

# Chemistry

**BSc** | [www.yorku.ca/science/chemistry](http://www.yorku.ca/science/chemistry)

## Admission Requirements

- ENG4U, MHF4U, SCH4U, one addition 4 U or M science
- **Recommended:** SPH4U, MCV4U
- **Minimum admission average:** high 70s – mid 80s

## Program Overview

York's rejuvenated Chemistry program offers a variety of degree options, designed to give you an exciting and rewarding experience and to maximize your research and career opportunities. York offers several Honours four-year BSc programs in Chemistry as well as a Bachelors three-year program. The Specialized Honours programs are recognized and accredited by the Canadian Society for Chemistry.

Research in Chemistry is now also centred on four UN Sustainable Development Goals (SDGs): i) Good Health and Well-being, ii) Affordable and Clean Energy, iii) Responsible Consumption and Production, and iv) Climate Action that emphasize the state-of-the-art nature and broad impact of the discipline, as well as the career opportunities that are available for chemists.

York's premier Chemistry program is the Specialized Honours BSc in Chemistry, with exposure to subfields such as inorganic, organic, physical, analytical, theoretical, materials, and environmental chemistry. These broad subfields are the foundation for the highly diverse nature of the career opportunities for chemists. Chemistry is truly a central science, enabling employment that can range from waste management, water treatment and purification, to forensics, flavour and fragrance chemistry, food and drug chemistry, pharmaceuticals, biotechnology, mining, as well as materials science and engineering. Depending on your specific interests, you have access to a comprehensive choice of specialized courses that will prepare you for any of these career opportunities.

York also offers a Specialized Honours BSc degree in the field of Pharmaceutical & Biological Chemistry. The Pharmaceutical & Biological Chemistry stream explores the complex chemical systems of the biological world and their applications in medicine and health, the study of human genes, and the development of pharmaceutical materials.

Students in a Specialized Honours program will engage in a supervised research study, which can include original laboratory work, a theoretical project supported by studies of the relevant scientific literature and/or field investigations. There will also be additional opportunities for exceptional students to engage in laboratory work and research during summer terms or part time during the school year.

## First Year Courses:

- Chemistry
- Physics and/or Biology
- Calculus
- Computer Use
- General Education Course

## Second Year Courses:

- Analytical Chemistry
- Inorganic Chemistry
- Organic Chemistry
- Physical Chemistry
- General Education Course

## Upper Year Options:

- Biological Chemistry
- Environmental Chemistry
- Industrial and Green Chemistry
- Macromolecules of Biochemical Interest
- Instrumental Analysis
- Pharmaceutical Discovery
- Research Project (student/professor research collaboration)

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**Experiential Education**

The Faculty of Science provides a rich diversity of opportunities for undergraduate students to engage in Experiential Education. Both the Co-op and Internship Program provides students in this program with an opportunity to integrate their classroom learning with hands-on, paid, work experiences related to their field of study.

Here are just a few of the companies you could have the opportunity to work for:

- Sanofi Pasteur
- Health Gene Corporation
- Parks Canada
- City of Toronto
- Apotex
- Dalton Pharma Services
- Taro Pharmaceuticals
- GSK Canada
- Toronto Research Chemicals

Visit [yorku.ca/science/students/experiential-education/](http://yorku.ca/science/students/experiential-education/) for more information.

**Possible Career Pathways**

Your studies in Chemistry at York will prepare you for a very diverse range of career options. These might include jobs in applied fields such as pulp and paper, petrochemicals, plastics, pharmaceuticals, cosmetics, protective coatings and polymers, or in biotechnology and other high-tech industries.

- Synthetic Chemist
- Research and Development Chemist
- Medicinal Chemist
- Instrumental Specialist
- Air Quality Specialist
- Water Quality Analyst
- Regulatory Affairs Specialist
- Quality Control Chemist
- Professional Schools – Medicine  
Dentistry, Pharmacy, Law, Business, etc.
- Education – elementary, high school, college, university
- Quality Assurance Chemist
- Process Development Chemist
- Forensic Lab Analyst
- Medical Laboratory Chemist

**Get In Touch**

**Domestic Students:**  
[science@yorku.ca](mailto:science@yorku.ca)

**International Students:**  
[intlsci@yorku.ca](mailto:intlsci@yorku.ca)

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“The Chemistry program provides hands on experience in a variety of different fields. While studying, I had the opportunity to attend Career Day and Lab Tours that helped me shape what I wanted to pursue after my undergrad. The Lab Tours provide information on what research fields are available within the department and how you can participate as a student. I also had great professors who helped me navigate through my program and encouraged me to participate in different fields.”

**- Samin, Chemistry Student**