Admission Requirements
Chemistry (BSc)

Prerequisite Requirements for BSc:

- ENG4U, MHF4U, SCH4U, One additional 4U or M Science
- Recommended: MCV4U, SPH4U

Expected minimum admission average: high 70s – mid 80s

If you major in Chemistry your courses in first year will probably be:	In second year you will probably take:
• Chemistry • Physics and/or Biology • Calculus • Computer Use • General Education course	• Analytical Chemistry • Inorganic and Organic Chemistry • Thermodynamics • Biochemistry • General Education Course
Career options for Chemistry majors include:	Courses you might take in upper years include:
• Analytical Chemist • Biochemist • Organic Chemist • Molecular Biologist • Air Quality Specialist • Water Quality Analyst • Regulatory Affairs Specialist • Quality Control Chemist • Laboratory Technician • Quality Assurance Chemist • Process Development Chemist • Forensic Lab Analyst • Medical Laboratory Technician • Education – elementary, high school, college, university • Professional Schools – Medicine, Dentistry, Pharmacy, Law, Business, etc. • Graduate Studies/Academic Careers	• Instrumental Methods of Analysis • Biological Chemistry • Atmospheric Chemistry • Industrial and Green Chemistry • Macromolecules of Biochemical Interest • Pharmaceutical Discovery • Research Project (student/professor research collaboration)

Why study Chemistry at York University?

Chemistry is the central science, and York's Chemistry program offers an unbeatable learning experience. World-class professors who are active at the forefront of the field will guide you through your studies. A few examples include faculty such as Professor Krylov, who analyses the components of single cells to study the molecular mechanisms of diseases, and Professor Morin, who images atoms to study the formation of nanostructures on surfaces, both of whom teach students at all levels from first year to the PhD level. Studying Chemistry at York will position you to take advantage of innumerable career possibilities.

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-level four-year BSc programs in Chemistry as well as a Bachelors three-year program, giving you the flexibility to choose the option that best suits your interests and goals.

York's premier Chemistry program is the Specialized Honours B.Sc. in Chemistry, with exposure to sub-fields 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. Analytical chemistry is a cornerstone of experimental chemistry, defining the tools, techniques, and processes that chemists in all fields rely upon, especially in research requiring increasing instrumentation, miniaturization, and computerization in response to increasingly demanding problems of analysis and detection, often on small samples of dilute and impure materials.

Recognizing the increasingly blurred boundaries between the traditional disciplines, York also offers a Specialized Honours B.Sc. degree in the exciting multi-disciplinary field of Pharmaceutical & Biological Chemistry. The Pharmaceutical & Biological Chemistry degree 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. The program provides a solid grounding in:

- A specialized exploration of the chemistry of biologically and pharmaceutically relevant substances and processes
- Extensive hands-on training in the theory
- Experimental practice of organic chemistry, biochemistry, genetics, and analytical chemistry,
- The option of training in molecular biology theory and technique

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 part-time during the school year. Both Specialized Honours programs are recognized and accredited by the Canadian Society for Chemistry.

There is also an Honours Major program, which gives you the same grounding but only as much specialization as you choose. For students with interests in other disciplines, there is an Honours program that combines a Major in Chemistry with a

Minor in another subject, be it in another Science or in Arts, Fine Arts, health or Environmental Studies. You could also do a Minor in Chemistry with a Major in another subject. You may also consider completing a challenging but rewarding Honours Double Major B.Sc. combining Chemistry with equal focus on another science.

York's Chemistry programs offer a diverse list 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.

The Specialized Honours degree stream in Pharmaceutical & Biological Chemistry provides excellent preparation for entrance to professional schools in the health sciences (including medicine, dentistry, optometry or pharmacy), or in business or law, graduate study and research (but especially in medicinal and biological fields), and career paths in the pharmaceutical and biochemical sectors of industry, business, and government, as well as in teaching.

Facilities and Opportunities at York University

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.
You could also combine your chemistry degree with a diploma from Seneca.

Experiential Education

The Faculty of Science provides a rich diversity of opportunities for undergraduate students to engage in Experiential Education. Students can explore the ideas covered in class through a variety of experiences – whether they are in the classroom, in a lab, working in a community organization or a private sector firm.

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 /science.yorku.ca/current-students/ee/ for more information.

Research Opportunities

Advance your knowledge by gaining research experience outside the classroom. Students are able to learn advanced lab skills, use sophisticated lab equipment, interact with graduate students, gain in-depth knowledge in a particular field, and actually contributes to the advancement of scientific knowledge.