# HONOURS BSC BIOMEDICAL SCIENCE - BIOANALYTICAL SCIENCE OPTION

Biomedical Science is an interdisciplinary program that focuses on the fundamentals of human structure and function, as well as those of other animals. The first two years provide a background in human anatomy and psychology, in addition to more in-depth knowledge in basic sciences like biology, chemistry, biochemistry, and mathematics. At the end of second year, in addition to courses in biology and biochemistry, students may choose from an array of optional courses and obtain a minor in one of many programs offered, OR they can choose an option within the biomedical sciences (Neuroscience, Cellular and Molecular Medicine, Bioanalytical Science, Medicinal Chemistry or Biostatistics). On graduation, they will be ready for more advanced research training or for admission to a professional program in human health.

Students in the Biomedical Sciences program are also eligible to participate in the Co-Operative Education Programs.

Admission to this program is competitive and higher averages are required.

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.

3 optional course units in English (ENG) at the 1000 or 2000

Requirements for this program have been modified. Please consult the 2022-2023 calendars (http://catalogue.uottawa.ca/en/archives/) for the previous requirements.

#### **Basic Skills**

level, excluding ENG 1112 and ENG 1131				
Compulsory courses at the 1000 level				
ANP 1111	Essentials of Human Anatomy and Physiology I	3 Units		
ANP 1115	Essentials of Human Anatomy and Physiology II	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		
PSY 1101	Introduction to Psychology: Foundations	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 2123	Laboratory of Organic Chemistry II	3 Units		
CHM 2132	Physical Chemistry for the Life Sciences	3 Units		

CHM 2311	Introduction to Structure and Bonding	3 Units		
CHM 2354	Analytical Chemistry	3 Units		
MAT 2379	Introduction to Biostatistics	3 Units		
PHI 2396	Bioethics	3 Units		
Compulsory	courses at the 3000 level			
BCH 3120	General Intermediary Metabolism	3 Units		
BIO 3170	Molecular Biology	3 Units		
CHM 3120	Intermediate Organic Chemistry	3 Units		
CHM 3122	Applications of Spectroscopy in Chemistry	3 Units		
Compulsory	courses at the 4000 level			
BIM 4316	Modern Bioanalytical Chemistry	3 Units		
BIM 4920	Seminar I Evaluating Science	1.5 Units		
BIM 4921	Seminar II Developing and Communicating Science	1.5 Units		
CHM 4354	Principles of Instrumental Analysis	3 Units		
PHA 4107	Introductory Pharmacology - Drugs and Living Systems	3 Units		
Optional cou	rses			
3 course units from: 3 t				
PSY 1102	Introduction to Psychology: Applications			
PSY 2114	Lifespan Psychology			
3 course units from: 3 Units				
BCH 3356	Molecular Biology Laboratory			
BIO 3151	Molecular Biology Laboratory			
9 course units from: 9 Units				
BIM 4009	Research Project - Biomedical Science			
or 9 optional course units at the 3000 or 4000 level from the list of optional courses				
3 optional course units from the list of optional courses				
3 optional course units at the 3000 or 4000 level offered by the Faculty of Science <sup>1, 2</sup>				
the Faculty o	f Science <sup>1, 2</sup>			
the Faculty o	f Science <sup>1, 2</sup>			
the Faculty o		15 Units		

Note(s)

1

3 Units

The following courses are considered as science courses: MIC 4100, MIC 4125, MIC 4126, PHA 4107, PHS 3300, PHS 3341, PHS 3342, PHS 4336.

2

The course SCI 3101 is considered a science optional course.

### **List of Optional Courses**

BCH 4123	Pathological Biochemistry	3 Units
BCH 4172	Topics in Biotechnology	3 Units
BIM 4103	Selected Topics in Biomedical Science	3 Units
BIO 4158	Applied Biostatistics	3 Units
BPS 3350	Transition Metal Chemistry	3 Units
BPS 4102	Pharmaceuticals: Federal and International Regulations	3 Units
BPS 4103	Selected Topics in Biopharmaceutical Science	3 Units

### This is a copy of the 2024-2025 catalog.

BPS 4127	Advanced Techniques in Biosciences	3 Units
BPS 4129	Advanced Chemical Biology	3 Units
BPS 4131	Advanced Biopharmaceutical Science	3 Units
CHM 4139	Enzyme Chemistry and Biocatalysis	3 Units
MAT 3377	Sampling and Surveys	3 Units