

# Bachelor of Engineering Chemical Engineering

Faculty of Engineering

## What is chemical engineering?

Chemical engineers design, operate, model, and optimize a variety of systems and processes. They fabricate new products and technologies to sustain our growing population and our increasing demand on the world's natural resources. What a chemist might produce in a test tube, a chemical engineer could produce by the ton while ensuring the process is sustainable and environmentally friendly. This requires efficient and effective systems, and as a result, chemical engineers are involved in the complete life cycle—from the extraction of raw material and its transformation and integration into commercial goods and equipment, to its recycling and safe disposal.

## Is this program for me?

Chemical engineers are good at math, chemistry, and physics. They are interested in exploring how to transform something from one state

to another and like to think about new ways of solving related problems. They also have good communication skills and enjoy working with others.

## 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 subsequent years, students take required courses in the areas of general engineering, chemical engineering, physical and organic chemistry, and a range of specialized courses. Students learn about chemical engineering principles, thermodynamics and transport phenomena, materials science and engineering, biotechnologies, energy science and engineering, process design, instrumentation and control.

In parallel, students have the possibility to take a number of specialized complementary courses

in various areas of interest, such as electrochemical, biomedical, plasma, environmental, and advanced materials engineering.

## Why McGill?

McGill's Undergraduate Program in Chemical Engineering program is one of the top chemical engineering programs in the world, and is unique in engineering in that an equal number of women and men form the undergraduate population. Students work closely with each other throughout their degree and are very a tight-knit group. The professional staff is young and dynamic, composed of 18 professors who continually strive to enhance their teaching methods, as well as numerous laboratory technicians and graduate students directly involved in the teaching of practical skills and safe laboratory practices.



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## How do I apply?

Admissions information:

[www.mcgill.ca/undergraduate-admissions/apply](http://www.mcgill.ca/undergraduate-admissions/apply)

## What can I do when I graduate?

A degree in chemical engineering provides students with skills and experience to design, optimize, and operate a wide range of systems, from production and manufacturing systems to corporate, financial, and economic systems. Chemical engineers, therefore, work in many fields, including pharmaceuticals, biotechnology and medical devices, pulp and paper, food and beverage processing, petrochemicals, energy, advanced materials, mining, environmental engineering, as well as production and manufacturing. They are involved in creating processes that are efficient, safe, environmentally friendly, and sustainable from economic, societal, and environmental points of view. This includes developing cleaner and more energy efficient fuels and methods of treating and disposing of waste.

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

### **Airboss Defense**

Polymer Research Engineer

### **The Boston Consulting Group**

Business Associate

### **Hatch**

Process Engineer Consultant

### **Schlumberger**

Field Engineer

### **Shell Canada**

Drilling Engineer-in-Training

### **SNC-Lavalin**

Jr. Process Engineer

connect with others and enhance their life outside of the classroom:

- ▲ Chemical Engineering Student Society
- ▲ Engineering Student Society (EUS)
- ▲ Engineers Without Borders
- ▲ Canadian Society for Chemical Engineers (CSCHE)
- ▲ CHEM-E Car
- ▲ Promoting Opportunities for Women

## 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