

BIOCHEMISTRY

Program Notes

Subject Code for Biochemistry: **BCHM**

World Wide Web Address: <http://healthsci.queensu.ca/liscbchm/biochemistry> (<http://healthsci.queensu.ca/liscbchm/biochemistry/>)

Associate Dean, Life Sciences and Biochemistry: Louise Winn (lifesci@queensu.ca)

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Overview

Biochemistry is the branch of science that explores the structures and chemical processes of molecules in living organisms that interact to form cells, tissues, and whole organisms. The Biochemistry program at Queen's provides students with in-depth training in a wide range of important topics that are related to these processes, including the mechanisms of cancer progression, cellular communication, and the molecular and chemical basis of infection, inheritance, and disease. The program also offers opportunities for students to explore rapidly expanding fields in molecular genetics, metabolism of biomolecules, bioengineering, and regenerative medicine through hands-on training with professors in research labs.

The first two years of the program provides vital background preparation in Biology, Chemistry (organic, analytical, and physical), Molecular Biology, Math, and Statistical Analysis, to understand the molecules that make up all living things. In the upper years of the program, students receive in-depth exposure to all areas of Biochemistry and Molecular Biology, Cell Biology, including extensive hands-on laboratory experiences. The Biochemistry program has enough flexibility for students to take elective courses offered in other programs within the Faculty of Arts and Science, including the Life Sciences program, for which they are eligible.

The **Department of Biomedical and Molecular Sciences** is responsible for *Biochemistry* Plans (General/Minor (Science), Major, Specialization) and plays a primary role in the *Life Sciences* Plans (General/Minor (Science), Major, Specialization). For specific information related to the Biochemistry and Life Sciences Programs, please consult the Biochemistry Program and Life Sciences Program entries in the *Calendar*.

Program Policies

Students pursuing entry into the fourth-year of the *Biochemistry* Major Plan require a minimum GPA of 2.5 in the core BCHM courses (BCHM 218, BCHM 313, BCHM 315, BCHM 316, and BCHM 317) to access those fourth-year courses required to complete the Plan. See Academic Regulations (<https://queensu-ca-public.courseleaf.com/archive/2022-2023/arts-science/academic-regulations/>) **2.4** and **2.6**.

Students wishing to continue in *Biochemistry* Specialization Plan (BCHM-P-BSH) (<https://queensu-ca-public.courseleaf.com/archive/2022-2023/arts-science/schools-departments-programs/biochemistry/biochemistry-specialization-science-bs-honours/>) in their fourth-year must:

1. achieve a minimum GPA in the core BCHM courses (see above) of 2.9 and
2. acceptance into the Plan.

Students who secure a research project but do not attain the minimum GPA of 2.9 will not be allowed to enrol in BCHM 421 and BCHM 422 but will be allowed to complete the *Biochemistry* Major Plan.

Laboratory Safety

Departmental Safety Rules are strictly enforced. A standard white laboratory coat is required for all laboratory courses. Shoes must be closed at both heel and toe. Additional safety requirements will be described at the first laboratory in each laboratory-based course.

Advice to Students

Students should seek **academic counselling** from the staff in the Associate Dean's office or from the counsellor listed below.

Course Prefix	Counsellor	Contact Information
BCHM	Robert Campbell	robert.campbell@queensu.ca
BCHM and LISC	Louise Winn	lifesci@queensu.ca
BCHM and LISC	Beatriz Sugarman	biochem@queensu.ca
BCHM and LISC	Katherine Rudder	lifesci@queensu.ca

Biochemistry Plans

The flagship program is the Biochemistry Specialization Plan (BCHM-P-BSH) (<https://queensu-ca-public.courseleaf.com/archive/2022-2023/arts-science/schools-departments-programs/biochemistry/biochemistry-specialization-science-bs-honours/>), which is recommended for students who



wish to gain in-depth training in modern experimental Biochemistry and Biochemical processes involved in human health and disease. This program culminates in an intensive fourth-year thesis research project. It equips students with a solid foundation for entry into a variety of science-based graduate programs. Students may access this Plan at the start of their fourth year, on securing a research project.

The Biochemistry Major Plan (BCHM-M-BSH) (<https://queensu-ca-public.courseleaf.com/archive/2022-2023/arts-science/schools-departments-programs/biochemistry/biochemistry-major-science-bs-honours/>) is designed for those students who want comprehensive training in Biochemistry but may wish to pursue interests outside of experimental Biochemistry. This option provides flexibility for students to take a minor in another subject. To accommodate these interests there are opportunities for more elective credits in the final year of the program. Typically, students interested in pursuing alternate plans than graduate studies in experimental Biochemistry should enrol in this Plan.