
POLLUTION ECOLOGY: ERSC 3550Y

COURSE OUTLINE: 2010/11 FW

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LECTURES: Tuesdays 14:00 – 15:50 OCA 208

SEMINARS: One hour seminar every two weeks starting September 23/24. Seminars consist of 12 students or less. There are 10 seminars during the academic year.

Group A:	TH 12:00-12:50	BL 107.1
Group B:	TH 13:00-13:50	BL 107.1
Group C:	F 13:00-13:50	SC W2
Group D:	F 14:00-14:50	SC W2

READINGS: No text is recommended. Readings will be provided throughout the course.

COURSE DESCRIPTION:

The course covers a wide range of environmental problems, focusing on those of current concern but also looking at historical challenges that have occurred. It examines the scientific aspects of the problem, as well as community, governmental and corporate responses. Particular emphasis is on the response of biota and ecosystems to anthropogenic pollution, as well as the recovery and rehabilitation of the ecosystem. The lessons that can be drawn from the application of ecological principles to ecosystem responses are discussed. Lecture topics include pollutant case histories (metals, organics, nutrients, asbestos, electromagnetic radiation), the use of pollutant as bioindicators or early warning indicators, the transport, transformation, and fate of pollutants, food chain effects, as well as the effects of mining and smelting activities, transportation, and energy. Examples are drawn from human health and from both terrestrial and aquatic systems for a range of taxa and from a wide geographic area. Matters of current public concern are introduced. While the emphasis is on ecology, the social, economic and political aspects are also included. A basic understanding ecology, biology and chemistry is helpful. In the seminars, students discuss divergent views on controversial environmental issues and assess the factors that come into play during decision-making. While the course covers a wide range of topics, students are offered the opportunity, through reading lists, discussions and projects to pursue topics of particular interest in greater depth.

COURSE FEES: none.

EVALUATION: Penalty for Late Assignments: 5% per day without appropriate documentation (i.e. doctor's note).

ASSIGNMENT	GRADE	DUE
• Seminar Attendance: & Participation	10%	December 3 & April 1
• Seminar Assignments: 2 assignments worth 5% each	10%	fall & winter
• Term Paper:	20%	November 5
• Group Project:3-member group	30%	March 15
• Final Exam:	30%	Final Exam Week

Seminar Assignments (10%): one in winter term and one in spring term worth 5% each.

Two or three students per seminar are expected to lead a discussion on the topic selected. They are each to provide one authoritative paper for discussion to the group (via myLearningSystem - webct) at least three days prior to the seminar (by Monday of seminar week). Students leading the discussion should meet prior to the seminar and coordinate their presentation.

Term Paper (20%): due November 5, 2010

Format and Length: Clearly state your “thesis” and then defend it. Essays should be fully referenced and between 4000 and 5000 words long. Shorter or longer papers will NOT be accepted. Figures and tables are encouraged where appropriate. Recommend you use Times New Roman-12 font, single-spaced, and on either single or doubled-sided paper.

References: References are to be mentioned by author and year in the text, and given in full at the end of the paper. Include ONLY references that you cite in the body of your paper. Journal articles, government publications, newspaper articles are all accepted and encouraged for this essay. Web based articles may be useful but do NOT limit yourself to this form of research entirely or you will be penalized. **Select authoritative references.**

Topics: A list of topics will be provided separately.

Group Project (30%): due March 15, 2011.

Each group is to consist of 3 members. Select an important environmental issue that has not yet been resolved dealing with environmental or human health. You may select a topic discussed in class (asbestos, wireless radiation, specific type of air pollution, etc.) or a novel topic (sick building syndrome, toxic household waste, etc.). The topic may be of global (climate change), regional (windmill vibrations, transportation & air pollution) or of local (Sydney Tar Sands, Love Canal, something site-specific etc.) importance.

Clearly define the problem, how it revealed itself, and what its impact is. Identify the stakeholders, the players, the winners and losers. Discuss the governmental, corporate and citizen group response to this problem. Provide detailed recommendations as to how to resolve this issue once-and-for-all. Select an agency that has the mandate to do something about the issue and determine how and what you would communicate with that agency to bring about change.

Be specific, provide data to support your opinions (statistics, tables, figures). Identify the person to whom a letter should be sent within the agency of your choice. Do everything except send them your document. The document should be less than 8,000 words with an executive summary consisting of no more than 800 words. Place supporting documentation in the Appendix.

Note: 20% of the mark will be based on the group submission and 10% will be an individual mark as determined by group members.

MYLEARNING: Grades and assignments will be listed on myLearning. Students can use this resource for group discussions.

WEEK-BY-WEEK SCHEDULE:

Wk	Date	LECTURE/Seminar Topics	Lecturer
1	Sept 14	Course Introduction & History of Air Pollution	MH/TH
2	Sept 21	London Smog & LA Smog (photochemical smog)	TH
3	Sept 28	Acid Rain effects on Aquatic Ecosystems	Readings 1 & 2 (10%)
4	Oct 5	Acid Rain effects on Terrestrial Ecosystems	TH
5	Oct 12	Air Pollution in the Kawartha's	TH
6	Oct 19	Case Study: Smoking Hills, NWT	MH
<i>Reading Week</i>			
7	Nov 2	Case Study: Sudbury	TH
8	Nov 9	Case Study: Port Colborne & Risk Assessment	TH
9	Nov 16	Health Effects of Low Frequency Electromagnetic Fields	MH
10	Nov 23	Our Love Affair with Wireless Technology	MH
11	Nov 31	Dirty Electricity and our Health	MH
12	Dec 7	Dancing Cows and Ground Current/Bees losing their Buzz	MH/TH
<i>2011 Christmas Break</i>			
13	Jan 11	Long Distance Transport of Halogenated Organics, Case Study: DDT	TH
14	Jan 18	Oil Spills: Marine & Terrestrial Ecosystems	TH
15	Jan 25	Diapers and Landfill	Guest
16	Feb 1	Estrogen Mimics and Reproduction	MH
17	Feb 8	Mercury	MH/TH
18	Feb 15	Lead	TH
<i>Reading Week</i>			
19	Mar 1	Asbestos	MH
20	Mar 8	Eutrophication	MH
21	Mar 15	TBA	Guest
22	Mar 22	Student Presentations	Students
23	Mar 29	Student Presentations	Students
24	Apr 5	Student Presentations & Course Wrap-Up	Students & MH/TH

#	SEMINARS (possible topics: note these may change)	Groups A&B	Groups C&D
1	Kyoto Protocol	Sept 23	Sept 24
2	Montreal Protocol	Oct 7	Oct 8
3	Tobacco & Radiation	Oct 21	Oct 22
4	Role of Health Canada	Nov 11	Nov 12
5	Municipal Ban of Cosmetic Pesticides/lawns etc.	Nov 25	Nov 26
6	Exxon Valdex, BP Gulf Spill	Jan 20	Jan 21
7	Fertility Clinics, Historical Trends	Feb 3	Feb 4
8	Environmental & Human Health Risk Assessment	Feb 17	Feb 18
9	Auditor General and the Environmental Petition	Mar 10	Mar 11
10	Provincial Environmental Ombudsman	Mar 24	Mar 25

UNIVERSITY POLICIES

ACADEMIC DISHONESTY:

Academic dishonesty, which includes plagiarism and cheating, is an extremely serious academic offense and carries penalties varying from failure in an assignment to suspension from the University. Definitions, penalties, and procedures for dealing with plagiarism and cheating are set out in Trent University's Academic Dishonesty Policy which is printed in the University Calendar and on the university web site at: http://www.trentu.ca/deansoffice/policies_dishonesty.php.

ACADEMIC INTEGRITY:

Academic dishonesty, which includes plagiarism and cheating, is an extremely serious academic offence and carries penalties varying from a 0 grade on an assignment to expulsion from the University. Definitions, penalties, and procedures for dealing with plagiarism and cheating are set out in Trent University's Academic Integrity Policy. You have a responsibility to educate yourself – unfamiliarity with the policy is not an excuse. You are strongly encouraged to visit Trent's Academic Integrity website to learn more – www.trentu.ca/academicintegrity.

ACCESS TO INSTRUCTION:

Please see the **Trent University academic calendar** for University Diary dates, Academic Information and Regulations, and University and departmental degree requirements.