HONOURS BSC BIOLOGY (RESEARCH FOCUS) - PHYSIOLOGY OPTION

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 three options: Cellular and Molecular Biology, Physiology, 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.
Students thinking of a career in research should consider the Research Focus, an immersive research experience in the third and fourth years.

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 2020-2021 calendars (http://catalogue.uottawa.ca/en/archives/) for the previous requirements.

3 optional course units in English (ENG) at the 1000 or 2000 level		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
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
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
BIO 3009	Research Practicum	6 Units
BIO 4158	Applied Biostatistics	3 Units
BIO 4920	Seminar I Evaluating Science	1.5 Units
BIO 4921	Seminar II Developing and Communicating Science	1.5 Units
Physiology Option - Block A		
BIO 4009	Honours Research	9 Units
Physiology Option - Block B		
One option from the following:		18 Units
Option 1: Animal Physiology		
BIO 3137	Experiments in Animal Physiology	
6 course units from:		
BIO 3302	Animal Physiology II	
BIO 3303	Animal Physiology I	
BIO 3305	Cellular Physiology	
and 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, SCI 3101 with at least 3 of the 9 optional course units at the 3000 or 4000 level		
Option 2: Plant Physiology		
6 course units from:		
BIO 3140	Plant Physiology and Biochemistry	
BIO 3142	Plant Developmental Biology	
BIO 3146	Ecophysiology of Plants	
and 12 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, SCI 3101 with at least 3 of the 12 optional course units at the 3000 or 4000 level		
Physiology Option - Block C		
3 course units from:		3 Units
BIO 3147	Animal Developmental Biology	
BIO 3152	Cell Biology Laboratory	
BIO 3153	Cell Biology	
BIO 3170	Molecular Biology	
Physiology Option - Block D		
6 course units from:		6 Units
BCH 3120	General Intermediary Metabolism	
BIO 3140	Plant Physiology and Biochemistry	
BIO 3142	Plant Developmental Biology	
BIO 3146	Ecophysiology of Plants	
BIO 3302	Animal Physiology II	
BIO 3303	Animal Physiology I	
BIO 3305	Cellular Physiology	
BIO 3310	Plant Systematics and Diversity	
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 4142	Plant Immunity and Symbioses	
BIO 4144	Plant Molecular Biology	
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	
BPS 4123	Phytomedicines and Natural Product Drugs	
CMM 4360	The Dynamical Brain: Experimental and Computational Approaches to Neural Networks	
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		9 Units
15 elective course units		15 Units
Total:		**120 Units**