HONOURS BSC IN 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 can 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). The Research Focus is an immersive research experience offered starting in third year for students who may be considering a career in research. Students in the Biomedical Sciences program are also eligible to participate in the Co-Operative Education Programs. 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 extended French stream is available with this program.

Compulsory courses at the 1000 level
ANP 1105 Human Anatomy and Physiology I 3 Units
ANP 1106 Human Anatomy and Physiology II 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
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 3375 Regression Analysis 3 Units
MAT 3377 Sampling and Surveys 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 optional course units in English (ENG) at the 1000 or 2000 level, excluding ENG 1112 and ENG 1131 3 Units
3 course units from:
   PSY 1102 Introduction to Psychology: Applications 3 Units
   PSY 2114 Lifespan Psychology 3 Units
3 course units from:
   BCH 3356 Molecular Biology Laboratory 3 Units
   BIO 3151 Molecular Biology Laboratory 3 Units
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 3 Units

Elective Courses
9 elective course units 9 Units
Total: 120 Units

1 The following courses are considered as science courses: PHA 4107, PHS 3341, PHS 3342, PHS 4300, PHS 4336.

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 Modern Computational Statistics 3 Units
MAT 4375 Multivariate Statistical Methods 3 Units
MAT 4377 Topics in Applied Probability 3 Units
MAT 4378 Categorical Data Analysis in Biostatistics 3 Units