Civil Engineering

Get to know

CIVIL ENGINEERING

We go about our lives within a physical environment created by civil engineers: homes, schools, office buildings, highways, bridges, subway systems, airports, river and coastal systems and green landfills. As a civil engineering student, you will study how to plan, design and build these structures and systems with an environmentally-respectful approach. As part of its real-world preparation, this innovative program emphasizes self-learning, teamwork, communication, leadership and problem solving. Courses and electives are grouped into structural, environmental, hydrotechnical, and geotechnical streams.

“We envision the nourishment of a naturally-developing thread in our program which is focused on the sustainability of both the natural and built environment.”

Degree OPTIONS

Bachelor of Applied Science in Engineering
Bachelor of Applied Science in Engineering with Professional Internship
Specialization in Structural Design, Geotechnical Engineering, Hydraulics, and Environmental Engineering

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, 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.

Course HIGHLIGHTS

Civil 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:

- Geotechnical Engineering
- Infrastructure Rehabilitation
- Civil Week
- Reinforced Concrete Design
- Geoenvironmental Design
- River Engineering


That is a degree from Queen’s.

civil.queensu.ca
Civil Engineering **MAJOR MAP**

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

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### GET THE COURSES YOU NEED

**1ST YEAR**
- Queen's Engineering first year is common – courses include: Physics, Chemistry, Calculus, Algebra, Graphics, Computing and Earth Systems Engineering.
- Also APS1C00, 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**
- Students will start their second year by participating in the first of three Civil Weeks.
- Courses include: Chemistry, Mechanics, Applied Mathematics, Materials, Numerical Methods, Hydraulics and Engineering Economics.
- You will also take the second EDPS course – APS2C00. Finally, you will take one List A (Humanities and Social Science) Complementary Studies course.

**3RD YEAR**
- Students will start their third year by participating in their second Civil Week.
- Courses include: Structural Analysis, Geotechnical Engineering, Hydraulics, Groundwater Engineering, Structural Steel Design, Water & Wastewater Engineering and Design & Practice.
- You will also take one List A Complementary Studies course, plus one Management Elective.

**4TH OR FINAL YEAR**
- Students will start their fourth year by participating in their third Civil Week.
- All CIVL students take a core course in Civil Engineering Design and Practice. You will also need to take 8 Technical Electives, which provide the opportunity to specialize or do a research thesis (CIVL 500) as one of the electives.
- Finally, you will need to choose one List A, B, C, or D Complementary Studies course, and you are set to graduate!

### GET RELEVANT EXPERIENCE

- **Join teams or clubs on campus such as the Concrete Canoe Team.**
- **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 Let’s Talk Science (LTS), Science Quest, and Engineers without Borders (EWB).**
- **Consider joining an intramural sports or an athletics team. Check out the Athletics & Recreation site.**

### GET THINKING GLOBALLY

- **Speak to a QUIC advisor or get involved in their programs, events and training opportunities.**
- **Prepare for work or studies in a multi-cultural environment by taking QUIC’s Intercultural Competency Certificate, and research possible immigration regulations.**
- **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 other cultures or by practicing or improving your language skills.**
- **Explore different careers of interest by reading books in the Career Services Career Advising and Resource Area, such as Civil Engineering Careers. For more information check out Career Cruising or by finding and connecting with alumni on LinkedIn.**
- **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.**

### 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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### Employability skills

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

- **Knowledge of civil engineering methods and theory**
- **Apply principles of physics and mathematics to the design of physical environments such as bridges, buildings, and dams**
- **Knowledge of the interactions among land use, water use, and environment quality**
- **Work independently and in teams**
- **Team work - work with other students on a project**
- **Oral and written communication** - engineering report writing skills and presentation skills
- **Leadership**
- **Time management and organization – manage several ongoing projects**

### Where could I go after graduation?

- **Archaeology**
- **Architecture**
- **Environmental engineering**
- **Design engineer**
- **Geographic information systems**
- **Geomatics**
- **Industrial engineering**
- **International development**
- **Landscape architecture**
- **Mapping, surveying & cartography**
- **Materials engineering**
- **Mining engineering**
- **Occupational health and safety**
- **Public administration**
- **Real estate**
- **Robotics**
- **Strategic planning**
- **Structural engineer**
- **Water resources engineering**
- **Urban and regional planning**

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

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*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.*

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

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, and Queen’s wants you to succeed! Check out the Student Affairs website for available resources.

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 us as one of the GREATEST UNIVERSITY TOWNS in the world – and is often awarded the safest city in Canada. We are 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.

For more information, contact quip@queensu.ca or visit the Program Website.