

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 2018-2019 calendars (<https://catalogue.uottawa.ca/en/archives/>) for the previous requirements.

BIO 1130	Introduction to Organismal Biology	3 Units
BIO 1140	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
3 courses units from:		3 Units
PHY 1322	Principles of Physics II	
PHY 2325	Physics in Biology	
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
MAT 2379	Introduction to Biostatistics	3 Units
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
6 course units from:		6 Units
BCH 4101	Human Genome Structure and Function ¹	
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 Control ¹	
BCH 4172	Topics in Biotechnology	
BCH 4188	Synthetic Biology ²	
BCH 4300	Selected Topics in Biochemistry	
BPS 3101	Genomics ¹	
BPS 4129	Advanced Chemical Biology	
CHM 4139	Enzyme Chemistry and Biocatalysis	

Total: **60 Units**

Note(s)

1

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

2

These courses may not be available every year.