Succeed in the workplace

What employers want

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 ENGINEERING?

- Proficiency in mathematics and quantitative analysis
- Understand the links between advanced mathematical concepts and their practical engineering applications
- Knowledge of theory and methods in applied mechanics, computing and communications, control and communications or robotics
- Ability to create and use sophisticated mathematical models
- Communicate quantitative ideas with clarity through writing and speaking
- Analytical mindset – develop mathematical habits of mind and a logical approach to problem solving
- Persistence – approach problem solving with persistence and a willingness to try multiple approaches
- Check out testimonials at mast.queensu.ca/meng/undergrad/testimonials.php

Get to know MATHEMATICS AND ENGINEERING

This one-of-a-kind program in Canada teaches highly sophisticated mathematical approaches to engineering issues. As a Mathematics and Engineering student, you will study pure and applied mathematics along with engineering courses in your chosen area of specialization. You will learn to analyze and solve engineering problems requiring superior mathematics skills, such as those involving modern communications, control, and mechatronic systems.

Degree OPTIONS

- Bachelor of Science in Engineering
- Bachelor of Science in Engineering with Professional Internship

Option in Applied Mechanics / Computing and Communications / Systems and Robotics

Get the help you need

- 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.
- A balanced approach leads to long-term success. While you will learn a lot from your studies, taking time to get relevant experience outside of the classroom, build your network, and gain international experience, will position you to be more competitive in your job search or grad school applications.
- 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.

How to use this map

- Use the Student Affairs website for available resources.
- Go to the Student Affairs website for the many possible career destinations of technical courses to help prepare them for the many possible career destinations available. Such courses include:
- Number Theory and Cryptography
- Lagrangian Mechanics, Dynamics, and Control
- Coding Theory
- Stochastic Processes and Applications
- Modern Control Theory
- Information Theory
- Optimization Theory and Applications

That is a degree from Queen’s.
### 1ST YEAR

**GET THE COURSES YOU NEED**

- Queen's Engineering first year is common - courses include: Physics, Chemistry, Calculus, Algebra, Graphics, Computing and Earth Systems Engineering.
- Also APSC100, the entry level course in our Engineering Design and Practice Sequence (EDPS), focusing on problem solving, experimentation principles and finishing off with a team-based engineering project.
- Discipline selection will take place in February!

**GET RELEVANT EXPERIENCE**

- Join teams or clubs on campus such as the Space Engineering Team (SET), the Queen's First Robotics Team (QFRT), and the Math Investigations Program.
- See the AMS Clubs Directory or the Queen's Get Involved page for more ideas.

**GET CONNECTED WITH THE COMMUNITY**

- Volunteer on or off campus with different community organizations, such as ENSDOC, Engineering Committee and Engineers without Borders (EWB).
- Consider joining an intramural sport or an athletics team. Check out the Athletics & Recreation site.

**GET THINKING GLOBALY**

- The Queen's University International Centre is your first step 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.

**GET READY FOR LIFE AFTER GRADUATION**

- Grappling with program decisions? Go to the Orientation Evenings held by different Engineering departments and attend the various Career Fairs during the year.
- Get some help deciding by visiting Career Services.

### 2ND YEAR

**GET THE COURSES YOU NEED**

- Courses include: Algebraic Structures, Differential Equations, Advanced Calculus, Real Analysis, and Linear Algebra.
- You will take the second EDPS course – APSC200.
- Your other 5-6 courses depend on your option.

**GET RELEVANT EXPERIENCE**

- Look into summer jobs related to mathematics and engineering by talking to the department or Career Services about work through SWE or NISEER.
- Take more responsibility within different clubs or extracurriculars. Consider entrepreneurial opportunities at programs like the Queen's Innovation Connector Summer Initiative (QICI).

**GET CONNECTED WITH THE COMMUNITY**

- Get involved with the Engineering Society (ENSDOC) and the Alma Mater Society (AMS).
- Start or continue volunteering with local organizations. Attend conferences such as the Queen's Engineering Competition (QEC).
- Attend information sessions and industry events on campus.

**GET THINKING GLOBALY**

- Is an exchange in your future? Start thinking about where you would like to study abroad.
- If exchange isn’t for you, come talk to QUIC about some other options to gain international experience.

**GET READY FOR LIFE AFTER GRADUATION**

- Explore different careers of interest by reading books in the Career Services Career Advising and Resource Area, such as Career Opportunities in Engineering. For more information check out Career Cruising or by finding and connecting with alumni on LinkedIn.
- Attend the Engineering and Technology Fair held by Career Services.

### 3RD YEAR

**GET THE COURSES YOU NEED**

- Courses include: Functions of a Complex Variable, Control, Mathematical Methods for Engineering & Physics, Engineering Design & Practice, and Engineering Economics.
- Your other 6-7 courses depend on your option.

**GET RELEVANT EXPERIENCE**

- Stay during the summer as an assistant to a faculty member or apply for external research opportunities. Apply for NSERC USRA positions in the department of Mathematics and Statistics.
- Consider applying to do a 12-16 month QUIP internship between your third and fourth year.

**GET CONNECTED WITH THE COMMUNITY**

- Do some targeted networking with alumni working in careers of interest by joining the LinkedIn group Queen's Connects Career Network.
- Attend the Canadian Undergraduate Mathematics Conference (CUMC).
- Build your intercultural competence by getting involved with other cultures or by practicing or improving your language skills. Stop by QUIC for ideas to go abroad, volunteer at QUIC or attend one of their events.

**GET THINKING GLOBALY**

- Is an exchange in your future? Start thinking about where you would like to study abroad.
- If exchange isn’t for you, come talk to QUIC about some other options to gain international experience.

**GET READY FOR LIFE AFTER GRADUATION**

- Start focusing on areas of interest. Research 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 and the Mathematics and Engineering faculty.
- Explore different careers of interest by reading books in the Career Services Career Advising and Resource Area, such as Career Opportunities in Engineering. For more information check out Career Cruising or by finding and connecting with alumni on LinkedIn.
- Attend the Engineering and Technology Fair held by Career Services.

### 4TH OR FINAL YEAR

**GET THE COURSES YOU NEED**

- Courses include: Mathematics & Engineering Seminar and the Engineering Mathematics Design Project course.
- Your remaining courses will depend on your option.
- Complete all the required courses based on your academic plan and option, and you are set to graduate.

**GET RELEVANT EXPERIENCE**

- 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.

**GET CONNECTED WITH THE COMMUNITY**

- Consider joining professional associations like Ontario Society for Professional Engineers, the Canadian Applied and Industrial Mathematics Society and IEEE Robotics & Automation Society.
- Join groups on LinkedIn reflecting specific careers or topics of interest in Mathematics and Engineering.

**GET THINKING GLOBALY**

- Prepare for work or studies in a multi-cultural environment by taking QUIC's Intercultural Competency Certificate, and research possible immigration regulations.
- International students interested in staying in Canada can speak with an International Student Advisor.

**GET READY FOR LIFE AFTER GRADUATION**

- 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.

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*some careers may require additional training*