

Chemistry

BSc | www.yorku.ca/science/chemistry

Admission Requirements

- ENG4U, MHF4U, SCH4U, one additional 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 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 career opportunities for chemists.

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 in their fourth year, 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 (required for all Chemistry programs)
- Biology (required for Pharmaceutical and Biological stream)
- Calculus
- Computer Science
- General Education Course

Second Year Courses

- Analytical Chemistry
- Inorganic Chemistry
- Organic Chemistry
- Physical Chemistry
- Biochemistry
- Problem Solving in Chemistry

Upper Year Options

- Biological Chemistry
- Environmental Chemistry
- Industrial and Green Chemistry
- Macromolecules and Nanomaterials
- 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. EE provides students with an opportunity to integrate their classroom learning with hands-on experiences related to their field of study in a community or professional/working environment.

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

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

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

Possible Career Pathways

Your studies in Chemistry at York will prepare you for a diverse range of career options. Chemistry is truly a central science, enabling employment in fields such as forensics, food chemistry, pharmaceuticals, environmental analytics, and cosmetics, or in biotechnology, engineering, and other high-tech industries. Depending on your specific interests, you have access to a comprehensive choice of specialized courses that will prepare you for any of these and many other career opportunities. Some future paths for York Chemistry graduates include:

- Synthetic and medicinal chemist
- Professional careers (medicine, dentistry, pharmacy, law, etc.)
- Science education and communication
- Water quality and waste water analyst
- Quality and process control chemist
- Forensic analyst
- Food and cosmetic chemist

All York University students also have access to **The Career Centre**. Our Career Centre team provides resources and supports including, but not limited to, career fairs, employer networking events, skills development workshops, career counselling, and interview practice sessions.

Visit careers.yorku.ca to learn more.

Get In Touch

Domestic Students:

science@yorku.ca

International Students:

intlsci@yorku.ca

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“The Chemistry program here at York has provided me with opportunities to gain hands-on experience and expand my knowledge in various fields of chemistry. ... I had a great experience, I learned a lot of valuable hands-on skills and I gained knowledge in a unique field of study. This program and the professors here at York have encouraged me to explore new ideas, expand my knowledge, and improve my skills in chemistry.”

**Samantha,
Chemistry Student**