

" Environmental Pollution" (EES A11)

Instructor: Dr. Jovan R. Stefanovic

Office: EV 402

Lecture: Thursday 5 – 7pm (SY110)

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Teaching Assistant: Rhea Lumactud (r.lumactud@mail.utoronto.ca)

Office and office hours: TBA on Blackboard

Textbook: Hill, Marquita K. (2010). Understanding Environmental Pollution (3rd Ed.). New York: Cambridge University Press.

Specific readings will also be given out for some lectures.

Grading:	Final Examination	45 %
	Mid-Term Test	35 %
	One (1) Written Assignment	20 %

The intent of the course:

This course provides students an introduction to issues related to environmental pollution, with emphasis on causes, pathways, risks, mitigation and prevention. By the end of this course, students will have a good understanding of the dynamic nature of human-environment relationships, and the multidimensional characteristics of environmental pollution, through the use of Canadian and international examples. Special emphasis will be placed on issues related to eutrophication phenomena, exotic species invasions, water quality/fisheries management, energy, mining and waste management.

COURSE LEARNING OBJECTIVES:

- Identify a range of human uses of fresh water and their impacts on freshwater environments
- Describe the impacts of human activities on the atmosphere

- Outline Canadian and international responses to protect the atmosphere
- Understand the various categories of waste
- Appreciate the approaches to management of different types of waste
- Discuss energy resources and their environmental impacts
- Outline Canadian and international responses to energy issues

Tentative Course Schedule

Students should note that topics may span more than one lecture period

Week	LECTURE TOPICS	
1.	An overview of the course, expectations, and objectives.	
	Understanding Pollution	Jan.5 th
	Humans are massively changing the Earth	
	Why does pollution happen?	
	Global pollution and global environmental health	
	Root causes	
	Our actions have consequences	
2.	Air Pollution (Part I)	Jan. 12 th
	Criteria air pollutants	
	Air Quality Management System	
	Hazardous air pollutants	
3.	Air Pollution (Part II)	Jan.19 th
	Pollution from space	
	Air pollution in less-developed countries	
4.	Global Climate Change (Part I)	Jan.26 th
	A warming Earth	
	Significant Elements of Our Changing Climate	
	Greenhouse gases and their sources	
5.	Global Climate Change (Part II)	Feb.2 nd
	Assessing global climate change	
	Industry and government action to reduce emissions	
6.	Stratospheric – Ozone Depletion	Feb. 9 th
	The stratosphere and ozone	
	Antarctica	
	Consequences of ozone depletion	
	Ozone-depleting pollutants	
	Reducing atmospheric levels of ozone-depleting substances	
	The Future	
7.	Midterm Examination (during class time).....	Feb.16 th

8. **Reading Week – University closed**..... Feb.23rd
9. **Water Pollution**.....Mar.2nd
 Conventional and Priority Pollutants
 Impacts of Pollution on Water Bodies
 The “Nitrogen Glut”
 Basic Concepts of Eutrophication
10. **Water and Wastewater Treatment**Mar.9th
 Drinking water standards
 Drinking Water Treatment Process
 Reducing Point and Non-Point Sources (Treating Wastewater)
 DVD: “Last Call at the Oasis” or “Senegal: Water Treatment and Distribution”
11. **Solid and Hazardous Waste**Mar. 16th
 Waste is a sign of inefficiency
 Canada’s Waste Stream
 Waste – Management Hierarchy
 The Fate of Disposed Municipal Solid Waste
 Managing Hazardous Waste
12. **Energy and Mining**.....Mar. 23st
 Energy Resources and Environmental Impacts
 Emerging Energy Resources and Technologies
 Environmental Impacts of Mining
13. **The Way Forward in Environmental Pollution Control;
 Course Review**.....Mar. 30th

MID-TERM EXAMINATION

The midterm is based on material covered in lectures and readings up to and including the class before the midterm exam. The 2-hour mid-term examination will be held on February 16 (5 to 7pm) in class. The exam will be multiple-choice, true-false and short answers questions (DVDs if used in lecture) and will be worth 35% of the final grade.

MISSED TEST

Make-ups will not be given for the mid-term test. If you miss the test with a verifiable reason (i.e. you have a Doctor’s note or have made provisions for a VERY good reason with the professor PRIOR to the mid-term), the weight of the mid-term will be added to the weight of your final exam. If you simply “miss” the mid-term, you will receive a mark of zero for it. If the reason is medical, an official UTSC medical note must complete by a doctor who examined you while you were ill/injured. The medical note can be downloaded at http://www.utoronto.ca/~registrar/resources/pdf_general/UTSCmedicalcertificate.pdf. You must submit appropriate documentation within five business days of your absence.

FINAL EXAMINATION

The 2-hour final examination will be held during the final examination period, exact time, date and rooms TBA. The exam is worth 45% of the final grade. It will be a combination of multiple choice, true-false and short answer questions. The final exam will be based on selected term material (including readings, lectures and DVDs).

MISSED TERM WORK: If a legitimate reason prevents you from submitting a piece of term work by its posted deadline, you must submit appropriate documentation within five business days of your absence. If the reason is medical, an official UTSC medical note must complete by a doctor who examined you while you were ill/injured (i.e. not after the fact). The medical note can be downloaded at

http://www.utsc.utoronto.ca/~registrar/resources/pdf_general/UTSCmedicalcertificate.pdf.

Note that conditions ranked as mild or negligible will not be considered a valid excuse.

PLAGIARISM: Assignment is checked for plagiarism. Please consult the University Calendar for a discussion and outline of the policy on plagiarism and academic integrity (also see proceeding section below). The sanctions can be severe. If, after reviewing the University policy, you are uncertain about what constitutes plagiarism, talk to your course instructor.

ACADEMIC INTEGRITY: Academic integrity is essential to the pursuit of learning and scholarship in a university, and to ensuring that a degree from the University of Toronto is a strong signal of each student's individual academic achievement. As a result, the University treats cases of cheating and plagiarism very seriously.

The University of Toronto's Code of Behaviour on Academic Matters

(<http://www.governingcouncil.utoronto.ca/policies/behaveac.htm>) outlines the behaviors that constitute academic dishonesty and the processes for addressing academic offenses.

All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters. If you have questions or concerns about what constitutes appropriate academic behavior or appropriate research and citation methods, you are expected to seek out additional information on academic integrity from your instructor or from

ACCESSIBILITY STATEMENT

Students with diverse learning styles and needs are welcome in this course. In particular, if you have a disability/health consideration that may require accommodations, please feel free to approach me and/or the AccessAbility Services Office as soon as possible. I will work with you and AccessAbility Services to ensure you can achieve your learning goals in this course. Inquiries are confidential. The UTSC AccessAbility Services staff (located in S302) are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations. (416) 287-7560 or ability@utsc.utoronto.ca.

STUDENT CODE OF CONDUCT

Please arrive promptly for lecture and do not forget to turn off cell phones. You are fully expected to abide by the Code of Student Conduct as set out by The Governing Council at the University of Toronto

(<http://www.utoronto.ca/govcncl/pap/policies/studentc.html>). This document defines the standards by which students are to conduct themselves within class and within the University community at large. Please be advised that misconduct of any form will not be tolerated in this class. This includes plagiarism on quizzes, assignment, and exams, which will be strictly enforced and is easily detected. Please consult the University Calendar for information about grade distribution and academic conduct. All suspected cases of academic dishonesty will be investigated following procedures outlined in the Code of Behaviour on Academic Matters. If you have questions or concerns about what constitutes appropriate academic behavior or appropriate research and citation methods, you are expected to seek out additional information on academic integrity from your instructor or from other institutional resources (see <http://www.utoronto.ca/academicintegrity/>). If you have further questions regarding what constitutes plagiarism or other academic offenses, feel free to speak with Prof. Stefanovic.

Note:

Check Blackboard regularly. All announcements, lecture notes, and midterm marks and other information will be posted on the Blackboard.

Other useful books for this course:

“Understanding Global Warming Dire Predictions” Mann, E.M. & L.R. Kump (2008), Pearson Education Canada

“Environmental degradation and the tyranny of small decisions” :Odum, W.E., 1982, BioScience 32, 728-729.

"The human impact on the natural environment": Andrew Goudie, Blackwells, 388 pp.

"Planet under stress": Constance Mungall and Digby McLaren (eds.) For the Royal Society of Canada, Oxford University Press, 344 pp.

"Environmental Science": William Cunningham and Barbara Saigo, Wm. C. Brown Publishers, 622 pp.

"Geosystems": Robert Christopherson, Macmillan, 616 pp.

"Global Environmental issues": Kevin Pickering and Lewis Owen, Routledge, 389 pp.

"Environment": Peter Raven, Linda Berg and George Johnson, Saunders College Publishing, 567 pp.

"Environmental Science", Sixth Edition, Enger, E.D., and B.F. Smith, McGraw-Hill