Get to know

ENGINEERING CHEMISTRY

As the only program of its kind in North America, Engineering Chemistry provides in-depth knowledge of chemistry in addition to the engineering core knowledge. Engineering Chemistry graduates are experts in the chemistry behind industrial processes and combine a strong background in both chemistry and chemical engineering to treat problems of industrial interest. In this program, you will study applied organic chemistry, inorganic chemistry, reactivity principles, methods of determining structure, and you will acquire knowledge of materials at a molecular level. You will be able to apply this core chemical knowledge to design and improve processes and materials, ranging from fuel cells to pharmaceuticals.

Areas of specialization through selection of electives and thesis project include biosciences, environmental, materials science, process chemistry.

“The undergraduate program in Engineering Chemistry has also been accredited by the Canadian Society for Chemistry; therefore, our graduates have this distinction.”

Degree OPTIONS

Bachelor of Science in Engineering

Bachelor of Science in Engineering with Professional Internship

Specializations in Biosciences, Environmental, Materials and Process Chemistry

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

Engineering Chemistry 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:

- Electrochemical Engineering
- Industrial Catalysis
- Quantum Mechanics and Simulation
- Environmental and Green Chemistry
- Polymer Chemistry

That is a degree from Queen’s.

chemeng.queensu.ca
GET THE COURSES YOU NEED

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!

GET RELEVANT EXPERIENCE

Join teams or clubs on campus such as the Solar Design Team (QDST), Fuel Cell Team (QFCT), or the Queen's Engineering and Commodities Association (QECA).

Look for first year positions in ENSGOC such as First Year Project Coordinators (FYPCCOs). See the CCOD or AMS Clubs Directory for more ideas.

GET CONNECTED WITH THE COMMUNITY

Volunteer on or off campus with different community organizations, such as ENSGOC EngWeek Committee, the ENSGOC External Relations Committee or a local charity like Martha's Table.

GET THINKING GLOBALLY

The Queen's University International Centre is your first stop to learn how to internationalize your degree or to leverage your existing cross-cultural experience. Speak to a QUC advisor or get involved in their programs, events and training opportunities.

GET READY FOR LIFE AFTER GRADUATION

Grappling with program decisions? Go to the Orientation Evenings held by different Engineering departments and attend the various Career Fairs during the year.

Explore different careers of interest by reading books in the Career Services Career Advising and Resource Area, such as Nontraditional Careers for Chemists. For more information check out Career Cruising or by finding and connecting with alumni on LinkedIn.

Start focusing on areas of interest. Research education requirements for careers of interest. If needed, prepare to take any required tests (like the LSAT or GMAT) and get help thinking about grad school from Career Service.

WHERE COULD I GO AFTER GRADUATION?

Agricultural sciences
Banking
Biochemistry
Biomedical engineering
Biototechnology
Business administration and management
Chemical/process engineering
Consulting engineers
Consumer services
Diagnostic medical technology
Dietetics
Education
Environmental conservation
Environmental engineering
Environmental management
Finance and banking
Food science and technology
Forensic science
Fuels and petrochemicals
Industrial chemicals
International development
Manufacturing
Occupational health and safety
Oil and Gas
Patent law
Pharmaceuticals
Polymer/rubber/plastic technology
Public administration
Public and private research
Strategic planning
Waste management

Visit careers.queensu.ca/majormap.html for the online version with links!
Engineering Chemistry

MAJOR MAP

How to use this map
• Got questions about careers and classes?
• Feeling a little lost or overwhelmed by choices?
• Wondering what you are “supposed” to be doing?

Use this map to plan for success in five overlapping areas of career and academic life. Each map helps you explore possibilities, set goals and track your accomplishments. To make your own custom map, use the My Major Map tool.

Don’t stress if you haven’t done all of the suggested activities. The map is not a prescription – it’s a tool for finding your own way at Queen’s.

Getting what you need to succeed in the workplace

WHAT DO EMPLOYERS WANT?
In a recent survey from the Canadian Council of Chief Executives the top 6 skills sought by employers were:
1. People skills
2. Communication skills
3. Problem-solving skills
4. Analytical abilities
5. Leadership skills
6. Industry-specific knowledge

HOW DO I GET THE SKILLS I NEED?
It is important to develop a balanced skill set – many of which you will develop during your studies. To stand out, take advantage of experiential learning through the multitude of clubs and activities in and around Queen’s. Check out the Get Relevant Experience section of this map.

WHAT CAN I LEARN STUDYING ENGINEERING CHEMISTRY AT QUEEN’S?
• Knowledge of chemistry and materials at a molecular level
• Knowledge of chemical engineering theory and methods
• Problem solving – adopt an analytical approach to problems facing chemists and chemical engineers
• Written and oral communication – communicate research ideas and information in reports and presentations
• Ability to use modern computer software tools for simulating and analyzing chemical processes
• Proficiency in mathematics
• Understanding of scientific research methods and data collection techniques
• Time and resource management
• Ability to work independently and in teams

WHAT MAKES ME SPECIAL?
No one will get exactly the same experience as you. Take the time to think about what skills you have developed to be able to best explain them with compelling examples in future applications to employers and further education. For help with this, check out the Career Services skills workshop.

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