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.

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.

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.

For more information, contact quip@queensu.ca or visit the Program Website. 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 retention rates among recent graduates. We are a research intensive university focused on the undergraduate experience. The IABC has identified Kingston as one of the BEST 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 Vaughan - and it is often awarded the safest city in Canada.

UNIVERSITY TOWNS in the world – and it is often awarded the safest city in Canada.

In North America – you will have 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.

Chemical Engineering

QUIP QUEEN’S UNDERGRADUATE INTERNSHIP PROGRAM

19 Division Street
(613) 533-2765
Dupuis Hall, Room 2
chemeng.queensu.ca

START DATES
in May, September, or January

POSITIONS are paid and
10-hour nine WORK TERMS are 12-15 months long

• Graduate with “Professional Internship” on your degree.
• Learn about current advances, practices and technologies in business and industry.
• Test drive a career, earn a competitive salary, and get real world experience.

2nd or 3rd Year Students
Minimum GPA of 1.9

• Gain a year of career-related work experience.
• Build network connections.
• Receive support from Queen’s staff in job search and during internship.

ELIGIBILITY

WHY QUIP?

*Program Overview

SAMPLE PAST INTERNSHIPS

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

HIGHLIGHTS

Gain Experience.
Go Global.
That is a degree from Queen’s.

Acquire Skills.

That is a degree from Queen’s.

Degree OPTIONS

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

Option in Bioengineering / Process Engineering

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:

• Design of Manufacturing processes
• Technology, Engineering and Management Process Dynamics and Control
• Mitigation of Industrial Pollution
• Engineering Innovation & Entrepreneurship
• Biomedical Engineering
• Pharmaceutical Technology
• Bionanomedia
• Polymer Formulations and Processing Technology

That is a degree from Queen’s.

Acquire Skills.
Chemical 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! You will also choose your Sub-Plan: Chemical Process Engineering (CHE1) or Bioengineering (CHE2).

2ND YEAR


You will also take the second EDPS course – APSC200, as well as a laboratory project course and one additional course based on your option: Transport Phenomena Fundamentals (CHE1) or Cell Based Engineering Principles (CHE2).

3RD YEAR


You will also take another laboratory projects course, as well as additional courses based on your option: Environmental Biotechnology and Biomedical Engineering (CHE2) or Industrial Catalysis (CHE1).

4TH OR FINAL YEAR

Courses include: Strategies for Process Investigations, Design & Manufacturing Processes, and Transport Phenomena.

You will also choose 5-6 courses based on your option, which may include research thesis project, multi-disciplinary design projects or Technology Engineering and Management (TEAM) and you are set to graduate!

CONSIDER A 12-16 MONTH QUIP INTERNSHIP

Employability skills

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

• 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
• Sustainability and the impact of engineering on society

Where could I go after graduation?

• Agricultural sciences
• Biochemistry
• Biomedical engineering
• Chemical process engineering
• Biotechnology
• Environmental management
• Fluid dynamics - aerospace
• Finance & financial analysis
• Food industry, nutrition & dietetics
• Materials processing
• Nanotechnology
• Patent law
• Pharmaceutical engineering
• Planning - urban and regional
• Polymer/rubber/plastic technology
• Radiology
• Toxicology

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

*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.

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