

MAJOR IN BIOCHEMISTRY

Biochemistry is the chemistry of life. It provides the foundation for understanding all biological processes as well as the molecular basis and treatment of human disease.

The biochemistry bachelor's provides you with the education you need to play a leading role in new and exciting areas of medical research. You will be exposed to cutting-edge research and knowledge. Our program prepares you for graduate studies and for an academic or research career in the medical sciences. What's more, biochemistry provides an excellent foundation for further studies in medicine and other areas of health care.

You can choose an Honours BSc in Biochemistry, a major or a minor.

If you want to pursue a career in experimental biochemistry, choose the Honours program. If you prefer a basic biochemistry education, choose a major. And if you want to focus on another discipline but are interested in biochemistry, choose a minor.

If you have a particular interest in microorganisms and the role that the immune system plays in health and disease, you can also choose an Honours BSc in biochemistry with an option in microbiology and immunology. We also offer an integrated biotechnology program that lets you combine studies in biochemistry and chemical engineering and receive both a BSc in biochemistry and a BASc in chemical engineering in five years.

As for the language of instruction, compulsory courses and many optional course units are available in either English or French.

If you choose the Honours in Biochemistry, you have the opportunity to complete a full-year research project under the supervision of a professor from the departments of Chemistry and Biomolecular Sciences, Biology, Physics, or Biochemistry, Microbiology and Immunology, or under the supervision of an affiliated principle investigator from one of the many research institutes in the National Capital Region. Given the breadth of research expertise within our program, you can conduct research in many areas of modern biomedicine, including biochemistry, microbiology, immunology, chemical biology, molecular biology, cell biology, proteomics, genomics, systems biology and bioinformatics.

This program is offered in English and in French.

Program Requirements

The table below includes only the discipline-specific courses. Please refer to the Academic Regulations (<https://www.uottawa.ca/about-us/policies-regulations/academic-regulations/b-2-program-studies/>) for information on the Honours bachelor's with double major and the Honours bachelor's with major and minor.

Co-operative education is available when taken as part of an honours degree.

The French immersion stream is available when taken as part of an honours degree.

Requirements for this program have been modified. Please consult the 2025-2026 calendars (<https://catalogue.uottawa.ca/en/archives/>) for the previous requirements.

Compulsory courses at the 1000 level

BIO 1131	Introduction to Organismal Biology	3 Units
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BIO 1141	Introduction to Cell and Molecular Biology	3 Units
CHM 1311	Principles of Chemistry	3 Units
CHM 1321	Organic Chemistry I	3 Units
MAT 1330	Calculus for the Life Sciences I	3 Units
MAT 1332	Calculus for the Life Sciences II	3 Units
PHY 1321	Principles of Physics I	3 Units

Compulsory courses at the 2000 level

BCH 2333	Introduction to Biochemistry	3 Units
BIO 2133	Genetics	3 Units
CHM 2120	Organic Chemistry II	3 Units
CHM 2132	Physical Chemistry for the Life Sciences	3 Units
STA 2392	Introduction to Biostatistics	3 Units

Compulsory courses at the 3000 level

BCH 3120	General Intermediary Metabolism	3 Units
BCH 3125	Protein Structure and Function	3 Units
BCH 3170	Molecular Biology	3 Units
BCH 3346	Biochemistry Laboratory II	3 Units
BCH 3356	Molecular Biology Laboratory	3 Units

Optional courses

3 courses units from:	3 Units
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PHY 1322 Principles of Physics II

PHY 2325 Physics in Biology

6 course units from:	6 Units
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BCH 4101 Human Genome Structure and Function¹

BCH 4116 Analytical Biochemistry

BCH 4122 Structural Biology of Proteins^{1,2}

BCH 4123 Pathological Biochemistry

BCH 4124 Carbohydrates and Glycobiology

BCH 4125 Cellular Regulation and Control¹

BCH 4172 Topics in Biotechnology

BCH 4188 Synthetic Biology²

BCH 4300 Selected Topics in Biochemistry

BPS 3101 Genomics¹

BPS 4129 Advanced Chemical Biology

CHM 4139 Enzyme Chemistry and Biocatalysis

Total:	60 Units
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Note(s)

¹ A maximum of 3 course units may be selected amongst these courses.

² These courses may not be available every year.