



## ENSC-101 – Introduction to Environmental Science

University Arts and Science

**Effective Term & Year:** Fall 2025  
**Course Outline Review Date:** 2030-03-01

**Program Area:** Math and Sciences

### Description:

This course introduces students to scientific analysis and communication of environmental issues. Students will learn about natural systems and the complex interactions among their biological, physical, chemical and anthropogenic components. Students will consider Western and Indigenous perspectives, governance, and economic factors to critically evaluate and communicate environmental problems. Students will investigate how those issues affect various aspects of the ecosphere, including humans, and will use integrated knowledge and perspectives to explore sustainable solutions. Laboratory activities, field trips and guest lectures will offer the opportunity to study regional environments and local environmental issues.

### Program Information:

This course can be used as a required course or elective course of an Associate of Science or Associate of Arts degree at the College of the Rockies.

**Delivery Methods:** On-campus (Face-to-Face)

**Credit Type:** College of the Rockies Credits

**Credits:** 3

**Course type/s:** Sciences, Lab Sciences

### Instructional Activity and Hours:

Activity	Hours
Classroom, Directed Studies or Online Instruction	45

Seminar/Tutorials	
Laboratory/Studio	45
Practicum/Field Experience	
Co-op/Work Experience	
Other	
Total	90

### Course Requisites:

- Earned a minimum grade of C+ (65%) in at least 1 of the following:
  - [ENFP 12](#) – English First Peoples 12
  - [ENST 12](#) – English Studies 12
  - [ENGL090](#) – English – Provincial Level

### Prior Learning and Recognition: Yes

Students are able to request formal recognition of their prior learning or experience outside the classroom. Challenge examination, portfolio-assisted assessment, work-based assessment or a combination of assessments that is appropriate to identify, assess, and recognize prior skills, competencies, and knowledge to achieve course credit. Tuition fees apply, refer to [Policy 2.5.5 Prior Learning Assessment and Recognition \(PLAR\)](#) or contact an education advisor for more information.

### Course Transfer Credit:

For information about receiving transfer credit for courses taken at either British Columbia or Alberta institutions, please see <https://www.bctransferguide.ca/> or <https://transferalberta.alberta.ca> . For more transfer credit information, please visit <https://www.cotr.bc.ca/Transfer>

All requests for course transfer credit from institutions in British Columbia or elsewhere should go to the College of the Rockies Enrolment Services office.

### Textbook Resources:

Textbook selection varies by instructor and may change from year to year. At the Course Outline Effective Date the following textbooks were in use:

Karr, S. 2021. *Environmental Science for a Changing World*. Fourth Edition

Please see the instructor's syllabus or check COTR's online text calculator <https://textbook.cotr.bc.ca/> for a complete list of the currently required textbooks.

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## Learning Outcomes:

Upon the successful completion of this course, students will be able to:

- Describe the scientific perspective on environmental systems and issues, explaining how science helps us understand the world and the impact of human activities on ecosystems.
  - Identify and explain Earth's environmental systems (atmosphere, hydrosphere, biosphere, and lithosphere), including the processes, cycles, and interactions within and between these systems.
  - Examine and assess the impacts of global environmental change, along with local and regional environmental issues, identifying their causes, consequences, and potential solutions.
  - Compare and contrast Indigenous and Western scientific perspectives on environmental change, sustainability, and ecological connections, and analyze the historical and current relationships between Indigenous communities and the environment in British Columbia.
  - Evaluate the causes and consequences of environmental change experienced by Indigenous communities, with a focus on the interaction between physical and social processes that shape Indigenous landscapes.
  - Apply critical and scientific thinking to develop creative solutions to current and future environmental challenges, considering how human attitudes influence problem-solving.
  - Critically evaluate environmental research and information, assessing the credibility of sources and the validity of conclusions on sustainability and environmental issues.
  - Demonstrate proficiency in scientific methods, conducting research, synthesizing data, and communicating environmental science knowledge, analyses, and conclusions both orally and in writing.
  - Interpret and analyze environmental data using basic statistical methods, including constructing graphs and drawing conclusions to support environmental problem solving and decision making.
  - Recognize how scientific understanding of the environment fosters a culture of environmental stewardship and ethical responsibility toward the planet.
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## Course Topics:

- Atmosphere – properties, structure, air pollution
- Lithosphere- fossil fuels, mineral resources, mining
- Hydrosphere – hydrologic cycle, water quantity, quality and distribution
- Biosphere – properties, ecosystems, nutrient cycling, biodiversity
- Ecology – ecosystems, population ecology, community ecology, species interactions
- Biodiversity – evolution, extinction, factors affecting biodiversity, invasive species,

conservation

- Terrestrial ecosystems – soil ecosystems, pollution, degradation and protection, forest ecosystems, deforestation and forest management
- Aquatic ecosystems – surface water, ground water, water use, pollution
- Agriculture – food production, food security, pest management, biotech, sustainable agriculture
- Waste management – Solid waste, plastic waste, hazardous waste
- Governance – environmental law and policy, environmental ethics, environmental economics
- Indigenous ways of knowing nature – historic and current attitudes about the environment, early European settler's attitudes toward the environment, current land and water use, development of values for conservation and sustainability
- Climate change – trends and solutions
- Energy alternatives – renewable energy
- Sustainability – strategies, trends, sustainable development

### OPTIONAL COURSE TOPICS:

- Urban environment – ecology, growth, transportation, waste, sustainability, water issues, air quality issues, sustainable communities
- Environmental Health – toxic agents, effects, mitigation

*See instructor's syllabus for the detailed outline of weekly readings, activities and assignments.*

## Evaluation and Assessments

### Assessment Type: On-Campus (face-to-face)

Assessment Type	% of Total Grade
Laboratory – Assignments/reports/presentations	35%
Lecture – Midterm (s)	30%
Lecture – Final Exam	35%
Total	100%

### Grade Scheme

A+	A	A-	B+	B	B-	C+	C	C-	D	F
>=90	89-85	84-80	79-76	75-72	71-68	67-64	63-60	59-55	54-50	<50

### Pass requirements:

A passing average (50% or higher) in both the theory and practical components.

**Evaluation Notes:** A grade of "D" grants credit, but may not be sufficient as a prerequisite for sequential courses.

**Exam Attendance:**

Students must attend all scheduled exams at the appointed time and place. Instructors may approve an alternate exam to accommodate an illness or personal crisis. Department heads will consider other written requests. Any student who misses a scheduled exam without prior approval will receive a "0" on the exam.

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**Academic Policies:**

College of the Rockies policies related to courses can be found at <https://cotr.bc.ca/about-us/college-policies/> and include the following:

- Policy 2.1.4 Course Audit
  - Policy 2.4.1 Credential Framework
  - Policy 2.4.3 Students with Documented Disabilities
  - Policy 2.4.4 Student Rights, Responsibilities and Conduct
  - Policy 2.4.8 Academic Performance
  - Policy 2.4.9 Student Feedback and Concerns
  - Policy 2.4.11 Storage of Academic Works
  - Policy 2.5.3 Student Appeal
  - Policy 2.5.5 Prior Learning Assessment and Recognition (PLAR)
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**Equivalent Course(s) and Course Code Changes**

Prior Course Code: TRMP 237 >> ENST 200

Date changed: January 2010

**Course Changes:**

The College of the Rockies updates course outlines regularly to meet changing educational, employment and marketing needs. The instructor will notify students in writing of any updates to this outline during the semester. The instructor reserves the right to revise, add or delete material while meeting the learning outcomes of this course outline.