



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: | Tues 10.30-11.30am, 1.30-2.30pm; Thurs 1.30-2.30pm; Fri 10.30-11.30am | | |
| (c) | Location: | E238 | | |
| (d) | Phone: | 370-3115 | Alternative Phone: | |
| (e) | Email: | elkint@camosun.bc.ca | | |
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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

Text: Raven, Berg and Hassenzahl, 2010, Environment (7th edition), Toronto: Harcourt

Course Manual

4. Course Content and Schedule

(This section can include: class hours, lab hours, out of class requirements and/or dates for quizzes, exams, lectures, labs, seminars, practicums, etc.)

Week starting

Theme 1: Humans in the Environment

Jan 10- Introduction to the course: course outline

Week1 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?

Jan 17- Introducing environmental science and sustainability

Week 2 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: 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)

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

How rapidly should society allow the introduction of new scientific innovation?

What are the risks associated with major projects such as oil development. We will examine the oil sands project in Alberta.

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.*

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

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.

Required reading:

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

Video: H2Oil

Jan 24- Addressing environmental problems: Policy, economics and worldviews
Week 3 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

Jan 31- Ecosystems and Energy
Week 4 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.

Feb 7-
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?

Feb 14- Ecosystems of the World
Week 6 Text: Chap 6

Class discussion: Protecting BC's temperate rainforest ecosystem
Should development of BC's old growth temperate rainforest be stopped immediately?

Lab: Mapping ecosystems (GP computer lab)

Feb 21- **TEST I**
Week 7

READING BREAK

Theme 3: Human Population and the Environment

Feb 28- Human population dynamics
Week 8 Text: Chap 8, 9

Class discussion: The new population bomb in the West
Should Canada increase its population growth rate?
Should Canada plan to increase its population growth rate to address its aging society, and if so, should it 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 those wealthier, urbanized nations (*especially in Europe and Japan, but also Canada*) face *dwindling and aging populations while poorer, rural ones (mainly in Asia and Africa) spawn the opposite situation*. The result may mean that these 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 numbers 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".

Required reading:

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

Class discussion: Overpopulation

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

Lab: Population dynamics

Videos: Hans Rosling, [No more boring data](#); The population bomb

Theme 4: Resource and Environmental Management

March 7-Water

Week 9 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)

March 14-
Week 10

TEST II

Focus on research paper

March 21-
Week 11

The atmosphere and atmospheric change

Text: Chap 21

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 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](#)

March 28-
Week 12

Wildlife and biodiversity
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: 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

April 4-
Week 13

Food
Text: Chap 19

Research paper due first class of the week

Video: *Michael Pollan*

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

Theme 5: Thinking of the Future

April 11- **TEST III**
Week 14

Lab: Thinking of the Future; reflecting on worldviews

Video: The man who planted trees

5. Basis of Student Assessment (Weighting)

(This section should be directly linked to the Intended Learning Outcomes.)

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|----------------------|-------|
| 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