBT: Writing (24/30); Speaking (22/30); Reading (22/30); Listening (20/30), for a total of 88/120 (applicants must have the minimum score in each test as well as the minimum overall score), or (3) IELTS: 7.0 (academic module overall band score), or (4) PTE Academics: 65.

#### **KEY DATES & DEADLINES**

- Application due: January 15 to receive full funding consideration. There is no deadline to apply for admission.
- Notification of acceptance: Rolling acceptances.

Before you start your application, please review the graduate studies application process.

### What about **FUNDING**?

Most MSc and MASc students in Mathematics and Statistics receive minimum funding of \$23,000 per year . The funding package can consist of teaching assistantships or fellowships, research fellowships, internal and external awards and/or scholarships.

We encourage all eligible student to apply for external funding from OGS, NSERC and other sources. Queen's will automatically issue a \$5,000 top-up to incoming master's students who are awarded federal government tri-council awards. For more information, see the School of Graduate Studies' information on <u>awards and scholarships</u>.





MATHEMATICS
AND STATISTICS

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