HONOURS BSC BIOMEDICAL SCIENCE - MEDICINAL CHEMISTRY 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.

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		
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
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 4920	Seminar I Evaluating Science	1.5 Units
BIM 4921	Seminar II Developing and Communicating Science	1.5 Units
CHM 4123	Medicinal Chemistry	3 Units
PHA 4107	Introductory Pharmacology - Drugs and Living Systems	3 Units
One option from the following:		9 Units
Option 1: Honours Project		
BIM 4009	Research Project - Biomedical Science	
Option 2: Honours Project Substitution		
3 course units from:		
BIM 4316	Modern Bioanalytical Chemistry	
BPS 4126	Synthetic and Medicinal Chemistry Laboratory	
and 6 optional course units at the 3000 or 4000 from the list of optional courses		
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	
3 course units from:		3 Units
CHM 3126	Laboratory of Organic Chemistry	
CHM 3127	Laboratory of Organic Chemistry – Research Option	
3 optional course units from the list of optional courses at the 3000 or 4000 level		3 Units
3 optional course units at the 3000 or 4000 level offered by the Faculty of Science [1, 2]		3 Units
Elective Courses		
15 elective course units		15 Units
Total:		**120 Units**

Note(s)

1

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
BIM 4103	Selected Topics in Biomedical Science	3 Units
BIM 4316	Modern Bioanalytical Chemistry	3 Units
BPS 3350	Transition Metal Chemistry	3 Units
BPS 4103	Selected Topics in Biopharmaceutical Science	3 Units
BPS 4105	Human Toxicology and Environmental Health	3 Units
BPS 4121	Biosynthesis and Natural Product Derived Medicines	3 Units
BPS 4126	Synthetic and Medicinal Chemistry Laboratory	3 Units
BPS 4129	Advanced Chemical Biology	3 Units
BPS 4131	Advanced Biopharmaceutical Science	3 Units
CHM 4139	Enzyme Chemistry and Biocatalysis	3 Units
CHM 4141	Computational Chemistry I	3 Units
CHM 4317	Organometallic Chemistry	3 Units
CHM 4319	Bio-Inorganic Chemistry	3 Units
CHM 4354	Principles of Instrumental Analysis	3 Units