



COURSE OUTLINE

The course description is online @ <http://camosun.ca/learn/calendar/current/web/geog.html>

Ω Please note: the College electronically stores this outline for five (5) years only.
 It is **strongly recommended** you keep a copy of this outline with your academic records.
 You will need this outline for any future application/s for transfer credit/s to other colleges/universities.

1. Instructor Information

(a)	Instructor:	Tim Elkin		
(b)	Office Hours:	Mon 10.30-11.30am, 1.30-2.30pm; Tues 9.30-10.30am, 1.30-2.30pm; Wed 10.30-11.30am		
(c)	Location:	E238		
(d)	Phone:	370-3115	Alternative Phone:	
(e)	Email:	elkint@camosun.bc.ca		
(f)	Website:			

2. Intended Learning Outcomes

(No changes are to be made to these Intended Learning Outcomes as approved by the Education Council of Camosun College.)

Upon completion of this course the student will be able to:

1. Demonstrate a knowledge of ecological systems and the impact of human activity on those systems.
2. Demonstrate an understanding of key environmental issues.
3. Demonstrate a knowledge of courses of action which address environmental concerns.

3. Required Materials

- (a) Raven, Berg and Hassenzahl, 2010, Environment (7th edition), Toronto: Harcourt
- (b) Course Manual

4. Course Content and Schedule

Week starting

Theme 1: Humans in the Environment

Sept 6-
Week1 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?

Sept 13-
Week 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; ecological footprints

Class discussion: Scientific assessment, risk analysis and the precautionary principle.

How rapidly should society allow the introduction of new scientific innovation? What chemicals pose a risk to the environment? What chemicals pose a risk to

human health? Should there be greater controls on the use of chemicals in society? Do genetically modified foods pose a risk to society?

Context: The oil spill resulting from BP's drilling in the Gulf of Mexico highlights risk associated with rapidly developing science and technology, and, more importantly, its regulation. As Kenneth Rogoff states, *The disaster ... poses a much deeper challenge regarding how modern societies regulate complex technologies. The speed of innovation seems to be outstripping government regulators' capacity to deal with risks, much less anticipate them.*

Required reading:

Kenneth Rogoff, *Technology, complexity, economy, catastrophe. Globe and Mail* Jun 02, 2010 (See Course Manual)

Class discussion: Recognizing ecological limits

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

Context: "The world will no longer be divided by the ideologies of 'left' and 'right,' but by those who accept ecological limits and those who don't.", [Wolfgang Sachs](#), Wuppertal Institute

Canada's ecological footprint is one of world's largest, at 7.1 ha per person (*Living Planet Report 2008*); yet its bio-capacity is also very large, at 14.5 ha per person, giving Canadians an ecological reserve of 7.4 ha, and eco-credit of 150% (bio-capacity relative to footprint). Can it be said that Canadians are in fact living within their means?

Required reading:

Global Footprint Network, *Living Planet Report 2008*, p.2-3; (See Course manual)

Sept 20-
Week 3

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

Theme 2: The World We Live In

Sept 27-
Week 4

Ecosystems and Energy
Text: Chap 3

Lab: Ecosystems and Energy

Class discussion: Whaling.

Is whaling an unacceptable practice that should be stopped immediately?

Context: The hunting of whales (whaling) has a long history. Traditional hunts by small groups of primarily indigenous peoples have been replaced by high tech factory-style whaling. Until the modern era, whale populations were rarely at the point of extermination. Now, populations of most of the large species and many of the smaller species are at critical levels. Should whaling in international waters be allowed to continue? Should whaling be limited to closely monitored hunts by indigenous people?

Consider the opposing views of whalers and environmentalists who oppose whaling. For additional information, see 'Take a Stand' in Raven text, end of chapter 3.

Oct 4-
Week 5

Structure and function of ecosystems
Ecosystems and Living Organisms; Ecosystems and the Physical Environment

Text: Chap 4, 5

Lab: Structure and function of ecosystems

Class discussion: The nature of community.

Is community based mostly on competition or cooperation between members?

Consider concepts in the chapter that are supportive of your

answer.

Class discussion: Agriculture and the use of chemical fertilizers.

Should society use legislation to prohibit farmers using fertilizers?

Is there an alternative to chemical fertilizers?

Oct 11-
Week 6

THANKSGIVING HOLIDAY

TEST I

Oct- 18
Week 7

Ecosystems of the World

Text: Chap 6

Class discussion: Protecting Canada's boreal forest ecosystem

Should development of Alberta's oil sands be stopped immediately to protect the Boreal forest ecosystem?

Context:

In reviewing Andrew Nikiforuk's book, Tar Sands: Dirty Oil and the Future of a Continent, Greystone Books provides a summary.

[It] is a critical exposé of the World's largest energy project - the Alberta oil sands - that has made Canada one of the worst environmental offenders on earth.

The US imports the majority of its oil, not from Saudi Arabia or Venezuela, but from its neighbour to the north, Canada. Canada has one third of the world's oil source; it comes from the bitumen in the oil sands of Alberta. Advancements in technology and frenzied development have created the world's largest energy project in Fort McMurray where, rather than shooting up like a fountain in the deserts of Saudi Arabia, the sticky bitumen is extracted from the earth. Providing almost 20 percent of America's fuel, much of this dirty oil is being processed in refineries in the Midwest. This out-of-control megaproject is polluting the air, poisoning the water, and destroying boreal forest at a rate almost too rapid to be imagined.

Readers will learn that oil sands: burn more carbon than conventional oil; destroy forests and displace woodland caribou; poison the water supply and communities downstream; drain the Athabasca, the river that feeds Canada's largest watershed; and contribute to climate change.

Reading: Greenpeace, *Tar Sands and Boreal Forest* (See Course manual)

Video: Alberta oil sands

Lab: Mapping ecosystems (GP computer lab)

Theme 3: Human Population and the Environment

Oct 25 -
Week 8

Human population dynamics

Text: Chap 8, 9

Class discussion: The new population bomb in the West

Should Canada increase its population growth rate?

Are you *pronatalist* or *neo-Malthusian*? In discussing your position with the group, discuss whether Western nations such as Canada, should plan to increase population growth rate to address aging societies, and if so, should they do so through higher fertility rates or through immigration?

Context: Carl Wilson defines the new population bomb as the *vast gulf in birth and death rates among the world's countries*. He points out that *wealthier, urbanized nations (especially in Europe) face dwindling and aging populations while poorer, rural ones (mainly in Asia and Africa) spawn the opposite situation*. The result may mean that Western nations become less competitive economically, while developing nations, by

reducing its fertility even moderately, can earn a 'demographic dividend' – *having many working people supporting fewer dependent children and seniors.*

The text (p.203) identifies two opposing viewpoints - Pronatalist and neo-Malthusian. Pronatalists think that declining birth rates threaten the vitality of their region. They are concerned that the decrease in population might result in a loss of economic growth. Pronatalists are concerned that large number of elderly will overwhelm pension and old age security systems unless a larger workforce is available to contribute to those systems. However immigration is resisted since it will result in dilution of cultural identity. Instead government policies are promoted that encourage larger families. Quebec has a history of pronatalist thinking in its government policies.

In contrast, neo-Malthusians maintain that a rapidly expanding population hampers economic growth (fewer resources, more pollution). They are not as opposed to immigration, and maintain that increased fertility rate is folly when population growth is such a serious problem in much of the world. They point out that because technological innovations have eliminated many jobs, the consequent unemployment would only be made worse by an increase in the labour force caused by a rise in birth rate. Immigration in itself is a controversial environmental issue. Some environmentalists point out that immigrants from developing nations contribute greatly to pollution and resource depletion as they adopt the affluent, high consumption lifestyle of 'typical' Canadian citizens. They call for both reduced birth rates and immigration rates to bring about sustainability.

The text (pp. 186-187) discusses age structure and effects of an aging population, pointing to its mixed bag of "benefits and problems".

Class discussion: The population bomb

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

Required reading:

Carl Wilson, *Global population still growing.* Globe and Mail February 25 2006 (see Course manual); text *Population concerns in Europe* (p.203)

Lab: Population dynamics

Video: Hans Rosling, [No more boring data](#)

Video: The population bomb

Theme 4: Resource and Environmental Management

Nov 1-
Week 9

Water
Text: Chap 14

Lab: Water resources

Class discussion: Dam construction in BC.

Should dam construction in BC be prohibited: Case of Site C?

Context: Dams can provide clean energy, water storage, and flood control. Hydro-electricity forms an important part of the BC economy. However, dams also can cause environmental degradation and can prevent fish from migrating and breeding. In the Pacific Northwest, salmon populations have declined greatly. The controversy over dam-building has come to the fore with the recent announcement of the BC government to build the Site C dam on the Peace River. The government argues that the new dam will allow the province to meet a projected 40% demand in electricity over the next 20 years.

Required reading:

Globe and Mail, 2010, *BC opens floodgates with third Peace River dam* (See Course manual)

Video: Cadillac desert

Nov 8-
Week 10

TEST II

Focus on research paper

Nov 15- Wildlife and biodiversity

Week 11

Text: Chap 17

Lab: Biodiversity

Required reading (lab):

Leakey, R., The Sixth Extinction. Ch. 8: *Value in Diversity*. Toronto: Doubleday (see Course manual)

Class discussion: Politics of wildlife protection

Is it possible to have both economic growth and wildlife protection? What are the options?

Required reading:

Aney, Warren, 2010, *Wildlife Conservation and Economic Growth: A Western Perspective*. AESS Conference, Portland June 2010 (Course manual)

Class discussion: Arctic National Wildlife Refuge

Should the Arctic National Wildlife Refuge be protected or developed as part of North America's oil and gas reserves?

Context: The fate of the Arctic National Wildlife Refuge relates to decisions the US makes about energy policy, transportation choices, and other seemingly unrelated matters. Caught in the balance are the culture and livelihood of the Gwich'in people and the migratory wildlife in this fragile ecosystem.

Video: Oil on ice

Nov 22- Food
Week 12

Text: Chap 19

Michael Pollan: [The omnivore's next dilemma](#)

Class discussion: Meat eating and the environment

Should Canadians be required to follow a vegetarian diet?

Required reading:

Michael Bond, 2008, *the trouble with meat*, Engineering and Technology (See Course manual)

Lab: Calculating your Ecological Footprint

Required reading (lab):

Wackernagel, Mathis, How Big is Our Ecological

Footprint? (See Course manual)

Video: Ecological Footprint

Nov 29- The atmosphere and atmospheric change
Week 13

Text: Chap 21

Research paper due first class of the week

Class discussion: Canada's position on carbon reduction targets.

Should Canada's efforts at addressing climate change be more far-reaching?

Context: Canada took a hard line at the climate change negotiations in Copenhagen in 2009, resisting Europeans arguments for far-reaching carbon reduction targets. Canada's position is that it could not meet its legally-binding Kyoto Protocol commitment (6% reduction on 1990 levels) without damaging its economy, and any future commitment it makes must recognize that reality. Canada has opted to follow the US lead: Canada's target under the Copenhagen Accord is a 17% reduction from 2005 levels by 2020, aligned with the US target. The government defended its new goal as key to maintaining the country's economic competitiveness within North America, noting it would be "counter-productive" to commit Canadian businesses to carbon reduction targets and regulations that would put them at a disadvantage with their major trading partner.

Canada and the US are unique in setting their targets against 2005 levels, as most nations have set their reductions to be measured by the common UN standard of 1990 levels - the European Union has agreed to 20% carbon reductions from 1990 levels by 2020. The US & Canada are in favour of a 2005 baseline as their carbon emissions have ballooned steadily since 1990. In fact, the US target is only 3.4% below 1990 levels. In Canada, the new target actually increases emissions, not decreases them.

Required reading:

Ronald Wright, 2010, *Foreword* in Homer-Dixon T. (ed.) Carbon Shift: How Peak Oil and the Climate Crisis will change Canada (Vintage Canada) (See Course Manual)

Lab: Climate change

Required reading (lab):

Thomas Homer-Dixon, 2010, *Introduction* in Homer-Dixon T. (ed.), Carbon Shift: How Peak Oil and the Climate Crisis will change Canada (Vintage Canada) (See Course Manual)

Video: Al Gore: [New thinking on the climate crisis](#)

Theme 5: Thinking of the Future

Dec 6-
Week 14

TEST III

Lab: Thinking of the Future; reflecting on worldviews

Video: The man who planted trees

5. Basis of Student Assessment (Weighting)

Exams (35% of course mark)

There are three in-class tests, together worth 35% of course marks. Their format will be discussed in class.

Labs (35% 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 can be hand-written, but your handwriting must be neat. Untidy and illegible writing will not be marked.

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 (20% 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 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**. One source must be the required

reading(s) identified in the course outline, associated with issue. 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 paper is due in the first class of the week of Nov 29.

Evaluation summary:

Tests	- 35%
Lab work	- 35%
Discussion questions	- 10%
Research paper	- 20%

6. Grading System

(No changes are to be made to this section unless the Approved Course Description has been forwarded through the Education Council of Camosun College for approval.)

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 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 3rd 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.

7. 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.

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.

ADDITIONAL COMMENTS AS APPROPRIATE OR AS REQUIRED