

" Environmental Pollution" (EES A11)

Instructor: Dr. Jovan R. Stefanovic

Office: EV 340

Lecture: Thursday 5 – 7pm (AA 112)

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Office hour: Thursdays 4- 5pm (from Jan.16)

Teaching Assistants for the assignment: Yuchao Wan (yuchao.wan@mail.utoronto.ca) and Wai Ying Lam (wy.lam@mail.utoronto.ca)

Teaching Assistant for quizzes: Andrew Apostoli (andrew.apostoli@mail.utoronto.ca)

TAs office and office hours: TBA on Quercus.

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	40 %
	Mid-Term Test (Feb.27)	30 %
	One (1) Assignment	22 %
	Quizzes (2x4.0%)	8%

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.9th
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. 16th
Criteria air pollutants
Air Quality Management System
Hazardous air pollutants
- 3. Air Pollution (Part II)**Jan.23rd
Pollution from space
Air pollution in less-developed countries
- 4. Global Climate Change (Part I)**.....Jan. 30th
A warming Earth
Significant Elements of Our Changing Climate
Greenhouse gases and their sources
- 5. Global Climate Change (Part II)**.....Feb.6th
Assessing global climate change
Industry and government actions to reduce emissions
- 6. Stratospheric – Ozone Depletion**.....Feb. 13th
The stratosphere and ozone
Antarctica
Consequences of ozone depletion
Ozone-depleting pollutants
Reducing atmospheric levels of ozone-depleting substances

QUIZ #1

- Reading Week – University closed..... Feb.20th**
7. **Midterm Examination (in- class)..... Feb. 27th**
8. **Water Pollution.....Mar.5th**
Conventional and Priority Pollutants
Impacts of Pollution on Water Bodies
The “Nitrogen Glut”
Basic Concepts of Eutrophication
9. **Water and Wastewater TreatmentMar.12th**
Drinking water standards
Drinking Water Treatment Process
Reducing Point and Non-Point Sources (Treating Wastewater)
10. **Solid and Hazardous WasteMar. 19th**
Waste is a sign of inefficiency
Canada’s Waste Stream
Waste – Management Hierarchy
The Fate of Disposed Municipal Solid Waste
Managing Hazardous Waste
11. **Energy and Mining.....Mar. 26th**
Energy Resources and Environmental Impacts
Emerging Energy Resources and Technologies
Environmental Impacts of Mining
QUIZ #2
12. **The Way Forward in Environmental Pollution Control;
Course Review.....Apr.2th**

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 mid-term examination will be held on Feb.27 (5 to 6:30pm) in class. The exam will be multiple-choice, true-false and short answers questions (written part) and will be worth 30% of the final grade.

MISSED 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), please submit the proof for 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. The medical note can be downloaded at

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

You must submit appropriate documentation (hard copy) within 5 business days of your absence (March 5th).

If you simply “miss” the mid-term, you will receive a mark of zero for it.

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 40% of the final grade. It will be a combination of multiple choice and true-false questions. The final exam will be based on selected term material (including textbook readings and lectures).

ASSIGNMENT AND QUIZZES

One assignment will be introduced at the beginning of February or earlier. Detailed information about the assignment you will get from your TAs (**Yuchao and Wai**).

Quizzes on-line (30 – 40 minutes duration) will consist of MC and True/False questions and will cover lecture material from previous weeks. **Tentative dates for quizzes** are given in the course schedule. More information about quizzes you will get from your TA (**Andrew Apostoli**).

MISSED TERM WORK: If a legitimate reason prevents you from submitting a piece of term work (written assignment) 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.utoronto.ca/~registrar/resources/pdf_general/UTSCmedicalcertificate.pdf.

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

You must submit appropriate documentation to the teaching assistant (TA) within 5 business days of the assignment due date.

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 AA142 (Arts & Admin Building) 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 Quercus regularly.** All announcements, lecture notes, and midterm marks and other information will be posted on Quercus.

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.

Chemistry, 4th Edition by Julia Burdge, 2017, McGraw Hill.