" Environmental Pollution"
(EES A11)

Instructor: Dr. Jovan R. Stefanovic
Office: EV 402
Lecture: Thursday 5 – 7pm (SY110)
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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*

<table>
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<tr>
<th>Week</th>
<th>LECTURE TOPICS</th>
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| 1.   | **An overview of the course, expectations, and objectives.**  
      **Understanding Pollution** .................................................. Jan. 5<sup>th</sup>  
      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<sup>th</sup>  
      Criteria air pollutants  
      Air Quality Management System  
      Hazardous air pollutants |
| 3.   | **Air Pollution (Part II)** .................................................. Jan. 19<sup>th</sup>  
      Pollution from space  
      Air pollution in less-developed countries |
| 4.   | **Global Climate Change (Part I)** ...................................... Jan. 26<sup>th</sup>  
      A warming Earth  
      Significant Elements of Our Changing Climate  
      Greenhouse gases and their sources |
| 5.   | **Global Climate Change (Part II)** .................................... Feb. 2<sup>nd</sup>  
      Assessing global climate change  
      Industry and government action to reduce emissions |
| 6.   | **Stratospheric – Ozone Depletion** .................................. Feb. 9<sup>th</sup>  
      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<sup>th</sup> |
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.utsc.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.

**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


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