HONOURS BSC IN BIOLOGY (RESEARCH FOCUS) - ANIMAL PHYSIOLOGY OPTION

Overview
Recent discoveries and new technologies are revolutionizing the biological sciences, placing increasing emphasis on integrating knowledge across all levels of organization, from molecules to ecosystems. Our programs give students both the intellectual tools and the hands-on experience they need to pursue careers in fields as diverse as conservation and endangered species; land-use management; ecotoxicology; academic, industry or government research; or health care. Learning takes place through traditional classroom instruction, innovative laboratory projects with state-of-the-art technologies, field-based courses around the world, and a strong research program in which undergraduate students of all years are intensively mentored in a research lab.

The honours program in biology allows for in-depth study in one or more biological disciplines. Students can concentrate on a particular area by choosing one of four options: Cellular and Molecular Biology, Animal Physiology, Plant Science, or Ecology, Evolution and Behaviour. This route includes a compulsory independent research project to equip students with advanced research, analysis and communication skills applicable to diverse careers. Alternatively, they can pursue diverse interests by selecting a general course of study that includes a number of advanced courses, and they can gain work experience while studying through the Co-Operative Education Programs.

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

Compulsory Courses at the 1000 level
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
GEO 1111 Introduction to Earth Systems 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

Compulsory Courses at the 2000 level
BCH 2333 Introduction to Biochemistry 3 Units
BIO 2129 Ecology 3 Units
BIO 2133 Genetics 3 Units
BIO 2135 Animal Form and Function 3 Units
BIO 2137 Introduction to Plant Science 3 Units
CHM 2120 Organic Chemistry II 3 Units
MAT 2379 Introduction to Biostatistics 3 Units

Compulsory Courses at the 3000 level
BIO 3009 Research Practicum 6 Units
BIO 3137 Experiments in Animal Physiology 3 Units
BIO 3302 Animal Physiology II 3 Units
BIO 3303 Animal Physiology I 3 Units
BIO 3305 Cellular Physiology 3 Units

Compulsory Courses at the 4000 level
BIO 4009 Honours Research 9 Units
BIO 4158 Applied Biostatistics 3 Units
BIO 4922 Seminar – Evaluating and Developing Science 3 Units

Optional Courses
6 course units from:
BCH 3120 General Intermediary Metabolism
BIO 3350 Principles of Neurobiology
BIO 3360 Computational Tools for Biological Sciences
BIO 4119 Topics in Respiratory Physiology
BIO 4120 Animal Adaptations
BIO 4127 Comparative Endocrinology
BIO 4152 Animal Energetics
BIO 4175 Membrane Physiology
BIO 4302 Animal Movement
BIO 4351 Neural Basis of Animal Behaviour
BIO 4551 Physiologie évolutive et écophysiologie
BPS 3102 Principles of Toxicology and Pharmacology
CMM 4360 The Dynamical Brain: Experimental and Computational Approaches to Neural Networks

9 optional course units in biology (BIO), biopharmaceutical science (BPS) or environmental science (EVS), ITI 1120, BCH 3120, BCH 3125, BCH 3356, BCH 4122, BCH 4125, BCH 4188, PHA 4107, SCI 3101 with at least 3 of the 9 optional course units at the 3000 or 4000 level

Elective Courses
9 elective course units offered by the Faculty of Arts, the Faculty of Education, the Faculty of Law, the Faculty of Social Sciences or the Telfer School of Management

15 elective course units

Total: 120 Units