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**

## 1ST YEAR

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

- Students will start their second year by participating in Civil Week.
- Courses include: Chemistry, Mechanics, Applied Mathematics, Materials, Numerical Methods, Hydraulics and Engineering Economics.
- You will also take the second EDPS course – APSC200. Finally, you will take one List A (Humanities and Social Science) Complementary Studies course.

## 3RD YEAR

- **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

- All Civil 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 (CIVIL 500) as one of the electives.
- Finally, you will need to choose one List B, C, or D Complementary Studies course, and you are set to graduate!

## 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, water use, and environment quality
- Work independently and become a life-long learner
- 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.

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

---

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

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.