

## **GEOG 100 ENVIRONMENT AND SUSTAINABILITY**

spring 2016

### **Instructor**

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### **Course Description**

An introduction to the impact of human activity on ecological systems. Topics include ecosystem structure and function, human population change, resource management and pollution

### **Learning Outcomes**

On completion of the course students should be able to

- demonstrate a knowledge of ecological systems and the impact of human activity on those systems
- demonstrate an understanding of key environmental issues
- demonstrate knowledge of courses of action which address environmental concerns.

### **Approach**

Although largely a classroom-based course, a blended model of course delivery is used in the course, to include an online component. Students can access all course material on Camosun's D2L website <http://online.camosun.ca/>.

### **Reading**

The required text for the course is Raven, Hassenzahl, Gift, and Berg, 2015, Environment (9th edition), Toronto: Harcourt [although the earlier edition text (8<sup>th</sup>, 2012) is acceptable; there will be some differences].

Several required readings are indicated in the topic outline below. These readings, along with the labs, are available in the **course manual**. Students should purchase the **course manual** from the bookstore.

### **Evaluation**

#### **Quizzes (20% of course mark)**

Quizzes are based on the mastery model of learning. There are three quizzes interspersed throughout the course. Students have the opportunity to take each quiz several times, thus providing the opportunity to reinforce understanding of course material.

#### **Labs (45% of course mark)**

There are regular lab exercises throughout the course. These are an integral part of the course; they provide an opportunity to apply the lecture and text material to specific and practical examples. Some labs have an accompanying reading.

Lab assignments are always due the following week, at the first class of the week, unless otherwise stated. The labs from the course manual can be hand-written, but your handwriting must be neat. Untidy and illegible writing will not be marked. The podcast exercises are online. These also have a due date of the first class of the following week.

#### **Class Discussion Questions (10% of course mark)**

There are weekly discussion questions. These questions are intended to raise important concepts covered in class and the text and provide the opportunity for small group discussion. Discussion will take place in small groups. In addressing the questions identify key concepts and structure the discussion around these concepts. Students will take turns acting as recorder. The recorder will keep notes of the discussion and make a list of the names of the students present. To receive marks, the notes and list of students will be handed in on the day of the discussion.

#### **Research Paper (25% of course mark)**

Students will choose one of the issues discussed in the Class Discussions and write a research paper. The paper will present a thesis, and support it with data and discussion. The paper provides the opportunity to apply and discuss concepts that we have studied in the course and are relevant to your chosen issue.

A map, **hand drawn by the author**, will accompany the paper, at an appropriate scale to provide spatial context to some aspect of the issue. The map will contain map elements of **title**, **scale**, and **legend**. **Spatial**

**referencing** (e.g. latitude and longitude) must be included in the map. It is a requirement that you refer to the map in your paper.

An important part of writing the paper is substantiating credibility of the material presented, by citing sources. Primary academic sources (i.e. peer reviewed) are most credible in this regard, and **two primary sources** are required. Students are required to cite a **minimum of four sources**. The paper will follow usual academic format of introduction, discussion and conclusion. A short paper is expected. Be precise and to-the-point in presenting the material. Use 1000 words as a guide but this is not a firm target. The research paper must be typed with DOUBLE SPACING. The paper is due in the last class of the semester

Research Papers are graded on the basis of the following criteria:

*Quality of research* (20%) – This criterion relates to breadth of information and relevance. Choose your sources carefully. Use two primary sources.

*Substance* (30%) - **identify important concepts that we have discussed in the course** and show that you understand the material; explain it accurately and clearly

*Quality of thought and analysis* (30%) - show that you can think intelligently and critically about the material; present some of your own ideas

*Style* (10%) - write your paper in standard academic English, with proper grammar, syntax and punctuation; cite all sources using an accepted bibliographic style. Primary research sources are strongly encouraged, i.e. sources that have been peer- reviewed (the course text is acceptable).

*Map* (10%) - A map, **hand drawn by the author**, will accompany the paper. The map will contain map elements of **title, scale, spatial referencing** (e.g. latitude and longitude) and **legend**.

#### Evaluation summary:

Quizzes	- 20%
Lab work	- 45%
Discussion questions	- 10%
Research paper	- 25%

#### Late work

Any lab or report handed in late will be penalized 5% for 2 days, and 10% for 3-7 days. Very late submissions (more than one week late) will not be accepted.

#### Topic Outline

##### **INTRODUCTION**

Week starting

**May 2-**

**Week1**

CLASS 1 Introduction to the course: course outline  
The Environment: What is the problem?

**Lab:** Geography of pollution

**Class discussion:** Human impact on the environment.

**What are the most important environmental problems facing us today?**

##### **UNDERSTANDING THE HUMAN RELATIONSHIP WITH THE ENVIRONMENT**

CLASS 2 Introducing environmental science and sustainability  
Ecological Footprints  
Text: Chap 1

**Lab:** Environmental science: research and the scientific method; geography of environment; human impact on the environment; measuring ecological footprints

**Class discussion 1:** Recognizing ecological limits

**Do Canadians need to recognize ecological limits and reduce their ecological footprint?**

**Class discussion 2:** Scientific assessment, risk analysis and the precautionary principle:  
Examining risks associated with major projects such as oil development.

**Is oil sands development in Alberta an acceptable risk?**

Video: H2Oil

**May 9-  
Week 2**  
CLASS 1

Addressing environmental problems: Policy, economics and worldviews  
Text: Chap 2

**Lab:** Addressing environmental problems: Policy and economics; worldviews.

**Class discussion:** Addressing environmental problems

**How 'green' is our campus? What environmental problems exist on the Camosun campus? What solutions can you identify to these problems?**

Video: Subdue the Earth

### ***UNDERSTANDING THE ENVIRONMENT***

CLASS 2      Structure and function of ecosystems: Ecosystems and Energy; Ecosystems and the Physical Environment  
Text: Chap 3, 4

**Lab:** Structure and function of ecosystems: Energy flow

**Class discussion 1:** Whaling.

**Is whaling an unacceptable practice that should be stopped immediately?**

**Class discussion 2:** Agriculture and the use of chemical fertilizers.

**Should society use legislation to prohibit farmers using chemical fertilizers? Is there an alternative to chemical fertilizers?**

Video: Whale Mission

**May 16-  
Week 3**  
CLASS 1:

Structure and function of ecosystems: Ecosystems and Living Organisms.  
Text: Chap 5

**Lab:** Structure and function of ecosystems: Physical and Living Worlds

**Class discussion:** The nature of community.

**Is community based mostly on competition or cooperation between members?**

CLASS 2      Quiz 1

**May 23-  
Week 4**  
CLASS 1

**HOLIDAY**

CLASS 2      Ecosystems of the World  
Focus on forest ecosystems  
Text: Chap 6

**Class discussion:** Protecting BC's temperate rainforest ecosystem

**Should cutting of BC's old growth temperate rainforest be stopped immediately?**

**Lab:** Examining ecosystems; Mapping Canada's ecosystems using GIS

Video: Battle for the Trees

**May 30-  
Week 5**

CLASS 1 Human population  
Text: Chap 8

**Online discussion:** Overpopulation  
**The current human population crisis causes or exacerbates all environmental problems, including energy issues and climate change: What is the solution?**

**Lab:** Human population dynamics

CLASS 2 Quiz 2

***UNDERSTANDING ENVIRONMENTAL CHANGE***

**June 6-**

**Week 6**

CLASS 1 Food  
Text: Chap 18

**Class discussion:** Agriculture  
**Should all food be produced organically?**

**Lab:** Calculating your Ecological Footprint

Video: Ecological Footprint

CLASS 2 Climate change  
Text: Chap 20

**Class discussion:** Canada's response to climate change:  
**What are we doing? What should we be doing? Given historic emissions, does Canada have the same or more responsibility than nations such as China and India?**

**Lab:** Podcast - Climate change

**June 13-**

**Week 7**

CLASS 1 Quiz 3

CLASS 2 Review and reflection  
**Lab:** Reflecting on the future

**Research paper due.**

## Grading System

### Standard Grading System (GPA)

Percentage	Grade	Description	Grade Point Equivalency
90-100	A+		9
85-89	A		8
80-84	A-		7
77-79	B+		6
73-76	B		5
70-72	B-		4
65-69	C+		3
60-64	C		2
50-59	D	Minimum level of achievement for which credit is granted; a course with a "D" grade cannot be used as a prerequisite.	1
0-49	F	Minimum level has not been achieved.	0

### Temporary Grades

Temporary grades are assigned for specific circumstances and will convert to a final grade according to the grading scheme being used in the course. See Grading Policy E-1.5 at [camosun.ca](http://camosun.ca) for information on conversion to final grades, and for additional information on student record and transcript notations.

Temporary Grade	Description
I	<i>Incomplete:</i> A temporary grade assigned when the requirements of a course have not yet been completed due to hardship or extenuating circumstances, such as illness or death in the family.
IP	<i>In progress:</i> A temporary grade assigned for courses that, due to design may require a further enrollment in the same course. No more than two IP grades will be assigned for the same course. <i>(For these courses a final grade will be assigned to either the 3<sup>rd</sup> course attempt or at the point of course completion.)</i>
CW	<i>Compulsory Withdrawal:</i> A temporary grade assigned by a Dean when an instructor, after documenting the prescriptive strategies applied and consulting with peers, deems that a student is unsafe to self or others and must be removed from the lab, practicum, worksite, or field placement.

### Recommended materials or services to assist students to succeed throughout the course

#### LEARNING SUPPORT AND SERVICES FOR STUDENTS

There are a variety of services available for students to assist them throughout their learning. This information is available in the College calendar, at Student Services, or the College web site at [camosun.ca](http://camosun.ca).

#### STUDENT CONDUCT POLICY

There is a Student Conduct Policy **which includes plagiarism**. It is the student's responsibility to become familiar with the content of this policy. The policy is available in each School Administration Office, at Student Services, and the College web site in the Policy Section.