

**"HUMAN HEALTH AND THE ENVIRONMENT"
(EESA10 H3 S)**

Instructor: Dr. Silvija Stefanovic

Office: PO 104 room #109

Lecture: Wednesday 7–9 pm, AC-223

Email: silvija.stefanovic@utoronto.ca

Phone: 416-287-7224

Office hours: Wednesday 6-7 pm

TAs: Myriam Mohamadi
Peter Quincy Ng
Abha Parajulee
Amandeep Saini

Office: SW511A

Office hours: TBA (on the Intranet soon)

Textbook: Life support: The environment and human health. Michael McCally, MIT press, Cambridge 2002 (available from the bookstore and on short term loan in the library).

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|-----------------|-----------------------|-----|
| Grading: | Assignments (2): | 20% |
| | Mid-term Examination: | 40% |
| | Final Examination: | 40% |

Intent of the course:

Because of pollution, our surroundings are becoming increasingly hazardous to our health. The past century has seen intense industrialization characterized by the widespread production and use of chemicals and the intentional and unintentional disposal of a wide range of waste materials. This course explores the relationship between the incidence of disease in human populations and the environmental pollution. Emphasis will be placed on understanding where and what pollutants are produced, how they are taken up by humans and their long term effects on health; the role of naturally-occurring carcinogens will also be examined. The course will include a view of risk assessment and toxicology using case studies. No prior knowledge of environmental or medical science is required.

LECTURE TOPICS

1. Introduction, ground rules, expectations and course structure.

Understanding the Health Effects of Environmental Hazards

Video: “Everyday carcinogens: Acting for Prevention in the Face of Scientific Uncertainty” Featured by Dr. Sandra Steingraber

Jan 9th

2. Airborne Hazards and Human Health

Jan 16th

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| 3. Waterborne Hazards and Human Health | Jan 23 th |
| 4. Assignment #1 discussion; Chemical Hazards and Human Health Video: "The Disappearing Male" | Jan 30 th |
| 5. Heavy Metals and Human Health. Case study: CCA (Chromated Copper Arsenate) wood preservative | Feb 6 th |
| 6. Radiation and Electromagnetic Hazards and Human Health | Feb 13 th |
| 7. READING WEEK | Feb 20 rd |
| 8. Biological Hazards and Human Health Video: "Just The Flu" | Feb 27 th |
| 9. Foodborne Hazards and Human Health Video: "Diet and Disease in Modern Society" | Mar 6 th |
| 10. Assignment #2 discussion; Toxicology, the Science of Risk Assessment, Precautionary Principle | Mar 13 th |
| 11. Environmental Hazards to Specific Populations: Children, Women, Occupational Hazards; Growing Population, Overconsumption, War and Human Health | Mar 20 rd |
| 12. Climate change, Ozone depletion, Species Loss and Ecosystem Disruption and Human Health. | Mar 27 th |
| 13. Final Exam Preparation | April 3 th |

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.

ASSOCIATED READINGS IN TEXTBOOK

- Week 1 - Lec 1- Chapter 1(pp 1-6, pp 10-12)
- Week 2 - Lec 2- Chapter 2
- Week 3 - Lec 3- Chapter 3
- Week 4 - Lec 4- Chapters 9, 10
- Week 5 - Lec 5- Chapter 4
- Week 6 - Lec 6- Chapter 12
- Week 7- READING WEEK
- Week 8 -- Lec 7- lecture notes only
- Week 9 - Lec 8-lecture notes only
- Week 10 - Lec 9- Chapters 13, 14
- Week 11- Lec 10- Chapters 5, 15, 16
- Week 12 - Lec 11- Chapters 6, 7, 8

Suggested studying strategy: I would suggest you to read the given chapters before the class but just briefly, do not spend too much time reading it. Then come to class and take notes during the lecture since everything I say, not just what is written on the slides, is on the exams. Then read the chapter again but now more carefully since you know now on what parts to focus on, based on my lecture. This strategy is time consuming but it is surely successful. It is important to read the textbook. More emphasizes will be put on the lecture notes but some of the questions on the exams will still be from the text.

LECTURE NOTES

The lecture slides will be posted in *.pdf format on the Intranet. You will require Adobe Reader to open the files (available free of charge at www.adobe.com).

ASSIGNMENTS

There are no tutorials in this course. TAs will hold office hours to help with assignments. See the Intranet to find out who is your TA. I would suggest you to attend your TA's office hours (*always the same TA*) regularly since she/he will mark your assignments. If you have conflict you can see another TA but you have to submit the assignment to your, designated, TA. Students are encouraged to actively consult with the TA regarding any problems or questions about the preparation of the assignment.

You will have two assignments during the term, worth 20% of the final grade (10% each). **You will be able to access the problem sheets on the Intranet at the times detailed below.** The marking rubric will be also posted on the Intranet. Completed exercises must be placed in the box of the appropriate TA, outside SW-511A, by 5 pm on the dates shown. TAs will mark the assignments. More details on the assignments will be circulated during the term.

| | On the Intranet | Submission Due |
|--|------------------------|-----------------------------------|
| Assignment #1 (Related to Lecture 1-5) | Jan. 28th | Feb. 11 th , 5pm sharp |
| Assignment #2 (Related to Lecture 6-11) | Mar. 13 th | Mar. 25 th , 5pm sharp |

You should use a word processor for your written responses. The document must bear a name, student number, date and TAs name. Calculations if any may be handwritten.

PLEASE NOTE:

1) Plagiarism will not be tolerated. Students are expected to submit **individual work** for grading. It is an academic offense to plagiarize and those who do, will be subjected to University procedures (see the calendar). Feel free to discuss the assignments with your classmates, but be sure to write the assignments using your own individual words and ideas.

2) Late assignments will not be accepted and assigned a grade of zero.

Extensions will be granted ONLY with medical note or under exceptional circumstances. Your TA must be informed about that immediately or within maximum 10 days after the assignment due date.

EXAMS

Both the midterm and final exam will be drawn from the lectures including lecture notes and *any* material presented in the classroom (**Questions about the videos will be on the exams**). Information from the textbook not directly covered in class will not be tested on the exams. Only the numbers, dates and names that will be presented in class are on the exams.

MID-TERM EXAMINATION

The 1-hour mid-term examination will be held during the mid-term period, exact time, date and rooms TBA. The exam will consist of multiple-choice and true-false questions and will be worth 40% of the final grade. The lectures 1-6 will be on the midterm.

FINAL EXAMINATION

The 1-hour final examination will be held during the final examination period. The exam is worth 40% of the final grade for the course. It will be a combination of multiple choice, and true-false questions. The lectures 7-11 will be on the final.

FURTHER READINGS

- Blumenthal, D. S., and Ruttenger, A. J. (1995). *Introduction to environmental health*. Second Edition. New York: Springer.
- Lippmann, M. (Ed.). (1992). *Environmental toxicants: Human exposures and their health effects*. New York: Van Nostrand Reinhold.
- Moeller, D. W. (1997). *Environmental health* (Revised ed.). Cambridge: Harvard University Press.
- Moore, G. S. (1999). *Living with the earth: Concepts in environmental health science*. Boca Raton: Lewis Publishers.
- Nadakavukaren, A. (2000). *Our global environment;: A health perspective* (5th ed.) Prospect Heights: Waveland Press, Inc.
- Philp, R. B. (1995). *Environmental hazards and human health*. Boca Raton: Lewis Publishers.
- Yassi, A., Kjellstrom, T., de Kok, T., Guidotti, T. L. (2001). *Basic environmental health*. New York: Oxford University Press.
- Devis Devra (2002). *When Smoke Run Like Water*. Basic Books. Member of the Perseus Books Group.
- Donald Vesley (1999). *Human health and the environment: a turn of the century perspective*. Kluwer Academic Publishers. Boston/Dordrecht/London.
- Dawn Matthews (2003). *Environmental health source book: basic consumer health information about the environment and its effect on human health, including the effects of air pollution, water pollution, hazardous chemicals, food hazards, radiation hazards, biological agents.....* Omnigraphics. Detroit.

GROUND RULES

- 1.** Check Intranet regularly. All announcements, lecture notes, assignments, and all other information will be posted on the Intranet.
- 2.** In a large enrolment (300+) course like this, the quality of your learning experience depends not only on me (the instructor), but also on you (the students).
- 3.** I can only do my best if I have your full and undivided attention for the whole class. Things which will rob me of that attention are:
 - a.** Late (noisy, disruptive) arrivals. This is a particular “hot-button” for me as you may well find out. This also applies to arrival back for the second hour of class.
 - b.** Cellphones ringing. I do not care who the call is from; you will **not** take it in class. Please switch off all pagers and cells before coming into class; even those that are in backpacks.
 - c.** Chattering and sharing particularly interesting newspaper ads with your chums. It is a complete mystery to me why anyone would spend all kinds of money on a class, and then futz about rather than

trying their best to follow the material. That kind of stuff happening in class will force me to deal with it, and will also interrupt the flow of the class, most particularly for the people sitting close to the perpetrator(s).

d. Behaviour that might have been acceptable (and which probably should not have been) in small high school classes is not acceptable in the University context. The level of demand in this class is sufficiently high that nothing less than your best effort will be adequate. You have only 24 hours of class contact time with me; every minute counts. I have a mass of fundamentally important ideas to communicate to you; we have to work hard together at it to succeed.

4. Due to the size of the classroom I will defer answering the questions until the time between the two class hours, until after class or office hours.

5. I believe that the things that I am going to teach you are of surpassing importance. I have a passion for this material and very much want to transmit that to you. All the above is simply an attempt to make the process easier and more enriching.