

Computer Engineering

Queen's
UNIVERSITY

FACULTY OF
ENGINEERING AND
APPLIED SCIENCE

Get to know **COMPUTER ENGINEERING**

The information and communication technology of our knowledge-based society places computer engineers at the hub of a computing revolution that is constantly changing the way people live and work. In this program, you will study circuits, electronics, digital systems, microprocessors, computer architecture, data structures, algorithms, computer networks, operating systems, and software specification and development. You may choose to specialize in computer hardware, computer systems, software engineering, or mechatronics streams of specialization, and complement your core knowledge with advanced topics in electrical and computer engineering.

Degree **OPTIONS**

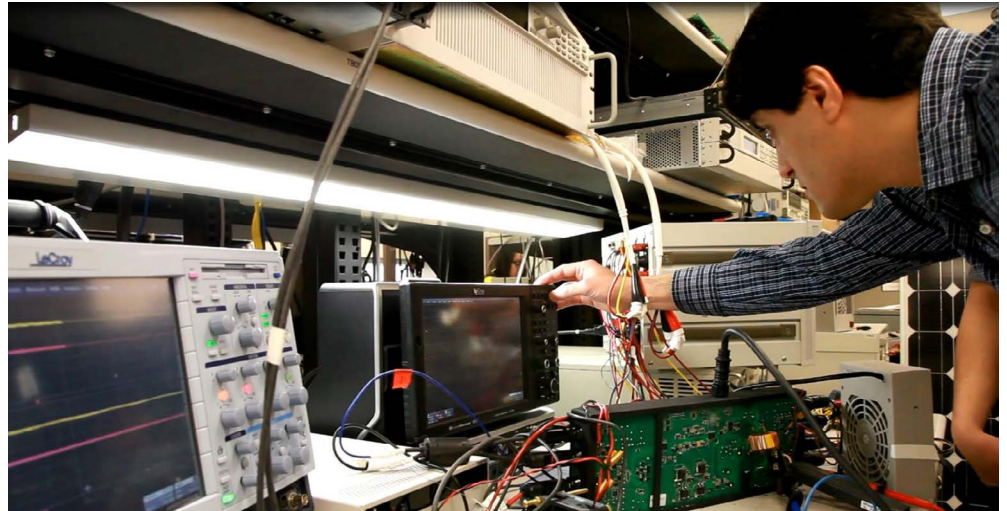
Bachelor of Science in Engineering

Bachelor of Science in Engineering with Professional Internship

Specialization in Computer Hardware / Computer Systems / Software Engineering / Mechatronics

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, 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.



"Our undergraduate faculty-to-student ratio is among the highest in the country and translates to a very direct and personal educational experience for our students."

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**

Computer 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:

- Computer Vision
- Game Architecture
- Software Architecture
- Advanced User Interface Design
- Advanced Database Systems
- Software Requirements
- Computer System Architecture

ECEi - **INNOVATION STREAM**

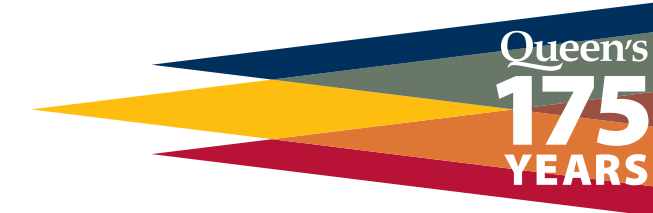
Consider Queen's Electrical & Computer Innovation Stream, focused on developing entrepreneurial skills, alongside the in-depth, world-class technical education that is the hallmark of Queen's Engineering. Students apply directly from OUAC with admission requirements for ECEi being the same as QE.

With admission limited to 50 students, you will receive an enriched curriculum that builds on Engineering's common first year, participate in team-based learning that focuses on product development and prototype demonstration, and network with like-minded students and present your unique ideas. If you pass all of your first year courses you are guaranteed a place in 2nd year in either the Electrical Engineering Innovation (EEi) stream or Computer Engineering Innovation (CEi) stream.

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

Computer 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?**
- Applications developer
 - Banking
 - Business administration
 - Business analyst
 - Chip architect
 - Computer architect
 - Computer engineer
 - Consumer services
 - Data processing
 - Database administration
 - Education
 - Electronic commerce
 - Finance
 - Game development
 - Informatics
 - Integrated circuit design
 - Law
 - Manufacturing
 - Mechatronics
 - Medical research
 - Network engineer
 - Online security
 - Power generation
 - Public administration
 - Robotics
 - Security
 - Software and hardware analysis and design
 - System support
 - Telecommunications
- *some careers may require additional training

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

Computer 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

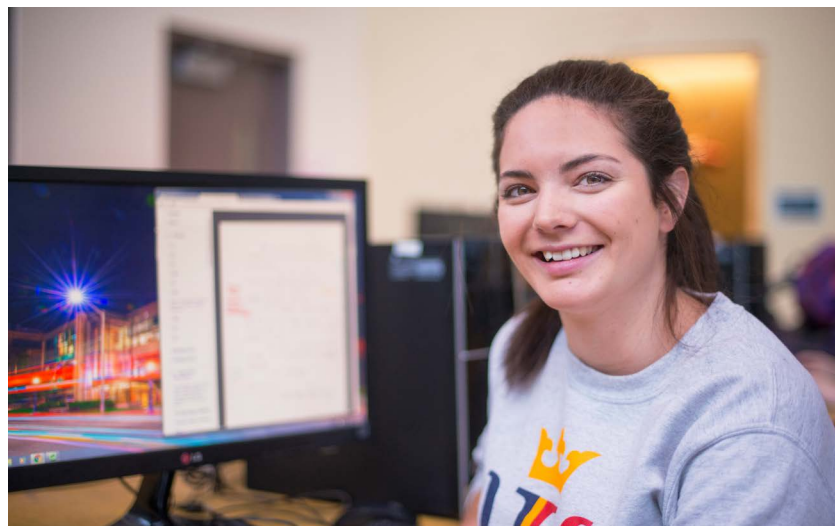
The Canadian Council of Chief Executives list the top 6 skills sought by employers as:

- 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 COMPUTER ENGINEERING?

- Understanding of computer systems, computer hardware, electronics, and software engineering
- Knowledge of research techniques and methods of data analysis
- Analytical and logical thinking
- Problem solving
- Conduct scientific research and summarize findings
- Proficiency in mathematics – solve mathematical problems and analyze quantitative information
- Oral and written communication – explain technical information to others in reports and presentations
- Work independently and in a team on a project
- Time and resource management



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