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, and Queen’s wants you to succeed! Check out the Student Affairs website for available resources.

Get to know CHEMICAL ENGINEERING

Society relies daily on products such as fuel, pharmaceuticals, advanced composites, semiconductors, magnetic and optical storage devices, agricultural products, lightweight 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.

Degree OPTIONS

Bachelor of Applied Science
Bachelor of Applied Science with Professional Internship

Option in Bioengineering / Process Engineering

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:

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

That is a degree from Queen's.

chemeng.queensu.ca
Chemical Engineering MAJOR MAP *

BACHELOR OF APPLIED SCIENCE | BACHELOR OF APPLIED SCIENCE WITH PROFESSIONAL INTERNSHIP

GET THE COURSES YOU NEED

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 of 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!

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
• Cytotechnology
• Environmental management
• Fluid dynamics - aerospace
• Finance & financial analysis
• Food industry, nutrition & dietetics
• Mineral 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 make a smoother transition to the world of work after graduation.

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