

HONOURS BSC 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 French immersion 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 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 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 - Biochemistry²

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 Proteins³

BCH 4123 Pathological Biochemistry

BCH 4124 Carbohydrates and Glycobiology

BCH 4125 Cellular Regulation and Control

BCH 4172 Topics in Biotechnology

BCH 4188 Synthetic Biology³

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 2022-2023 catalog.

18 elective course units	18 Units
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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.

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.