

## " Environmental Pollution" (EES A11)

**Instructor:** Dr. Jovan R. Stefanovic

**Lecture:** Thursday 5 – 7pm (via Blackboard Collaborate)

**Email:** jovan.stefanovic@utoronto.ca

Office hour: Thursdays 1- 2 pm (from Jan.21)

**Teaching Assistant (TA) for quizzes:**

QUIZ #1: Andrew Apostoli (andrew.apostoli@mail.utoronto.ca)

QUIZ #2: Ariola Visha (a.visha@utoronto.ca)

QUIZ #3: Serra-Willow Buchanan(serrawillow.buchanan@mail.utoronto.ca)

TAs office hours: TBA on Quercus.

**Textbook:** Hill, Marquita K. (2020). Understanding Environmental Pollution (4rd Ed.). New York: Cambridge University Press.

Specific readings will also be given out for some lectures.

<b>Grading:</b>	Final Examination	52 %
	Quizzes (3x 16.0%)	48%

**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 #	LECTURE TOPICS
1.	<b>An overview of the course, expectations, and objectives.</b>
	<b>Understanding Pollution</b> ..... Jan.14 <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.	<b>Air Pollution (Part I)</b> .....Jan. 21 <sup>st</sup> Criteria air pollutants Air Quality Management System Hazardous air pollutants
3.	<b>Air Pollution (Part II)</b> .....Jan.28 <sup>th</sup> Pollution from space Air pollution in less-developed countries
4.	<b>Global Climate Change (Part I)</b> .....Feb.4 <sup>th</sup> A warming Earth Significant Elements of Our Changing Climate Greenhouse gases and their sources <b>QUIZ #1(Lectures 1,2,3)</b>
5.	<b>Global Climate Change (Part II)</b> .....Feb.11 <sup>th</sup> Assessing global climate change Industry and government action to reduce emissions
	<b>Reading Week – University closed</b> ..... <b>Feb.18<sup>th</sup></b>
6.	<b>Stratospheric – Ozone Depletion</b> .....Feb. 25 <sup>th</sup> The stratosphere and ozone Antarctica Consequences of ozone depletion Ozone-depleting pollutants Reducing atmospheric levels of ozone-depleting substances
7.	<b>Water Pollution</b> .....Mar.4 <sup>th</sup> Conventional and Priority Pollutants Impacts of Pollution on Water Bodies The “Nitrogen Glut” Basic Concepts of Eutrophication <b>QUIZ #2 (Lectures 4,5,6)</b>

8. **Water and Wastewater Treatment** .....Mar.11<sup>th</sup>  
 Drinking water standards  
 Drinking Water Treatment Process  
 Reducing Point and Non-Point Sources (Treating Wastewater)
9. **Solid and Hazardous Waste (Part I)**.....Mar. 18<sup>th</sup>  
 Waste is a sign of inefficiency  
 Canada's Waste Stream  
 Waste – Management Hierarchy
10. **Solid and Hazardous Waste (Part II)**.....Mar. 25<sup>th</sup>  
 The Fate of Disposed Municipal Solid Waste  
 Managing Hazardous Waste  
QUIZ #3 (Lectures7,8,9)
11. **Energy and Mining**..... Apr. 1<sup>st</sup>  
 Energy Resources and Environmental Impacts  
 Emerging Energy Resources and Technologies  
 Environmental Impacts of Mining
12. **The Way Forward in Environmental Pollution Control;  
 Course Review**..... Apr. 8<sup>th</sup>

*I will follow this schedule as closely as possible, but things being what they are, some of these topics may "overflow" over into other time slots and slight alterations to the schedule may occur.*

The lecture material will be presented online via Bb Collaborate (Quercus). The lecture will be synchronized, delivered in real time or pre-recorded and played during the lecture time. In both cases lectures will be interrupted with Question/Answer sessions.

### ***QUIZZES***

There are no tutorials in this course. Teaching Assistant will hold discussion board and/or office hours to help with the quizzes. Students are encouraged to actively consult with the TA regarding any problems or questions about the preparation of the quizzes. Each TA is responsible for only one quiz (see below), so please consult only with TA who is responsible for the given quiz. You will have 3 quizzes during the term, each quiz is worth 16% of the final grade. Each quiz is scheduled at the specific day (see lecture schedule or see below) and they will always start at 5:00 pm on Quercus.

**During the quizzes the Honour Pledge form will be introduced.**

After the quiz is completed, I will continue with the lecture material (around 6 pm).

#### **Format of the quizzes is:**

MCQ, T/F questions, Matching questions, Fill in the blanks, Multiple dropdowns (Multiple answers). Most of the questions will come from the lectures slides, but since most of the lectures follow the textbook you can expect some questions from the textbook.

**Important: We will not be able to show quiz questions and correct/incorrect answers after the quiz.**

<b><i>QUIZ</i></b>	<b>On Quercus</b>	<b>TA</b>
Mock quiz	Jan. 28	Andrew Apostoli
Quiz #1	Feb. 4	Andrew Apostoli
Quiz #2	March 4	Ariola Visha
Quiz #3	March 25	Serra-Willow Buchanan

The mock quiz is not for mark. We would recommend that everyone does it, as this will allow you to pinpoint and resolve any technical difficulties (internet connections, computer performance etc.) that might arise. By writing the mock exam, you will become familiar with the online settings and this will also help us see if there are any problems ahead of time.

**More details on the quizzes will be circulated during the term.**

### ***MISSED QUIZZES***

If you miss the quiz for a verifiable reason (i.e. you have a medical note or have made provisions for a VERY good reason with the TA **PRIOR** to the quiz) please submit **documentation to appropriate TA within 4 business days after the quiz, the last day is Wednesday at 5 pm (in the week after the quiz)**. After that the makeup quiz will be set up

by TA (a week after original quiz date , Thursday at 5pm). If you miss the makeup quiz with a verifiable reason after you submit the proof for your absence (NEW medical note with a different date), the weight of the quiz will be transferred to the final exam (in this case your final will worth 68% of the final grade).

If you simply “miss” the quizzes, you will receive a mark of zero for them. 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](http://www.utsc.utoronto.ca/~registrar/resources/pdf_general/UTSCmedicalcertificate.pdf).

**All collected documents should be submitted to TA for consideration.**

### ***FINAL EXAMINATION***

The final examination will be held during the final examination period, exact time and date TBA. **The final exam will cover lectures 2-11.** The exam is worth 52% of the final grade. Format and setup of the final exam will be similar to the quizzes. More details will be announced during the term.

### ***RECOMMENDED TECHNOLOGY REQUIREMENTS***

Quercus is optimized for Google chrome or Mozilla Firefox. The system does not support the following browsers: Internet Explorer, Microsoft Edge, Safari. There are known issues with those browsers.

Please see the link below for information regarding Recommended Technology Requirements for Remote/Online Learning at U of T.

[https://www.vicereprovoststudents.utoronto.ca/covid-19/tech-requirements-online-learning/Links to an external site.](https://www.vicereprovoststudents.utoronto.ca/covid-19/tech-requirements-online-learning/Links%20to%20an%20external%20site)

Not all of these will be needed for EESA11 (more info will follow) but it might be useful for your other courses.

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### ***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.

Enquiries are confidential. The UTSC Access*Ability* Services staff are available by appointment to assess specific needs, provide referrals and arrange appropriate accommodations. (416) 287-7560 or [ability@utsc.utoronto.ca](mailto:ability@utsc.utoronto.ca).

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.