

# Environmental Science (ENSC)

---

## Environmental Science (ENSC) Courses

### ENSC 1500 [0.5 credit]

#### Environmental Science Seminar

The purpose and nature of the program; society's view on the natural and human-modified environment; major environmental issues and their scientific aspects; preparation and presentation of paper and seminars.

Includes: Experiential Learning Activity

Prerequisite(s): enrolment in the Environmental Science program.

Lectures, seminars and workshops four hours a week.

### ENSC 2000 [0.5 credit]

#### Environmental Science Field Methods

A field-based course introducing students to practical methods in environmental science. Topics will include earth sciences, geography, biology, and chemistry related aspects of environmental sciences and will focus on quantitative techniques to assess environmental impacts and management. A supplementary fee will apply.

Includes: Experiential Learning Activity

Prerequisite(s): EARTH 1002 and BIOL 1004 or BIOL 1104, CHEM 1001 and CHEM 1002 and permission of the Institute.

Field trips, lectures and workshops, seven hours per week (delivered on a single day and on up to two mandatory weekend trips).

### ENSC 2001 [0.5 credit]

#### Earth Resources and Natural Hazards: Environmental Impacts

Environmental impact of mineral, energy and water resource exploitation and impact of hazardous Earth processes such as volcanic eruptions, earthquakes and others: their prediction and mitigation.

Lectures three hours per week.

### ENSC 2002 [0.5 credit]

#### Methods and Analysis in Environmental Science

Study and application of qualitative and quantitative techniques in environmental science, including study design, data collection and assembly, database manipulation, data analysis, and critically evaluating scientific information.

Includes: Experiential Learning Activity

Prerequisite(s): STAT 2507 or permission from the Institute.

Lectures and seminars three hours a week.

### ENSC 3000 [0.5 credit]

#### Environmental Science and Management: Theory and Practice

Theoretical and practical perspectives related to environmental science and management; Emphasis on real-world problems associated with human activities and development of solutions in natural and built environments; Hands-on experience with environmental monitoring and restoration. A supplementary fee will apply.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in Environmental Science or permission of the Institute.

Field trips, lectures and workshops, 7 hours per week (delivered on a single day).

### ENSC 3002 [0.5 credit]

#### Applied Data Analysis

Data analysis strategies to tackle real-world, wicked problems. Includes a hands-on applied environmental data science project with a variety of partners. Topics include: obtaining and working with data, exploring causal relationships, data ethics, communicating data, and moving from data to information to action.

Includes: Experiential Learning Activity

Also listed as ISAP 3001.

Prerequisite(s): STAT 2507.

Lecture three hours per week.

### ENSC 3106 [0.5 credit]

#### Aquatic Science and Management

Fundamentals of aquatic science. The physical, chemical, and biotic aspects of lake, river, and estuary systems including human impacts, management and conservation.

Includes: Experiential Learning Activity

Also listed as GEOG 3106.

Prerequisite(s): third-year standing and a second year science or engineering course.

lectures, three hours per week

### ENSC 3509 [0.5 credit]

#### Group Research in Environmental Science

Major project relating to an issue involving environmental science; effective methods of team research and presentation of group work. May include field work during class time or on weekends.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in the Honours Environmental Science program or permission of the Institute.

Lectures, seminars and workshops three hours a week.

**ENSC 3700 [0.5 credit]****Topics in Environmental Science**

Specific topics of current interest. Topics may vary from year to year.

Prerequisite(s): Third year standing in the Environmental Science program or permission of the Institute.

**ENSC 3906 [0.5 credit]****Project Planning for Environmental Research**

Independent or group study on the fundamentals of scientific investigation, which may include use of literature, learning of research techniques, and development of a research proposal, in consultation with a Faculty supervisor. May include directed reading, written assignments, tutorials, laboratory or field work.

Includes: Experiential Learning Activity

Prerequisite(s): Good standing in third year Environmental Science and permission of the Institute.

**ENSC 3999 [0.0 credit]****Co-operative Work Term**

Practical experience for students enrolled in the Co-operative Option. To receive course credit a student must receive satisfactory evaluations from their work term employer. Written reports describing the work term project will be required. Graded Sat or Uns.

Includes: Experiential Learning Activity

Prerequisite(s): registration in the Environmental Science Co-operative Option and permission of the Institute. Four-month work term.

**ENSC 4001 [0.5 credit]****Environmental Science Practicum**

Experience working in the environmental science sector, applying academic training to practical environmental issues. Graded Sat/Uns.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Environmental Science program.  
practicum

**ENSC 4002 [0.5 credit]****Environmental Decisions**

The regulatory and scientific aspects of environmental management decisions, including risk analysis and mitigation, managing chronic and acute environmental impacts, and conservation of species and landscapes. Students will use real-world case studies to learn traditional and cutting-edge decision-making tools.

Includes: Experiential Learning Activity

Prerequisite(s): third-year standing in any B.Sc. program or permission of the Institute.

Workshops three hours per week.

**ENSC 4003 [0.5 credit]****Food Systems and the Environment**

This course explores issues of food systems and their sustainability. We will discuss aspects of food systems, including production, distribution, consumption, waste management, and their impact on communities and the environment.

Includes: Experiential Learning Activity

Prerequisite(s): third year standing in B.Sc. or B.HSc. program or permission of the Institute.

Lecture three hours per week.

**ENSC 4005 [0.5 credit]****Environmental Solutions and Sustainability Science**

Focus on conceptualization and application of different knowledges and knowledge systems to complex, interdisciplinary real-world problems through an environmental lens. Development of skills and mindset needed to generate creative solutions that will be embraced by diverse publics and decision makers.

Includes: Experiential Learning Activity

Precludes additional credit for ENSC 4700A if taken in Winter term 2021 or Winter term 2022.

Prerequisite(s): Third year standing in B.Sc. programs in Environmental Science, Interdisciplinary Science and Practice, Earth Science, Biology, and Geography and B.A. programs in Biology and Geography, or permission of the Institute.

Lecture, seminar, or workshops three hours a week.

**ENSC 4700 [0.5 credit]****Topics in Environmental Science**

Prerequisite(s): third-year standing in the Environmental Science program or permission of the Institute.

Lectures and discussion three hours a week.

**ENSC 4901 [0.5 credit]****Directed Projects**

Independent or group study, for fourth-year students to explore a particular project, in consultation with a Faculty supervisor. May include directed reading, written assignments, tutorials, laboratory or field work.

Includes: Experiential Learning Activity

Prerequisite(s): permission of the Institute. Students normally may not offer more than 1.0 credit of Directed Special Studies in their program.

**ENSC 4906 [1.0 credit]****Honours Research Project**

An independent investigation into an aspect of environmental science supervised by a member of the faculty. Approval of the topic and the research schedule must be obtained from the project supervisor and the course coordinator before the last date for registration.

Includes: Experiential Learning Activity

Prerequisite(s): fourth-year standing in the Honours Environmental Science program, a major CGPA 8.0 and permission of the Institute.  
independent study

**ENSC 4909 [1.0 credit]****Translational Approach to Indigenous Community Wellness**

This course involves co-developing an Indigenous community-led process or product that addresses a current and specific mental health issue. Involves working in interdisciplinary groups with a community partner.

Includes: Experiential Learning Activity.

Includes: Experiential Learning Activity

Also listed as ISAP 4909, MPAD 4906, NEUR 4906.

Precludes additional credit for ENSC 4906, ISAP 4906, ISAP 4907, ISAP 4908, NEUR 4905, NEUR 4907, NEUR 4908.

Prerequisite(s): Fourth-year standing with a minimum Major CGPA of 10.0 in the Honours Environmental Science program and permission of the instructor.

Seminars or workshops three hours a week. A field trip to the partner community is typically required.