

# Chemical Engineering

## MAJOR MAP



### 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.

A balanced approach leads to long-term success. While you will learn a lot from your studies, taking time to get relevant experience outside of the classroom, build your network, and gain international experience, will position you to be more competitive in your job search or grad school applications.

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.

## Succeed in the workplace

### What employers want

The Canadian Council of Chief Executives list the top 6 skills sought by employers as:

- 1 People skills
- 2 Communication skills
- 3 Problem-solving skills
- 4 Analytical abilities
- 5 Leadership skills
- 6 Industry-specific knowledge

Take the time to think about the unique skills you have developed at Queen's, starting with the skills list here for ideas. Explaining your strengths with compelling examples will be important for applications to employers and further education. For help, check out the **Career Services skills workshop**.

### What can I learn studying CHEMICAL ENGINEERING?

- **Knowledge of chemical engineering theory and methods**
- **Proficiency in mathematics**
- **Ability to apply physics, chemistry and biology principles to practical engineering projects**
- **Experience working on hands-on engineering projects**
- **Technical knowledge - use software to create mathematical models and analyze data**
- **Research skills - conduct research and collect data**
- **Complex problem solving - approach problems from various perspectives**
- **Ability to work independently and in teams**
- **Written and oral communication - write reports and give presentations to a knowledgeable audience**
- **Time and resource management**



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# Chemical Engineering

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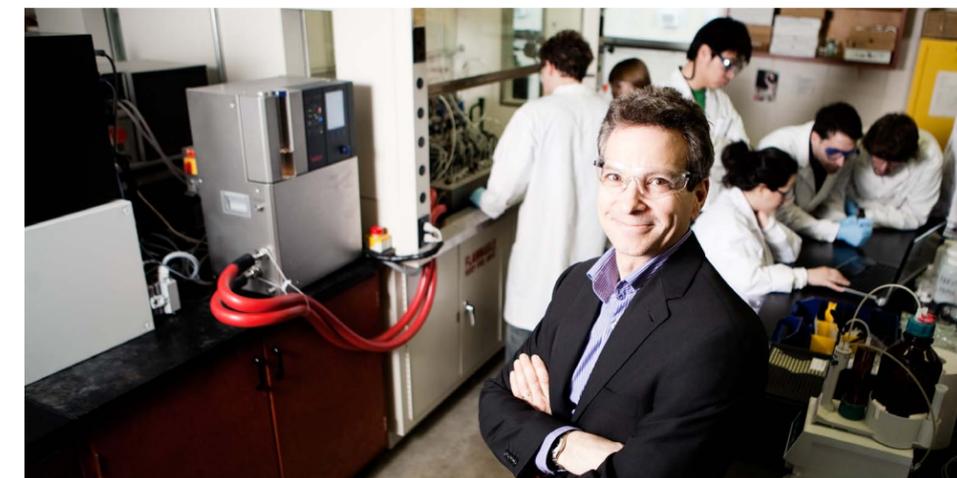
FACULTY OF  
**ENGINEERING AND  
APPLIED SCIENCE**

## Get to know CHEMICAL ENGINEERING

Society relies daily on products such as fuel, pharmaceuticals, advanced composites, semiconductors, magnetic and optical storage devices, agricultural products, light-weight materials, coatings, synthetic fibers and personal care products. Chemical Engineers develop new advanced materials and design the processes that convert raw materials into value-added products.

Chemical Engineering is a broadly based engineering discipline, which combines the study of mathematics, chemistry, physics and biology, with engineering science, design, and economics. You will learn how to design safe, efficient, environmentally-friendly and economical processes. You will also acquire direct experience with pilot-scale chemical process equipment and simulators. Queen's Chemical Engineering offers options in Chemical Process Engineering and in Biochemical Engineering.

Areas of specialization through choice of electives: biochemical, biomedical, environmental, process systems engineering, energy, and materials.



*"Semiconductor production, microchips, metals, mineral processing, paper products, petroleum and petrochemicals, plastics, forest products, pharmaceuticals and foods are just some of the sectors in which chemical engineers work."*

### Degree **OPTIONS**

**Bachelor of Science in Engineering**

**Bachelor of Science in Engineering with Professional Internship**

*Option in Biochemical Engineering / Process Engineering*

### Queen's **ADMISSIONS**

Students apply to Queen's Engineering (QE) through the OUAC (Ontario University Application Centre) website. Secondary School prerequisites include six 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.

### A Common **START**

Queen's is unique in offering a common First Year along with an open discipline choice. When you do choose your program, you

don't have to worry about caps or quotas. Provided you pass all of your First Year courses, you are guaranteed a place in your engineering program of choice. Queen's also offers J-Section, 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**

Chemical 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:

- Environmental Biotechnology
- Biomedical Engineering
- Pharmaceutical Technology
- Bioremediation
- Polymer Formulations and Process Technology
- Innovation & Entrepreneurship

**Acquire Skills. Gain Experience. Go Global.**  
That is a degree from Queen's. [chemeng.queensu.ca](http://chemeng.queensu.ca)

