

Mathematics and Engineering

Queen's
UNIVERSITY

FACULTY OF
ENGINEERING AND
APPLIED SCIENCE

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

Queen's ADMISSIONS

Students apply to Queen's Engineering (QE) through the OUAC (Ontario University Application Centre) website. Secondary School prerequisites include six 4U and 4M courses, one of which must be English 4U. Calculus and Vectors 4U, Chemistry 4U, and Physics 4U are all required along with one of Advanced Functions 4U, Biology 4U,



"Our program's versatile graduates have the solidity of an engineering degree, plus the flexibility afforded by their having the exceptional analytical skills demanded by the strong mathematics component of the program."

Data Management 4U, Computer Science 4U, Earth and Space Science 4U. A final grade of 70% must be obtained in English 4U. Applicants outside of Ontario may have additional requirements.

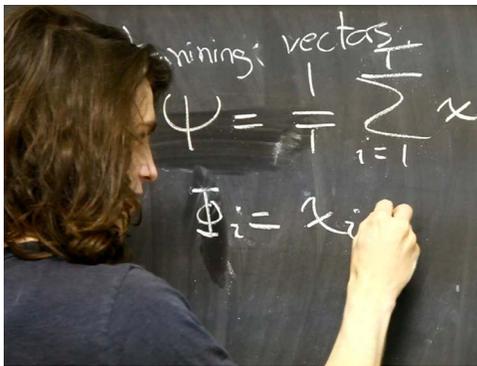
A Common START

Queen's is unique in offering a common First Year along with an open discipline choice. When you do choose your program, you don't have to worry about caps or quotas. Provided you pass all of your First Year courses, you are guaranteed a place in your engineering program of choice. Queen's also offers J-Section, a special extended program for students struggling with First Year courses. Take things at a slower pace and recover in time for Second Year.

Course HIGHLIGHTS

Mathematics and Engineering students have the opportunity to take a wide range 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



Acquire Skills. Gain Experience. Go Global.

That is a degree from Queen's.

mast.queensu.ca/meng

Mathematics and Engineering MAJOR MAP

BACHELOR OF APPLIED SCIENCE | BACHELOR OF APPLIED SCIENCE WITH PROFESSIONAL INTERNSHIP



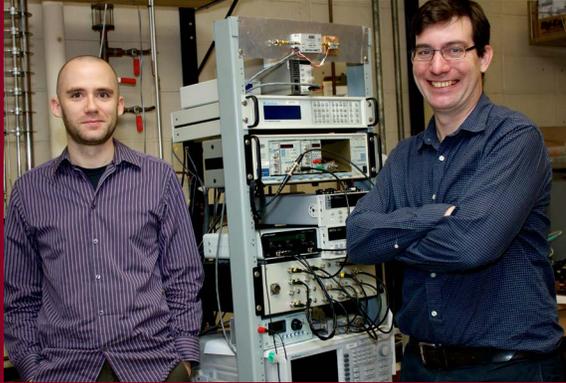
CONSIDER A 12-16 MONTH QUIP INTERNSHIP

- Where could I go after graduation?**
- Aerospace Systems
 - Artificial Intelligence
 - Astronomy
 - Biomedical Engineering
 - Business Administration and Management
 - Computer Engineering
 - Computer Programming
 - Computer Vision and Image processing
 - Control Systems Engineering
 - Cryptography
 - Data Analysis
 - Data Mining
 - Data Processing
 - Electronics
 - Fibre and Laser Electro-Optics
 - Financial Analysis
 - Information Systems
 - International Development
 - Law
 - Machine Learning
 - Management Consulting
 - Mechatronics
 - Medicine
 - Robotics
 - Satellite Communications
 - Securities
 - Signal Processing
 - Software Design
 - Telecommunications
- *some careers may require additional training

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

Mathematics and Engineering

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.

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.

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

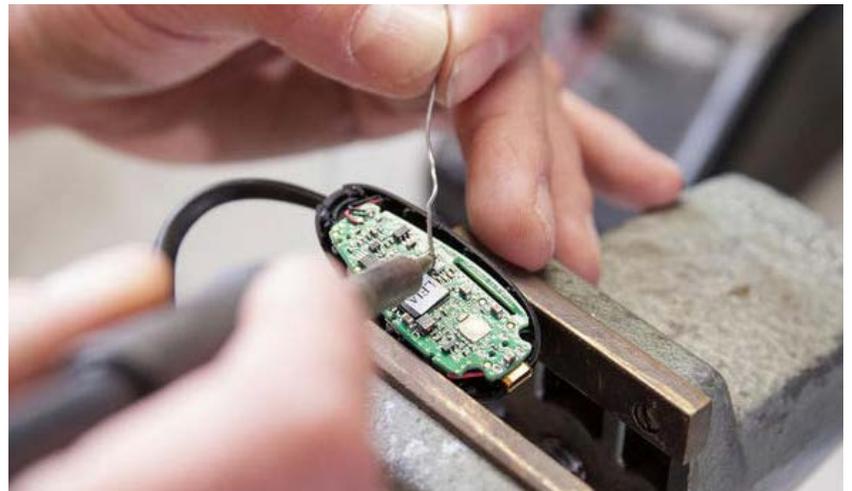
The Canadian Council of Chief Executives list the top 6 skills sought by employers as:

- 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 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



DEPARTMENT OF
MATHEMATICS
AND ENGINEERING

Faculty of Engineering and
Applied Science

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