COLLEGE OF THE ROCKIES

Introduction to Environmental Science – ENSC 101
University Arts and Sciences Program

Course Outline

COURSE IMPLEMENTATION DATE: **September 2020**
OUTLINE EFFECTIVE DATE: **September 2020**
COURSE OUTLINE REVIEW DATE: **March 2025**

GENERAL COURSE 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: This course is delivered face to face.

COTR Credits: 3

Hours for this course: 90 hours

Typical Structure of Instructional Hours:

Instructional Activity	Duration
Lecture Hours	45
Seminars / Tutorials	
Laboratory / Studio Hours	45
Practicum / Field Experience	
Other Contact Hours	
Total	90

Practicum Hours (if applicable):

Type of Practicum	Duration
On-the-Job Experience	N/A
Formal Work Experience	N/A
Other	N/A
Total	

Course Outline Author or Contact:
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Signature

APPROVAL SIGNATURES:

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Department Head Signature

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Dean Signature

EDCO

Valid from: September 2020 – March 2025

Education Council Approval Date

COURSE PREREQUISITES AND TRANSFER CREDIT:

Prerequisites: Minimum 65% in either English 12, English Studies 12, English First People 12, ENGL 090, or equivalent. (refer to Course Equivalency information on the College website)

Corequisites: none

Flexible Assessment (FA):

Credit can be awarded for this course through FA ☑ Yes ☐ No

Learners may request formal recognition for flexible assessment at the College of the Rockies through one or more of the following processes: External Evaluation, Worksite Assessment, Demonstration, Standardized Test, Self-assessment, Interview, Products/Portfolio, Challenge Exam. Contact an Education Advisor for more information.

Transfer Credit: For transfer information within British Columbia, Alberta and other institutions, please visit http://www.cotr.bc.ca/Transfer.

Student should also contact an academic advisor at the institution where they want transfer credit.

Prior Course Number: N/A

Textbooks and Required 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:

Withgott, J., Brennan, B. and Murck B. 2016. *Environment: The Science Behind the Stories*, Third Canadian Edition. Pearson

OR

Branfireun, M., Karr, S., Interlandi, J. and Houtman A. 2018. *Environmental Science for a Changing World.* Canadian edition

Please see the instructor's syllabus or check COTR's online text calculator http://go.cotr.bc.ca/tuition/tCalc.asp *for a complete list of the currently required textbooks.*

LEARNING OUTCOMES:

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

- recognize environmental systems and issues from a scientific perspective and describe how science helps us understand the world;
- describe Earth's systems: the atmosphere, hydrosphere, biosphere and lithosphere and identify the processes cycles and interactions between and within systems;
- describe the impact that human activity has on the environment and recognize that humans are part of the ecosystems;
- identify local and regional environmental issues;
- describe traditional Indigenous and historic European relationships with the environment in BC;
- explain how those relationships have changed over time as reflected in current environmental policies and legislation;
- identify various causes and consequences of environmental change as they are experienced by Indigenous communities. Students will gain an understanding of the interaction between physical and social processes and the role they play in creating current day Indigenous landscapes and environments;
- identify methodologies and applications of Indigenous and Western science with an emphasis on environmental change, animal behavior, evolution, sustainable practices, and implications of intrinsic ecological connections;
- recognize how attitudes (including personal ones) affect our ability to find solutions;
- apply critical and scientific thinking to come up with creative solutions to environmental challenges current and future;
- critically evaluate the science, sources and credibility of information and research on environmental issues and sustainability;
- apply scientific method to research, evaluate, synthesize and communicate environmental science knowledge, data, analyses and interpretations both orally and in written work;
- recognize and discuss impacts of changing global environment;
- recognize how a scientific understanding of the environment can cultivate a culture of environmental stewardship and environmental ethic;
- critically evaluate the relationship between economics and environmental policy; and
- demonstrate competence in basic statistics, interpretation of environmental data, constructing graphs.

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 ASSESSMENT (Face-to-Face Delivery):

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

Please see the instructor's syllabus for specific classroom policies related to this course, such as details of evaluation, penalties for late assignments and use of electronic aids.

In order to pass the course, a passing grade (50% or greater) is required in each of the laboratory portion and lecture portion of the course

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EXAM POLICY:

Students must attend all required scheduled exams that make up a final grade at the appointed time and place.

Individual instructors may accommodate for illness or personal crisis. Additional accommodation will not be made unless a written request is sent to and approved by the appropriate Department Head prior to the schedules exam.

Any student who misses a scheduled exam without approval will be given a grade of "0" for the exam.

COURSE GRADE:

Course grades are assigned as follows:

Grade	A+	A	A-	B+	B	B-	C+	C	C-	D	F
Mark (Percent)	≥ 90	89-85	84-80	79-76	75-72	71-68	67-64	63-60	59-55	54-50	< 50

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

ACADEMIC POLICIES:

See www.cotr.bc.ca/policies for general college policies related to course activities, including grade appeals, cheating and plagiarism.

COURSE CHANGES:

Information contained in course outlines is correct at the time of publication. Content of the courses is revised on an ongoing basis to ensure relevance to changing educational, employment and marketing needs. The instructor endeavours to provide notice of changes to students as soon as possible. The instructor reserves the right to add or delete material from courses.