Queen’s wants you to succeed! Check out the successful, both academically and personally. While working through your degree, you will have additional requirements.

**Student Affairs website**

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.

**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.

**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.

**Computer Engineering**

**MAJOR MAP**

**Sample Past Internships**

- Biomedical Imaging
- Engineer-In-A-Station
- Electrical Engineering
- Mechanical Engineering
- Software Development
- Mechatronics

**Eligibility**

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

**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.

**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.

**Start Dates**

- May, September, or January

**Positions**

- Paid and full-time

**Work Terms**

- 12-16 months long

**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 Applied Science in Engineering

Bachelor of Applied Science in Engineering with Professional Internship

Specialization in Computer Hardware / Computer Engineering

Specialization in Computer Software Engineering / Computer Systems

Specialization in Mechatronics

**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 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**

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
- Artificial Intelligence
- Machine Learning
- Advanced User Interface Design
- Advanced Database Systems
- Software Requirements
- Computer System Architecture

**“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.”**

**computer.queensu.ca**

**Acquire Skills. Gain Experience. Go Global.**

That is a degree from Queen’s.

ece.queensu.ca
Computer Engineering MAJOR MAP *

1ST YEAR

- Queen's Engineering first year is common – courses include: Physics, Chemistry, Calculus, Algebra, Graphic, 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!

2ND YEAR

- You will take the second EDPS course – APSC200, plus one Complementary Studies course. For CEi students, the Complementary Studies course required is Introduction to Business for Entrepreneurs.
- Discipline selection will take place in February!

3RD YEAR

- You will also take the Electrical and Computer Engineering Design Course. You will also need to take 2 Technical Electives, plus one Complementary Studies course. CEi students take two predetermined Complementary Studies courses.

4TH OR FINAL YEAR

- All Computer Engineering students follow up their ELEC 390 ECE Design course with the Computer Engineering Project course (ELEC 498). CEi students follow up their Entrepreneurial ECE Design course with Entrepreneurial Computer Engineering Project course.
- You will also need to choose approximately 7-8 Technical Electives (totaling 22.5 units), plus one Complementary Studies course. You may also take a Research Project course (ELEC 497). For CEi, the Complementary Studies course is Pitching and Launching your Venture.

GET THE COURSES YOU NEED

- Join teams or clubs on campus such as EnGenuity Club, OCET and the Solar Design Team (QSDT).
- Apply for first year positions such in ENGGCLUB or the Queen’s Get Involved page for more ideas.

GET RELEVANT EXPERIENCE

- Look into summer jobs related to computer engineering by talking to the department or Career Services about work through SWEP or NSERC.
- Take more responsibility within different clubs or extracurriculars. Consider entrepreneurial opportunities at programs like the Queen’s Innovation Connector Summer Initiative (QICS).

GET CONNECTED WITH THE COMMUNITY

- Volunteer on or off campus with different community organizations, such as Queen’s Game Developers Club, Science Quest, and Mostly Autonomous Sailboat Team (MAST).
- Get involved with the Engineering Society (ENGSO).
- Join the Queen’s Electrical and Computer Engineering Club and go to events such as the ECE Lunch with Prof.
- Join the Queen’s student branch of the Institute of Electrical and Electronics Engineers (IEEE).

GET THINKING GLOBALLY

- Is an exchange in your future? Start thinking about where you would like to study abroad. Apply in January for a 3rd year exchange through your faculty’s International Office.
- Build your intercultural competence by getting involved with different cultures or by practicing or improving your language skills.

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.
- Explore different careers of interest by reading books in the Career Services Career Advising and Resource Area, such as Vault Guide to Technology Careers, talking to people whose jobs interest you, or finding engineering alumni on LinkedIn.
- Explore different 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.
- Start focusing on areas of interest. Research education requirements for careers of interest. If needed, take any required tests like the LSAT or GMAT and get help thinking about grad school from Career Services.
- Do some targeted networking with alumni working in careers of interest by joining the LinkedIn group Queen’s Connects Career Network.
- Attend conferences like the Queen’s Engineering Competition (QEC) and the Electrical and Computer Engineering Competition.
- Consider joining professional associations like the Institute of Electrical and Electronics Engineers and Professional Engineers, Ontario.
- Join groups on LinkedIn reflecting specific careers or topics of interest in Electrical Engineering.

WHERE COULD I GO AFTER GRADUATION?

- Investigate requirements for full-time jobs or other opportunities related to careers of interest.
- Internships.
- Work independently.
- Consider entrepreneurial opportunities at programs like Queen’s Get Involved page for more ideas.
- Participate in Engineering Society (ENGSO) activities.
- Consider doing an International Exchange Program.
- Consider applying to do a 12-16 month QUIP internship.

EMPLOYABILITY SKILLS

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

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

*This map is intended to provide suggestions for activities and careers, but everyone's abilities, experiences, and constraints are different. Build your own Major Map using our online My Major Map tool.

© Career Services, Queen's University, 2019 - 2020