Bachelor of Engineering

Civil Engineering

Faculty of Engineering

Photo credit – Infrastructure Canada

What is civil engineering?

Civil engineers create the infrastructure of modern society—from roadways to water management to the buildings we live in. Environmental engineers ensure sustainable development of water, land, and air resources while minimizing impact on our environment, climate, and public health. Geotechnical engineers study the behaviour of soils under the influence of loading forces to stabilize foundations. Water resources engineers quantify and manage components of the hydrologic cycle such as precipitations, river flows, and groundwater dynamics. Structural engineers conceive, analyse, design, and construct buildings and bridges capable of resisting loads arising from internal and external forces. Transportation engineers plan, design, build, operate, and maintain transportation systems ensuring the safe, efficient, and convenient movement of people and goods.

Is this program for me?

Civil engineering provides students with a strong foundation in math, chemistry, and physics that can be applied to solving a wide range of problems. The complex challenges faced by civil engineers require interdisciplinary solutions and strong communication skills for related fields such as financial engineering and the public health sector.

There are opportunities for students to spend a semester at a university abroad, or to obtain in-depth practical and professional experience by participating in the Engineering Internship Program. Minor programs are available in areas such as construction project management, environmental engineering, management, and software engineering.

Coursework and research areas

The first year includes general science courses in math, chemistry, and physics. Québec CEGEP students typically receive one-year advanced standing. In second and third years, students take courses in general engineering and civil engineering before choosing courses for their fourth-year specialization in one of the five main areas of civil engineering: environmental, geotechnical, water resource, structural, or transportation engineering. In their final semester, students participate in a design project course and gain hands-on practical experience working on a real-world project under the guidance of professionals. Past topics range from working with a water treatment plant to designing structures to planning transport routes.

McGill | Faculty of Engineering

Leilah Y. K. Sory
B.Eng. 2021

Leilah, alumna of the Department of Civil Engineering, is currently pursuing graduate studies with a Master of Science in Building Technology at the Massachusetts Institute of Technology (MIT), Cambridge, MA (USA). Her research lies at the intersection of architecture, structural engineering and computational design. Leilah is developing better tools to evaluate buildings' environmental performance in early-stage design and reduce carbon emissions. McGill played a pivotal role in her education: "I am forever grateful for my experience at McGill because it gave me strong technical skills, amazing experiential learning opportunities, and a supportive network of friends and mentors who have helped me shape my career path."

MADE by McGill

Why McGill?

It's an exciting time to be in the Undergraduate Program in Civil Engineering at McGill. As the world population and urban areas continue to grow and as natural resources become more limited, the role of civil engineering has never been more vital. Through their work in developing solutions to these global challenges, civil engineers are leading major changes in energy, transportation, water management and treatment, sustainable construction and materials, and adaptation to climate change.

How do I apply?

Admissions information:

www.mcgill.ca/undergraduate-admissions/apply

What can I do when I graduate?

Civil engineering graduates use and develop modern technology to meet the needs of our changing society. Concerns for environmental quality, climate change, energy conservation, infrastructure restoration, waste reduction, and public safety now shape the role of civil engineers. As a result, civil engineers work in a variety of fields, including construction, transportation, alternative energy, manufacturing and processing, material science, financial services, and municipal engineering. Their problem-solving and communication skills make civil engineers excellent consultants, entrepreneurs, managers, and executives.

Recent graduates from the program have gone on to careers in a variety of industries such as:

WSP
Transportation Planner

Inspec-Sol
Geotechnical Project Coordinator

SNC-Lavalin
Jr. Structural Engineer

Hatch
Information Manager

CIMA+
Project Engineering-Water

GBI
Project Manager

Student life and engagement

The Faculty of Engineering provides several opportunities to participate in a variety of clubs, activities, and student government. Below are a few groups students can join to connect with others and enhance their lives outside of the classroom:

- Civil Engineering Undergraduate Society (CEUS)
- Engineering Undergraduate Society (EUS)
- CSCE Canadian Society for Civil Engineering Student Chapter
- Bridge Building, Concrete Canoe
- McGill Engineers in Action
- Promoting Opportunities for Women in Engineering

Contact us

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www.mcgill.ca/engineering/students/undergraduate/mesc

Engineering Career Centre (ECC)
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