

Chemistry (BSc)

Admission Requirements

Prerequisite Requirements for BSc:

- ENG4U, MHF4U, SCH4U
- Recommended: MCV4U, SPH4U
- Expected minimum admission average: high 70s – mid 80s

Program Overview

York's Chemistry program is noted for its close-knit research community and offers a variety of degree options, designed to give you an exciting and rewarding academic experience and to maximize your research and career opportunities in a variety of chemical fields. York offers several Honours four-year BSc programs in Chemistry as well as a Bachelors three-year program.

York's premier Chemistry program is the Specialized Honours B.Sc. in Chemistry, with exposure to subfields such as inorganic, organic, physical, analytical or theoretical chemistry. Within the Specialized Honours B.Sc. program, you might consider taking courses in **materials chemistry** (the science of new materials, such as electrically conductive polymers and biocompatible materials), if you are interested in biomaterials, polymers, electronic, optical or magnetic materials. If you are curious about how instrumentation, computers and numerical methods are useful in the detection and measurement of substances, you might consider taking courses in **analytical chemistry**.

York also offers a Specialized Honours B.Sc. 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. This program of study is ideal for students interested in the biological aspects of chemistry.

Toward the end of their studies, students in both Specialized Honours programs engage in a research study under the supervision of a professor of their choice. This can include original laboratory work or a theoretical project and/or field investigations. There will also be additional opportunities for laboratory work and research during summer terms or parttime during the school year. Both Specialized Honours programs are recognized and accredited by the Canadian Society for Chemistry.

First Year Chemistry Major Courses:

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

Second Year Chemistry Major Courses:

- Analytical Chemistry
- Inorganic and Organic Chemistry
- Thermodynamics
- Biochemistry
- General Education Course

Upper Year Chemistry Major Course Options:

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

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
- Grande Prairie Regional College

Visit yorku.ca/science/students/experiential-education/ for more information.



Career Pathways for Chemistry

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.

- Analytical Chemist
- Biochemist
- Organic Chemist
- Molecular Biologist
- 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 Technician
- Graduate Studies/Academic Careers