

# Biophysics (BSc)

## Admission Requirements

### Prerequisite Requirements for BSc:

- ENG4U, MHF4U, SBI4U, SPH4U, MCV4U
- Recommended: SCH4U
- Expected minimum admission average: low 80s – mid 80s

### Program Overview

York's program in Biophysics is a four-year specialized honours degree. York University is **one of only a few institutions which offers a comprehensive four-year undergraduate degree program in biophysics**. You will be taking a combination of lecture-based and laboratory-based courses, providing you with both theoretical knowledge and practical experience. Students in the Biophysics program will study topics in:

- **Biology**
- **Chemistry**
- **Physics**
- **Mathematics**
- **Computing**

Students will learn to apply powers of lateral thinking to gain a deep understanding of life's functions. You will learn to recognize biological and physical problems and potential interdisciplinary solutions. You will also develop your skills in problem-solving, critical thinking, mathematics, and computing, and enhance your ability to think laterally. In addition, you may have opportunities to acquire work experience conducting student summer research through the Natural Sciences and Engineering Research Council of Canada's (NSERC) summer program. experience and language study with a Biology major.

### First Year Biophysics Major Courses:

- Physics
- Chemistry
- Biology
- Calculus
- Computer Use

### Second Year Biophysics Major Courses:

- Current Topics in Biophysics
- Genetics
- Classical Mechanics
- Electromagnetism
- Optics and Spectra
- Experimental Physics
- Multivariate & Vector Calculus
- Differential Equations

### Upper Year Biophysics Major Course Options:

- Photosynthesis
- Cell Biology
- Electromagnetics
- Microbiology
- Organic Chemistry
- Biophysics
- Modern Physics
- Molecular Biology
- Membrane Transport
- Quantum Mechanics
- Cellular Regulation
- Advanced Biochemistry
- Statistical & Thermal Physics
- Techniques in Laser Physics
- Microsystems Technology
- Macromolecules for Biochemistry
- Experiments in Modern Physics
- Atomic & Molecular Physics

## Experiential Education

The Faculty of Science provides a rich diversity of opportunities for undergraduate students to engage in Experiential Education. The Internship Program provides students in this program with the opportunity to integrate their classroom learning with hands-on, paid, work experiences related to their field of study. Internship students will begin their work term(s) after their third year of classroom study and can take part in 4, 8, 12, or 16 months of work before returning to school to complete their studies.

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

- Sanofi Pasteur
- York Regional Police
- Health Gene Corporation
- Parks Canada
- City of Toronto
- Grande Prairie Regional College

Visit [yorku.ca/science/students/experiential-education/](http://yorku.ca/science/students/experiential-education/) for more information.



## Career Pathways for Biophysics

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

- Medical Science
- Forensic Science
- Radiation Science
- Biotechnology
- Environmental Science
- Agricultural Science
- Computational Biology
- Applied Health Sciences
- Professional Schools – Medicine, Dentistry, Optometry, Pharmacy, etc.
- Education – elementary, high school, college, university
- Postgraduate Studies/Academic Career