

HONOURS BSC IN BIOCHEMISTRY - MICROBIOLOGY AND IMMUNOLOGY OPTION

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

Co-operative education is available with this program.

The extended French stream is available with this program.

Requirements for this program have been modified. Please consult the 2015-2016 calendars (<http://www.uottawa.ca/academic/info/regist/1516/calendars>) for the previous requirements.

3 optional course units in English (ENG) at the 1000 or 2000 level	3 Units
BIO 1130 Introduction to Organismal Biology	3 Units

BIO 1140 Introduction to Cell 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 course 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 2123 Laboratory of 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
BIO 3124 General Microbiology	3 Units
BIO 3126 General Microbiology Laboratory	3 Units
BIO 3153 Cell Biology	3 Units
BCH 4932 Biochemistry Seminar	3 Units
MIC 4124 Pathogenic Bacteriology	3 Units
MIC 4125 Immunology	3 Units
MIC 4126 Virology	3 Units
One option from the following:	9 Units
Option 1: Honours Project	
BCH 4040 Honours Research - Biochemistry ²	
Option 2: Honours Project Substitution	
3 course units from:	
BPS 4104 Bioinformatics Laboratory	
BPS 4127 Advanced Techniques in Biosciences	
and 6 optional course units at the 3000 and 4000 level in science	
3 course units from:	3 Units
BPS 3101 Genomics	
BCH 4101 Human Genome Structure and Function	
BCH 4122 Structural Biology of Proteins ³	
BCH 4123 Pathological Biochemistry	
BCH 4124 Carbohydrates and Glycobiology	
BCH 4125 Cellular Regulation and Control	
BCH 4172 Topics in Biotechnology	
BCH 4188 Nucleic Acids - Structure and Functions ³	
BCH 4300 Selected Topics in Biochemistry	
BPS 4129 Advanced Chemical Biology	
CHM 4139 Enzyme Chemistry and Biocatalysis	
9 elective course units from the Faculty of Arts, Faculty of Education, Faculty of Law, Faculty of Social Sciences or the Telfer School of Management	9 Units

This is a copy of the 2019-2020 catalog.

18 elective course units	18 Units
Total:	120 Units

Note(s)

- ¹ This course runs from September to April.
- ² BCH 4040 is highly recommended. A minimum CGPA of 6.5 or greater or a GPA of 6.5 or greater calculated from the two most recent years of full-time study in the Honours Biochemistry program (minimum of 54 units including all compulsory all compulsory 3000 level courses) is required. This course runs from September to April.
- ³ This course may not be available every year.

This message is intended for students registered in the Faculty of Science. If the components of your program of study require common compulsory courses, you will have to replace the units as follows:

1. 1000-level courses must be replaced with elective course units;
2. 2000-level courses and above must be replaced with courses from either discipline at the same level or above.

Please note that all programs in the Faculty of Science require a minimum of 12 elective course units from the Faculty of Arts, the Faculty of Education, the Faculty of Law, the Faculty of Social Sciences or the Telfer School of Management. Once you have decided on the replacement courses, please inform the Office of Undergraduate Programs of the Faculty of Science by email at infosci@uOttawa.ca so we that may amend your Academic Advisement accordingly.