

# BACHELOR OF SCIENCE IN ENVIRONMENTAL SCIENCES [B.SC.(ENV.)]

## Program Information

### Objectives of the Program

The Environmental Sciences program is designed to provide a strong interdisciplinary grounding in specific environmental sciences including the socioeconomic context in which environmental issues are resolved.

There is an emphasis on management and decision-making skills for the application of scientific knowledge to environmental problems, and the evaluation of appropriate environmental policies. A practical perspective based on defining and resolving problems is central to the program, and this is often done in the context of group work.

Substantial emphasis is placed on communication skills, including the development of competence in both written and oral presentations. These skills will be progressively developed in core courses from the first to the fourth year. Students in the final year of their program will be expected to take part in more intensive communication skill development. Graduates will seek employment in a range of fields, from government agencies to private industry and research.

### Academic Counselling

General information on the degree program is available from the Program Counsellor. Advising for each major is available through the assigned faculty advisor responsible for the major. Students are encouraged to seek the advice of the faculty advisors when choosing restricted electives and planning course selections.

### Degree

The degree granted for the successful completion of this honours program will be the Bachelor of Science in Environmental Sciences–B.Sc. (Env.).

### Continuation of Study

Students are advised to consult the regulations for Continuation of Study in Chapter VIII–Undergraduate Degree Regulations and Procedures of this Calendar.

### Conditions for Graduation

In order to graduate from the B.Sc.(Env.) program, students must successfully complete a minimum of 20.00 credits including all the stated course requirements for the program. As well, students must achieve a cumulative average of 60% or higher over all course attempts.

### Environmental Sciences (Co-op)

A 5-year Honours Program in Environmental Sciences is offered as a Co-operative Education Program. This option is offered within the B.Sc. (Env.) degree and is available to all majors. The course requirements are the same as those listed for the regular B.Sc. (Env.) program, by the Co-operative Education Program and as outlined in the Continuation of Study policy (Chapter VIII–Undergraduate Degree Regulations & Procedures).

### Earth Observation and Geographic Information Sciences Co-op Work Term Schedule

Year	Fall	Winter	Summer
1	Academic Semester 1	Academic Semester 2 COOP*1100	Off
2	Academic Semester 3	Academic Semester 4	COOP*1000 Work Term 1
3	Academic Semester 5	Academic Semester 6	Off
4	COOP*2000 Work Term II	COOP*3000 Work Term III	COOP*4000 Work Term IV
5	Academic Semester 7	Academic Semester 8	N/A

### Ecology, Environmental Economics and Policy, and Environmental Sciences Co-op Work Term Schedule

Year	Fall	Winter	Summer
1	Academic Semester 1	Academic Semester 2	Off
2	Academic Semester 3	COOP*1000 Work Term I	COOP*2000 Work Term II
3	Academic Semester 4	Academic Semester 5	COOP*3000 Work Term III
4	COOP*4000 Work Term IV	Academic Semester 6	Off
5	Academic Semester 7	Academic Semester 8	N/A

### Environment and Resource Management Co-op Work Term Schedule

Year	Fall	Winter	Summer
1	Academic Semester 1	Academic Semester 2	Off
2	Academic Semester 3	Academic Semester 4	COOP*1000 Work Term I
3	Academic Semester 5	Academic Semester 6	COOP*2000 Work Term II
4	COOP*3000 Work Term III	COOP*4000 Work Term IV	Off
5	Academic Semester 7	Academic Semester 8	N/A

Since some of the course requirements in the degree program (core or major) are not offered each semester, careful planning and program consultation with the Faculty Co-op Advisor is essential. In particular, students are encouraged to seek advice when choosing for their Summer academic semester.

### The Environmental Sciences Program

The degree in Environmental Sciences consists of a minimum of 20.00 credits, as follows:

1. 7.00 Environmental Sciences Core
2. 8.00 - 10.50 Environmental Sciences required courses and restricted electives according to major.
3. Free Electives

Within these courses, students must include at least 6.00 credits at the 3000 or 4000 level, and no program may include more than 7.00 credits at the 1000 level.

Please note that not all courses in the "One of" options are available each semester (F, W, S). Students are encouraged to seek advice from the appropriate advisor when selecting and scheduling courses.

## Minors and Double Counting

Students may also take a minor in another subject area. A maximum of 50% of the requirements of the minor may be applied to meet the requirements of the B.Sc.(Env.) program. Students should note that completion of a minor may require additional credits beyond the 20.00 required for the program. Students intending to acquire a minor should consult with their Program Counsellor.

## First Year Curriculum

The first year courses have been selected to provide students with sufficient background and knowledge to enter any one of the Environmental Sciences majors.

Code	Title	Credits
<b>Semester 1</b>		
BIOL*1070	Discovering Biodiversity	0.50
CHEM*1040	General Chemistry I	0.50
ENVS*1030	Introduction to Environmental Sciences	1.00
MATH*1080	Elements of Calculus I	0.50
<b>Semester 2</b>		
BIOL*1090	Introduction to Molecular and Cellular Biology	0.50
CHEM*1050	General Chemistry II	0.50
FARE*1040	Introduction to Environmental Economics, Law and Policy	1.00
GEOG*1300	Introduction to the Biophysical Environment	0.50

**Note:** Co-op students must select COOP\*1100 Introduction to Co-operative Education

## Environmental Sciences Core

In addition to the common first year curriculum, students are required to take the following core Environmental Sciences courses in the semesters recommended in the schedule of studies:

Code	Title	Credits
ENVS*4001	Project in Environmental Sciences	0.50
ENVS*4002	Project in Environmental Sciences	0.50
Select 0.50 credits from the following:		
ECON*2100	Economic Growth and Environmental Quality	0.50
FARE*2700	Natural Resource Economics and Policy	0.50
GEOG*2210	Environment and Resources	0.50

A required statistics course is prescribed by the student's choice of major.

## Environmental Sciences Majors

- Earth Observation and Geographic Information Science
- Ecology

- Environment and Resource Management
- Environmental Economics and Policy
- Environmental Sciences

Requirements for each of these majors are described in the detailed schedules of studies.

## B.Sc.(Env.) Areas of Study

- Earth Observation and Geographic Information Science (EO) (<https://calendar.uoguelph.ca/undergraduate-calendar/programs-majors-minors/earth-observation-gis-eo/>)
- Ecology (ECOL) (<https://calendar.uoguelph.ca/undergraduate-calendar/programs-majors-minors/ecology-ecol/>)
- Environment and Resource Management (ERM) (<https://calendar.uoguelph.ca/undergraduate-calendar/programs-majors-minors/environment-resource-management-erm/>)
- Environmental Economics and Policy (EEP) (<https://calendar.uoguelph.ca/undergraduate-calendar/programs-majors-minors/environmental-economics-policy-eeep/>)
- Environmental Sciences (ENVS) (<https://calendar.uoguelph.ca/undergraduate-calendar/programs-majors-minors/environmental-sciences-envs/>)