HONOURS BSC BIOMEDICAL SCIENCE (RESEARCH FOCUS) - BIOSTATISTICS 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 to enter an option within the biomedical sciences program (Neuroscience, Cellular and Molecular Medicine, Bioanalytical Science, Medicinal Chemistry or Biostatistics). The Research Focus is ideal for students thinking of a career in research, as it consists of an immersive research experience in the third and fourth years that will equip students with advanced research, analysis and communication skills applicable to diverse careers. On graduation, they will be ready for more advanced research training or for admission to a professional program in human health.

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

This program is offered in English and in French.

Program Requirements

The French immersion stream is available with this program.

Requirements for this program have been modified. Please consult the 2023-2024 calendars (http://catalogue.uottawa.ca/en/archives/) for the previous requirements.

Basic Skills

3 optional course units in English (ENG) at the 1000 or 2000 level, excluding ENG 1112 and ENG 1131		3 Units

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
MAT 1341	Introduction to Linear Algebra	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
MAT 2371	Introduction to Probability	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
BIM 3009	Research Practicum	6 Units
BIO 3170	Molecular Biology	3 Units
MAT 3373	Methods of Machine Learning	3 Units
MAT 3375	Regression Analysis	3 Units
MAT 3378	Analysis of Experimental Designs	3 Units

Compulsory Courses at the 4000 level

BIM 4009	Research Project - Biomedical Science	9 Units
BIM 4920	Seminar I Evaluating Science	1.5 Units
BIM 4921	Seminar II Developing and Communicating Science	1.5 Units
BIO 4158	Applied Biostatistics	3 Units

Optional Courses

3 course units from:		3 Units
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	
12 optional course units from the list of optional courses		12 Units
3 optional course units at the 3000 or 4000 level offered by the Faculty of Science [1,2]		3 Units

Elective Courses

9 elective course units		9 Units
Total:		**120 Units**

Note(s)

[1]

The following courses are considered as science courses: MIC 4100, MIC 4124, 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

BIM 4316	Modern Bioanalytical Chemistry	3 Units
BIO 3102	Molecular Evolution	3 Units
BIO 3360	Computational Tools for Biological Sciences	3 Units
BPS 3101	Genomics	3 Units
BPS 4104	Bioinformatics Laboratory	3 Units
BPS 4127	Advanced Techniques in Biosciences	3 Units
CHM 2354	Analytical Chemistry	3 Units
MAT 4374	Computational Statistics	3 Units
MAT 4375	Multivariate Statistical Methods	3 Units
MAT 4377	Topics in Applied Probability	3 Units
MAT 4378	Categorical Data Analysis	3 Units