

BIOLOGICAL SCIENCE (BIOS)

College of Biological Science

Major Requirements (Honours)

This is a major within the degree: Bachelor of Science.

The Biological Science major offers the opportunity to study a wide range of topics within biological science. The major is one of the most flexible within the B.Sc. program. After the core sciences in first and second year, students can tailor the degree to create a major all their own. With the wide breadth of courses offered, students can choose to focus their studies in one area of biological science or create a unique skill set and combination of courses not currently offered in any one of our majors. Students can also add a minor in either an area of science, arts or social science.

With this flexibility, students in the Biological Science major are encouraged to seek out study abroad opportunities through the Centre for International Programs. With a high number of elective spaces within the major, students can incorporate a study abroad and still meet the degree requirements within four years. Students who wish to pursue this option should start researching and planning in semesters 3 and 4.

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. This major will require the completion of 20.00 credits as indicated below:

Schedule of Studies

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/.

Code	Title	Credits
Semester 1		
BIOL*1090	Introduction to Molecular and Cellular Biology	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 ¹		0.50
Semester 2		
BIOL*1070	Discovering Biodiversity	0.50
BIOL*1080	Biological Concepts of Health	0.50
CHEM*1050	General Chemistry II	0.50
PHYS*1070	Physics for Life Sciences II	0.50
0.50 Liberal Education electives ¹		0.50
Semester 3		
BIOL*2400	Evolution	0.50
BIOC*2580	Introduction to Biochemistry	0.50
or MBG*2040	Foundations in Molecular Biology and Genetics	
1.00 electives or restricted electives ²		1.00
0.50 Liberal Education electives ¹		0.50
Semester 4		
STAT*2040	Statistics I	0.50
BIOC*2580	Introduction to Biochemistry	0.50

Code	Title	Credits
or MBG*2040	Foundations in Molecular Biology and Genetics	
1.00 electives or restricted electives ²		1.00
0.50 Liberal Education electives ¹		0.50
Semester 5		
2.50 electives or restricted electives ^{2,3,4}		2.50
Semester 6		
2.50 electives or restricted electives ^{2,3,4}		2.50
Semester 7 and 8		
2.50 electives or restricted electives ^{2,5}		2.50

¹ The list of Liberal Education electives for B.Sc. students can be found at: <https://www.uoguelph.ca/bsc/>.

² Consult the BSc Advising website (<https://bsc.uoguelph.ca/current-bsc-students/>) for a list of approved electives.

³ Students interested in an international exchange need to apply in the year prior to going abroad. Students need to contact the Centre for International Programs to confirm admission requirements and to apply. Exchanges require approval from the appropriate individuals and is pending available space at the host institution.

⁴ Students interested in completing an Internship in Biological Science, BIOL*3660 must find a organization to work with for at least 100 hours, prior to enrollment in the course. Full details on the registration and course requirements can be found on the College of Biological Science website (<https://www.uoguelph.ca/cbs/undergraduate/undergraduate-courses/deans-office-undergraduate-courses/#internship>).

⁵ Integrative Problems in Biological Science, BIOL*4020, is highly recommended to all BIOS students to complete in their fourth year. The course is designed as a capstone course for the Biological Science major.

Restricted Electives

Code	Title	Credits
1. Select at least 2.00 credits of Liberal Education electives ¹		
2. Select a minimum of 0.50 credits in Ecology from the following:		
BIOL*2060	Ecology	0.50
BOT*3050	Plant Functional Ecology	0.50
3. Select a minimum of 0.50 credits in Mathematical or Computational Science from the following:		
CIS*1050	Web Design and Development	0.50
CIS*1200	Introduction to Computing	0.50
CIS*1500	Introduction to Programming	0.50
MATH*1090	Elements of Calculus II	0.50
STAT*2050	Statistics II	0.50
4. Select a minimum of 0.50 credits in Physiology from the following:		
BIOM*3200	Biomedical Physiology	1.00
BOT*2100	Life Strategies of Plants	0.50
HK*2810	Human Physiology I - Concepts and Principles	0.50
ZOO*3600	Comparative Animal Physiology I ⁶	0.50
5. 5.50 additional Biological Science credits of which 4.00 must be at the 3000 or 4000 level ^{2,5}		5.50

⁶ May require additional prerequisites.

Credit Summary

(20.00 Total Credits)

Code	Title	Credits
	First year science core	4.00
	Required science courses semesters 3 - 8 (# 2, 3 and 4 in restricted elective list)	3.50
	Approved Biological Science electives of which 4.00 must be 3000/4000 level (# 5 in restricted elective list)	5.50
	Approved Science electives of which 2.00 credits must be 3000/4000 level ^{7,8}	3.00
	Liberal Education electives ¹	2.00
	Electives ²	2.00
Total Credits		20

⁷ May include 1 of BIOL*1020 Introduction to Biology, CHEM*1060 Introductory Chemistry

⁸ 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.