Admission Requirements
Biochemistry (BSc)

Prerequisite Requirements for BSc:

- ENG4U, SBI4U, SCH4U, MHF4U, MCV4U
- Recommended: SPH4U

Expected minimum admission average:
low-to-mid 80s

If you major in Biochemistry your courses in first year will probably be:	In second year you will probably take:
• Chemistry • Biology • Physics • Calculus • Computer Use • General Education Course	• Cell Biology and Biochemistry • Organic and Inorganic Chemistry • Thermodynamics • Genetics • General Education Course
Career options for Biochemistry majors include:	**Courses you might take in upper years include:**
• Biochemistry Research – academic, government • Pharmaceutical Research and Development • Medical Research • Hospital and Diagnostic Laboratories • Biotech, Pharmaceutical or Chemical Industry – product development, technical information, product information, quality control, regulatory affairs • Professional Schools – Medicine, Dentistry, Pharmacy, etc.	• Advanced Biochemistry • Nucleic Acid Metabolism • Biotechnology • Advanced Biochemistry and Molecular Genetics Laboratory • Macromolecules of Biochemical Interest • Regulation of Gene Expression • Bioanalytical Chemistry • Honours Thesis • Pharmaceutical Discovery

Why study Biochemistry at York?

Biochemistry is the study of life at the molecular level. It examines how cells work and the genetic functioning of living organisms. Biochemistry dates back over a century but the modern age of biochemistry had its start a little over 70 years ago with the discovery of the double helical structure of DNA and the elucidation of the molecular mechanism of heredity. The completion of the sequencing of the human and other genomes has allowed biochemists to begin to decipher the genetic codes within cells and, in turn, has increased our understanding of the pathways that link the many molecules responsible for cellular activity. These advances in biochemistry have led to life-changing discoveries for humankind and, as part of the next generation of biochemists; you could be at the forefront of this exciting and momentous revolution.

As a Biochemistry student at York, you will work with professors who are approachable, dedicated teachers and leaders in all aspects of biochemistry and molecular biology. Support and academic advising are available throughout the program to help you meet your personal, educational and professional goals.

Program Overview

High academic achievers will thrive in this prestigious Specialized Honours program as they examine the interface of Biology and Chemistry, and explore the functions, structure and regulation of living organisms at the cellular and molecular levels.

In the first year of the program, most students take Biology, Physics, Chemistry, Calculus and Computer Science. You will start your specialization in second year by taking courses such as Organic Chemistry, Cell Biology, Biochemistry, Thermodynamics, Inorganic Chemistry and Genetics. Your final years will consist of a selection of advanced courses, including Nucleic Acid Metabolism, Biotechnology and Gene Expression, along with many of your own choosing. Toward the end, you 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 under the supervision of a professor of your choice. There will also be additional opportunities for laboratory work and research during summer terms or part-time during the school year.

Facilities and Opportunities at York University and Beyond

York has outstanding research centers and facilities available to students and faculty members. Biology and Chemistry labs at York are state-of-the-art, and they have cutting-edge equipment available for students to use in their course work or independent research. The new Life Sciences Building houses new undergraduate laboratories, an advising office and a learning commons dedicated to first-year life science students and research laboratories. Combined with faculty members who are active researchers, these facilities provide students with exposure to cutting edge research. The Centre for Research in Mass Spectrometry, the Center for Research in Biomolecular Interactions, and the Combinational Chemistry Facility are award-winning and internationally recognized research facilities that support biochemical research.

Biochemistry graduates at York are prepared to enter the workforce and take meaningful and well paid jobs in a variety of fields. A foundation in biochemistry will allow you work in research and teaching fields that include genetic engineering, forensics, pharmaceutical drug design, disease research and agriculture and many others. Such foundations can even aid in work on specific projects such as DNA fingerprinting or public health laboratory work to name a few.

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.