

Biochemistry (BSc)

Admission Requirements

Prerequisite Requirements for BSc:

- ENG4U, SBI4U, MHF4U, SCH4U
- Recommended: SPH4U
- Expected minimum admission average: low 80s – mid 80s

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.

First Year Biochemistry Major Courses:

- Chemistry
- Biology
- Physics
- Calculus
- Computer Use
- General Education Course

Second Year Biochemistry Major Courses:

- Genetics
- Thermodynamics
- Cell Biology and Biochemistry
- Organic and Inorganic Chemistry
- General Education Course

Upper Year Biochemistry Major Course Options:

- 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

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 Biochemistry

Your studies in Biochemistry at York will prepare you for a very diverse range of career options:

- Biochemistry Research – academic, government
- Pharmaceutical Research and Development
- Medical Research
- Hospital and Diagnostic Laboratories
- Professional Schools – Medicine, Dentistry, Pharmacy, etc.
- Biotech, Pharmaceutical or Chemical Industry – product development, technical information, product information, quality control, regulatory affairs