

BIODIVERSITY (BIOD)

Department of Integrative Biology, College of Biological Science

The Major in Biodiversity offers a broad education in the diversity and evolution of life while providing a more specialized understanding of biology at the level of the organism. It is the most flexible of the majors offered by the Department of Integrative Biology and as such, it allows students the opportunity to design a customized program around their interests. The major qualifies students for postgraduate work in biodiversity, botany, zoology, and other life sciences and provides a sound science background for students wishing to pursue professional life science degrees or careers in teaching, government service or the private sector.

Biodiversity impacts every aspect of our planet. To maximize a student's exposure to biodiversity we strongly encourage students to consider an international exchange in their fifth semester. An increase in global awareness of the diverse issues facing biodiversity from different economic, social, environmental and biological landscapes will help students to critically think, analyze and recognize the inherent complexities within the field.

Major (Honours Program)

Students may enter this major in Semester 1 or any semester thereafter. A student wishing to declare the major may wish to consult the Faculty Advisor. A minimum total of 20.00 credits required to complete the major.

Students lacking Grade 12 or 4U Biology, Chemistry or Physics should follow the revised schedule of study for this major found at https://www.uoguelph.ca/bsc/revised_SS (https://www.uoguelph.ca/bsc/revised_SS/)

Code	Title	Credits
Semester 1		
BIOL*1070	Discovering Biodiversity	0.50
CHEM*1040	General Chemistry I	0.50
MATH*1080	Elements of Calculus I	0.50
PHYS*1080	Physics for Life Sciences	0.50
0.50 Liberal Education electives		0.50
Semester 2		
BIOL*1080	Biological Concepts of Health	0.50
BIOL*1090	Introduction to Molecular and Cellular Biology	0.50
CHEM*1050	General Chemistry II	0.50
PHYS*1070	Physics for Life Sciences II	0.50
0.50 electives or restricted electives		0.50
Semester 3		
BIOC*2580	Introduction to Biochemistry	0.50
MBG*2040	Foundations in Molecular Biology and Genetics	0.50
MICR*2420	Introduction to Microbiology	0.50
ZOO*2090	Vertebrate Structure and Function	0.50
0.50 electives or restricted electives		0.50
Semester 4		
BIOL*2060	Ecology	0.50
BIOL*2400	Evolution	0.50

STAT*2230	Biostatistics for Integrative Biology	0.50
ZOO*2700	Invertebrate Morphology & Evolution	0.50
0.50 electives or restricted electives		0.50

Semester 5

2.50 electives or restricted electives or Study Abroad ¹		2.50
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Semester 6

BOT*3710	Plant Diversity and Evolution	0.50
ENVS*3090	Insect Diversity and Biology	0.50
IBIO*3100	Interpreting Biodiversity I	0.50
1.00 electives or restricted electives		1.00

Semester 7

IBIO*4100	Interpreting Biodiversity II	1.00
1.50 electives or restricted electives		1.50

Semester 8

2.50 electives or restricted electives		2.50
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Study Abroad can include an exchange, international letter of permission, study abroad or field school. Full details on the institutions and experiences available, along with application deadlines and admission requirements can be found on the University of Guelph, Centre for International Programs website: <https://www.uoguelph.ca/cip/> (<https://www.uoguelph.ca/cip/>)

Restricted Electives

The major in Biodiversity is a flexible program that allows students, in consultation with faculty advisors, to pursue their own interests and design a customized program of study. For example, students may wish to select their electives to focus on a particular taxonomic group such as microbes, plants, invertebrates, or vertebrates, and/or one of the three areas of research strength in the Department of Integrative Biology: physiology, ecology, or evolution.

Code	Title	Credits
1. At least 1.00 credits of Liberal Education electives are required.		
2. Select a minimum of 0.50 credits from the following:		
BOT*2100	Life Strategies of Plants	0.50
BOT*3050	Plant Functional Ecology	0.50
ZOO*3600	Comparative Animal Physiology I	0.50
3. Select a minimum of 0.50 credits from the following:		
BOT*3310	Plant Growth and Development	0.50
BOT*3410	Plant Anatomy	0.50
ZOO*3050	Developmental Biology	0.50
4. Select a minimum of 0.50 credits from the following: ³		
BIOL*4410	Field Ecology	0.75
BIOL*4610	Arctic Ecology	0.75
BIOL*4700	Field Biology	0.50
BIOL*4710	Field Biology	0.25
BIOL*4800	Field Biology	0.50
BIOL*4810	Field Biology	0.25
IBIO*4500	Research in Integrative Biology I	1.00
IBIO*4510	Research in Integrative Biology II	1.00
IBIO*4521	Thesis in Integrative Biology	1.00
IBIO*4522	Thesis in Integrative Biology	1.00

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ZOO*4170	Experimental Comparative Animal Physiology	0.50
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ZOO*4300	Marine Biology and Oceanography	0.75
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Other field or research courses with approval of faculty advisor.

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The list of Liberal Education electives for B.Sc. students can be found at: <https://www.uoguelph.ca/bsc> (<https://www.uoguelph.ca/bsc/>)

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Biodiversity students are strongly encouraged to take at least one field course. Students should keep in mind that some of these courses have prerequisites that are not required courses for the BIOD major and should plan their programs accordingly.

Credit Summary

(20.00 Total Credits)

Code	Title	Credits
	First year science credits	4.00
	Required science courses semesters 3 - 8	6.50
	Restricted elective (# 2, 3 and 4 in restricted elective list)	1.50
	Approved Science electives	4.00
	Liberal Education (#1 in restricted electives)	1.00
	Free electives - any approved elective for B.Sc. students	3.00
	Total Credits	20

*Of the total credits required, students are required to complete 16.00 credits in science of which a minimum of 2.00 credits must be at the 4000 level and an additional 4.00 credits must be at the 3000 or 4000 level.