GEOGRAPHY 100: ECOSYSTEMS AND HUMAN ACTIVITY WINTER 2003

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Context

When the century began, neither human numbers nor technology had the power to radically alter planetary systems. As the century closes, not only do vastly increased human numbers and their activities have that power, but major unintended changes are occurring in the atmosphere, in soils, in waters, among plants and animals, and in the relationships among all of these. The rate of change is outstripping the ability of scientific disciplines and our current capabilities to assess and advise. It is frustrating the attempts of political and economic institutions, which evolved in a different, more fragmented world, to adapt and cope. [Bruntland report, World Commission on Environment and Development, 1987, p. 22, Oxford University Press].

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; and
- Demonstrate knowledge of courses of action which address environmental concerns.

Reading

The required text for the course is Raven and Berg, 2001, Environment, Toronto: Harcourt.

Students can purchase the lab manual from the bookstore. The manual contains several readings required for specific labs.

Evaluation

Exams (35% of course mark)
There are four tests spread through the course, the first worth 5% and each of the others worth 10% of course marks.
The format will be discussed at the beginning of the semester.

Labs (30% 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. Assignments are always due the following week at the first class of the week. The labs can be hand-written, but hand writing must be neat. Untidy and illegible writing will not be marked.

Class Discussion Questions (5% of course mark*)*
There are six 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 groups of six students. In addressing the questions identify key concepts and structure the discussion around these.
Each student will take a turn acting as **chair** and **recorder**. The **chair** will lead the discussion. The **recorder** will keep notes of the discussion and make **a list of the names of the students present**. The notes and list of students will be handed in on the day of the discussion.

Take a Stand: Exercises and Paper

Take a Stand Exercises (12% of course mark)
These exercises provide students the opportunity to work with controversial issues, to research key facts surrounding the issue and to take a position based on an evaluation of the information. We will look at the controversy around four issues:

i) whaling
ii) logging of BC's coastal temperate rainforest
iii) development of the Arctic National Wildlife Refuge for oil and gas
iv) population controls versus 'freedom to breed'

Information on two of the issues is found in the Raven text, under Take a Stand, at the end of chapters 4 (whaling) and 10 (Arctic National Wildlife Refuge). Information on the other issues can be found using the internet, library and the course text and lab reading. Students will prepare a short report identifying three facts (arguments) that they see to be significant in support of each side. Each argument must contain an assertion plus evidence. The evidence can consist of a theory, concept or study from the text or readings or class discussions that supports the assertion's validity.
Students will conclude the report with a summary of their own position, based on the facts that they see to be most important (essentially this is a statement of the student's values). **The type-written report will be presented on the day of the debate**. **Late reports will not receive marks**. The issue will be debated in class whereby each side (students will be assigned randomly to one side) has the opportunity to present key arguments. To conclude the discussion students will look for common ground between the two sides.

Take a Stand Paper (18% of course mark)
Students will choose one of the four issues and write an academic research paper. The paper will present a thesis and arguments to support it. Here is the opportunity to present concepts that we have studied in the course and are relevant to the issue.

A map, created by the author, will accompany the paper containing map elements of title, scale, direction and legend. Georeferencing will also be included in the map.

An important part of writing the paper is substantiating credibility of the material presented, by citing 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 750 words as a guide but this is not a firm target. **The paper is due in the first class of the week of March 24.**

Research Papers are graded on the basis of:

- Quality of research (20%) - breadth of information and relevance. Choose your sources carefully
- Substance (30%) - show that you can identify important concepts and 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 (20%) - 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 (your text is acceptable).

Evaluation summary:

Tests	- 35%
Lab work	- 30%
Discussion questions	- 5%
Take a Stand exercises	- 12%
Take a Stand paper	- 18%

Class participation -- can be used to adjust a final grade upwards by one or two percent

General information for written work and exams

WRITTEN WORK
All written work must be typed. **The resarch paper must use DOUBLE SPACING.** Students are expected to use a standard bibliographic style. All sources must be cited.

LATE WORK
Any lab or report handed in late will be penalized10%, and very late submissions (more than one week late) will not be accepted.

EXAMS
Students missing an exam will be given a zero, unless special circumstances exist.

Topic Outline

Week starting
Theme 1: Humans in the Environment
Jan 6- Introduction to the course: course outline
The Environment: What is the problem?
Text: Chap 1

Jan 13- Addressing environmental problems: Part I
Text: Chap 2

Jan 20- Addressing environmental problems: Part II
Text: Chap 3

Theme 2: The World We Live In

Jan 27- Ecosystems and Energy
Text: Chap 4

TEST I

Feb 3- Ecosystems and Living Organisms
Ecosystems and the Physical Environment
Text: Chap 5, 6

Feb 10- Research paper

Reading Break: Feb 13/14

Feb 17- Major Ecosystems of the World
Text: Chap 7

Theme 3: Human Population and the Environment

Feb 24 - Population dynamics
Text: Chap 8 & 9
Required reading: Hardin, Garrett. *The Tragedy of the Commons.* Science, 162 (1969): 1243-1248.

TEST II

Theme 4: Energy

March 3- Energy: fossil fuels and renewables
Text: Chap 10 & 12

Theme 5: Natural Resources

March 10- Water
Text: Chap 13

March 17- Wildlife and Biodiversity
Text: Chap 16
Required reading: Leakey, R., *Value in Diversity*, The Sixth Extinction Ch. 8. Toronto: Doubleday

TEST III

March 24- Food
Text: Chap 18
Required reading: Wackernagel, M., How Big is Our Ecological Footprint?

Research paper due

Theme 5: Environmental Concerns

March 31- Atmospheric change
Text: Chap 20

Theme 6: Tomorrow's World

April 7- Revisiting World Views
Text: Chap 24

TEST IV

Lab Schedule

Week of

Jan 6- Geography of pollution
Introducing World Views

Jan 13- Addressing environmental problems I:
Research and the scientific method
Geography of environment

Jan 20- Addressing environmental problems II:
Policy and economics.
World Views.
Video: Subdue the Earth

Jan 27- Ecosystems I: Ecosystems and Energy

Take a Stand: The issue of whaling (Source: Raven text, p. 83)

Feb 3- Ecosystems II: Ecosystems and Living Organisms
Class discussion: The nature of community

Ecosystems II: Ecosystems and the Physical Environment
Class discussion: Agriculture and the use of chemical fertilizers

Feb 10 READING BREAK

Feb 17- Ecosystems III: Ecosystems of the World

Take a Stand: The issue of BC's coastal temperate rainforest: The logging of BC's old growth temperate rainforest should be stopped immediately.
(Source: Internet/text)
For an overview of the pacific coastal temperate rain forest bioregion and a map of global distribution of the temperate rain forest, see http://www.ecotrust.org/mission/bioregion.html

Feb 24- Population dynamics

Take a Stand: The issue of population controls versus 'freedom to breed' Strict population controls should be used by all nations to address social and environmental/resource problems.
(Source: Hardin's Tragedy of the Commons/text)

Video: The population bomb

March 3- Energy

Take a Stand: The issue of the Arctic National Wildlife Refuge
(Source: Raven text, p. 244)

March 10- Water resources
Class discussion: The price of water

March 17- Biodiversity
Class discussion: Hunting of elephants (see Globe and Mail article in lab manual)

Video: The Monarch Butterfly

March 24- Food Resources: Calculating your Ecological Footprint
Class discussion: Vegetarian diet

March 31- Climate change
Class discussion: Alberta's position on the Kyoto Protocol

Take a Stand: The issue of Victoria's sewage: Victoria should be forced to put in place appropriate treatment of its sewage immediately.
(Source: Internet/text)

April 7- World Views revisited
Video: The man who planted trees

Grades

Please note that grades at Camosun are determined as follows:

Letter grade	Numeric grade	Description
A+	95-100%	
A	90-94	Superior Level Achievement
A -	85-89	
B+	80-84	
B	75-79	High Level Achievement
B -	70-74	
C+	65-69	Satisfactory Achievement
C	60-64	Sufficient Achievement
D	50-59	Minimum level of achievement
F	0-49	Minimum level not achieved