

Mathematics and Engineering



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 and control systems.

Degree **OPTIONS**

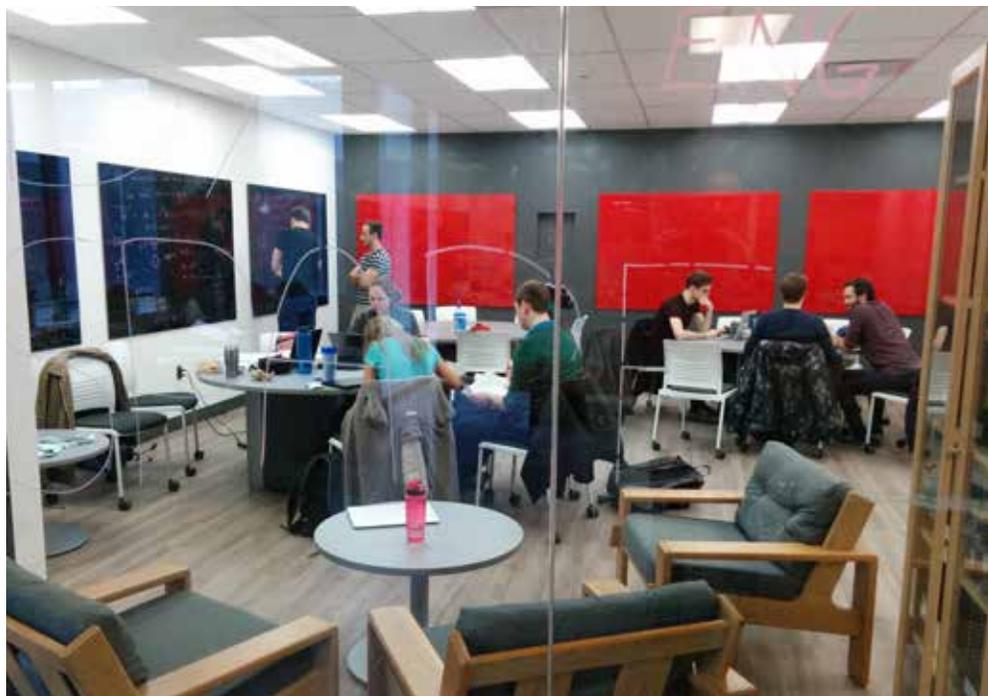
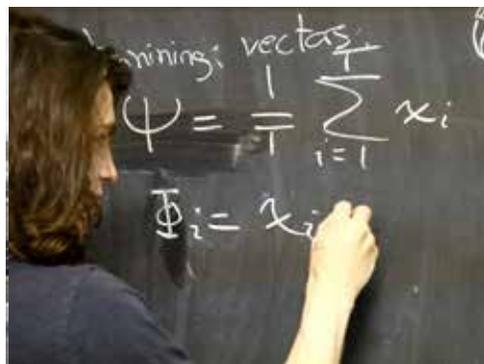
Bachelor of Applied Science in Engineering

Bachelor of Applied 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 five 4U and 4M courses, one of which must be English 4U. Calculus and Vectors 4U, Advanced Function 4U, Chemistry 4U, and Physics 4U are all required. A final competitive minimum grade of 80% must be obtained in all courses. Applicants outside of



"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."

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 Section 900, 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:

- Modern Control Theory
- Lagrangian Mechanics, Dynamics, and Control
- Information Theory
- Data Compression and Source Coding
- Control of Stochastic Systems
- Optimization Theory with Applications to Machine Learning
- Stochastic Processes and Applications
- Introduction to Coding Theory
- Number Theory and Cryptography

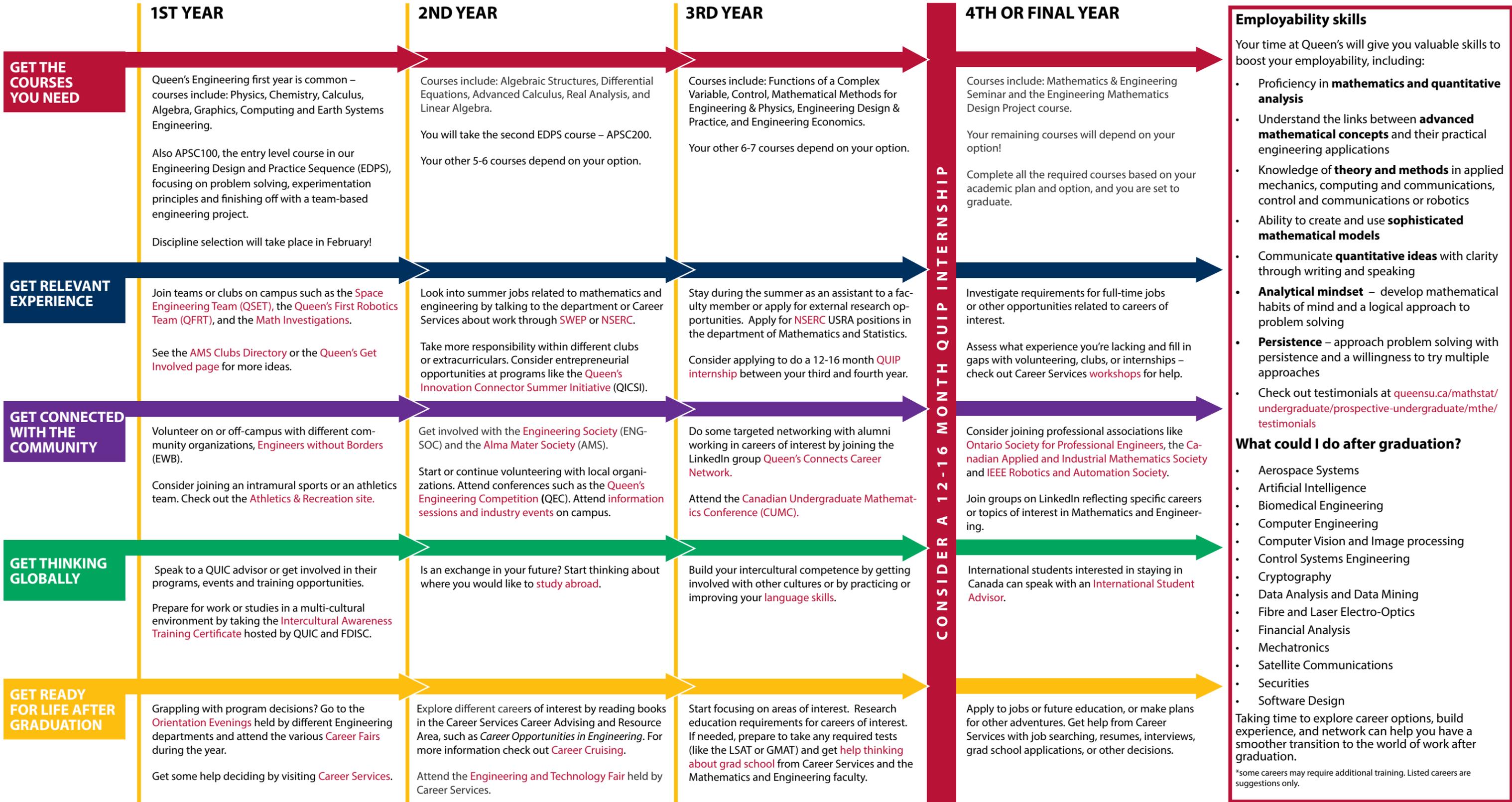
Acquire Skills. Gain Experience. Go Global.
That is a degree from Queen's. queensu.ca/mathstat/mthe

Mathematics and Engineering MAJOR MAP*

The coronavirus pandemic may impact how some activities are delivered in 2020-2021. Please check directly with the host of any activity on the map for the latest information.



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



Employability skills

Your time at Queen's will give you valuable skills to boost your employability, including:

- 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 queensu.ca/mathstat/undergraduate/prospective-undergraduate/mthe/testimonials

What could I do after graduation?

- Aerospace Systems
- Artificial Intelligence
- Biomedical Engineering
- Computer Engineering
- Computer Vision and Image processing
- Control Systems Engineering
- Cryptography
- Data Analysis and Data Mining
- Fibre and Laser Electro-Optics
- Financial Analysis
- Mechatronics
- Satellite Communications
- Securities
- Software Design

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

*some careers may require additional training. Listed careers are suggestions only.

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.

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. Queen's wants you to succeed! Check out the [Student Affairs website](#) for available resources.

QUIP QUEEN'S UNDERGRADUATE INTERNSHIP PROGRAM

START DATES
in May, September,
or January

POSITIONS
are paid and
full-time

WORK TERMS
are 12-16 months
long

PROGRAM OVERVIEW

- Graduate with "Professional Internship" on your degree.
- Learn about current advances, practices and technologies in business and industry.
- Test drive a career, earn a competitive salary, and get real world experience.

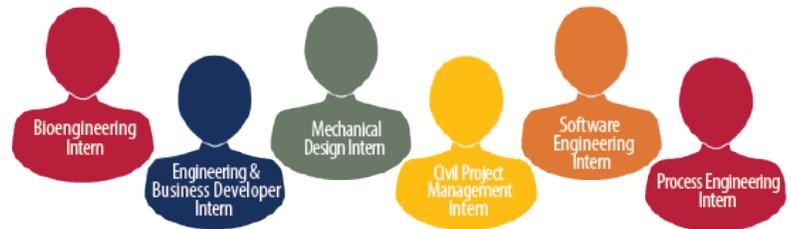
ELIGIBILITY

- 2nd or 3rd Year Students
- Minimum GPA of 1.9

WHY QUIP?

- Gain a year of career-related work experience.
- Build network connections.
- Receive support from Queen's staff in job search and during internship.

SAMPLE PAST INTERNSHIPS



For more information, contact quip@queensu.ca or visit the [Program Website](#).

Why study in Kingston?

For 175 years, our community has been more than a collection of bright minds – Queen's has attracted students with an ambitious spirit. Queen's has the highest retention rates, the highest graduation rates, and one of the highest employment rates among recent graduates. We are a research intensive university focused on the undergraduate experience. The BBC has identified Kingston as one of the GREATEST UNIVERSITY TOWNS in the world – and it is often awarded the safest city in Canada. It is a university city at the core; just a quick drive to Toronto, Montreal, Ottawa and even New York. A university with more clubs per capita than any other university in Canada, and a city with more restaurants per capita than any other city in North America – you will have the experience of a lifetime at Queen's – and graduate with a degree that is globally recognized among the best.

We're closer than you think



DEPARTMENT OF
**MATHEMATICS
AND STATISTICS**
MATHEMATICS AND ENGINEERING PROGRAM

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