

**"HUMAN HEALTH AND THE ENVIRONMENT"**  
**(EESA10 H3-S L30)**

**Instructor:** Dr. Silvija Stefanovic

**Lecture:** Wednesday 7–9pm; AC223

**Office:** SW-648

**Office hours:** Wednesday 6-7pm

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**TAs:** Peter Ng  
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TBA

**Office:** SW511A

**Office hours:** TBA

**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.

**Text:**

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

“Understanding Environmental Health: How We Live in the World” Nancy Irwin Maxwell, 2014, Jones & Bartlett Learning (available from the bookstore)

**Lecture notes:**

The lecture slides will be posted in \*.pdf format on the Blackboard. You will require Adobe Reader to open the files (available free of charge at [www.adobe.com](http://www.adobe.com)).

**Course email policy:**

Email is not an effective way of teaching and email inquiries regarding course materials will not be answered. Dr. Stefanovic will also be available during designated office hours to answer questions regarding course material. Teaching assistant will be available during specified office hours to answer questions pertaining to the term assignments. If you have questions, then please see instructors during office hours – this time is for you so please do not hesitate to use it.

**Grading:**

|                       |                 |
|-----------------------|-----------------|
| Assignments (2):      | 30 % (15% each) |
| Mid-term Examination: | 30%             |
| Final Examination:    | 40%             |

## Assignment:

There are no mandatory tutorials in this course. TAs will hold office hours to help with assignments. See the Blackboard to find out the name of your TA and her/his office hours. I 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.

You will have two assignments during the term, worth 30% of the final grade (15% each). You will be able to access the problem sheets on the Blackboard at the times detailed below. The marking rubric will be also posted on the Blackboard and should be printed and attached to the assignment before submission. Completed exercises must be placed in the box of the appropriate TA, outside SW-511A, by 5 pm on the dates shown. More details on the assignments will be circulated during the term.

| <i>Topic</i>                               | <i>On the Blackboard</i> | <i>Submission Due</i>             |
|--|--------------------------|-----------------------------------|
| Assignment #1<br>(Related to Lecture 1-5)  | Jan. 26 <sup>th</sup>    | Feb. 9 <sup>th</sup> , 5pm sharp  |
| Assignment #2<br>(Related to Lecture 6-11) | Mar.9 <sup>th</sup>      | Mar. 23 <sup>rd</sup> , 5pm sharp |

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

## Midterm

The 1-hour mid-term examination will be held during the mid-term period, exact time, date and room TBA. The exam will consist of multiple-choice and true-false choice and will be worth 30% of the final grade.

The midterm will draw from lectures 1-5 and assignments and includes lecture notes and *any* material presented in the classroom. Information from the textbook and other resources not directly covered in class will not be tested on exams. More details about the exams will follow. **Questions about the videos will be on the exams.**

## Final Exam

The 1 hour final examination is worth 40% of the final grade for the course. It will be a combination of multiple choice and true-false choices. *The final exam is NOT cumulative.*

The final exam will draw from lectures 6-11 and assignments and includes lecture notes and *any* material presented in the classroom. Information from the textbook and other resources not directly covered in class will not be tested on exams. More details about the exams will follow. **Questions about the videos will be on the exams.**

## Other Course policies:

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.*

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 University calendar).

## Lecture topics:

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

Understanding the Health Effects of Environmental Hazards

**Video:** "Leaving Downstream" Featured by Dr. Sandra Steingraber

Jan.7<sup>th</sup>

2. Airborne Hazards and Human Health

Jan. 14<sup>th</sup>

3. Waterborne Hazards and Human Health

Jan. 21<sup>st</sup>

4. Assignment #1 Tutorial;

Chemical Hazards and Human Health

**Video:** "The Disappearing Male"

Jan. 28<sup>th</sup>

|   |                       |
|---|-----------------------|
| 5. Heavy Metals and Human Health.<br><b>Case study:</b> CCA (Chromated Copper Arsenate) wood preservative   | Feb. 4 <sup>th</sup>  |
| 6. Radiation and Electromagnetic Hazards and Human Health   | Feb. 12 <sup>th</sup> |
| <b>7. READING WEEK</b>  | Feb. 18 <sup>th</sup> |
| 8. Biological Hazards and Human Health<br><b>Video:</b> “Black dawn: the next pandemic”   | Feb. 25 <sup>th</sup> |
| 9. Foodborne Hazards and Human Health<br><b>Video:</b> “Diet and Disease in Modern Society”   | Mar. 4 <sup>th</sup>  |
| 10. Assignment #2 Tutorial;<br>Toxicology, the Science of Risk Assessment, Precautionary Principle  | Mar. 11 <sup>th</sup> |
| 11. Environmental Hazards to Specific Populations: Children and Women; Occupational Hazards;<br>Growing Population and Overconsumption and Human Health, War and Human Health | Mar. 18 <sup>th</sup> |
| 12. Climate change, Ozone depletion, Species Loss and Ecosystem Disruption and Human Health   | Mar. 25 <sup>th</sup> |
| 13. Course review; Final Exam Preparation   | Apr. 1 <sup>st</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.*

**Associated Readings in McCally’s Text:**

- Lec. 1- Chapter 1(pg. 1-6, pg. 10-12)
- Lec.2- Chapter 2
- Lec. 3- Chapter 3
- Lec. 4- Chapters 9, 10
- Lec. 5- Chapter 4
- Lec. 6- Chapter 12
- Lec. 9- Chapters 13, 14
- Lec. 10- Chapters 5, 15, 16
- Lec. 11- Chapters 6, 7, 8

**Associated Readings in Maxwell’s Text:**

- Lec. 1- Chapter 1
- Lec. 2- Chapter 4 (pg. 128-139), Chapter 5 (pg. 211-213), Chapter 7 (pg. 328-331)
- Lec. 3- Chapter 7 (pg. 303-309)
- Lec. 4- Chapter 5 (196-205)
- Lec. 5- Chapter 4 (pg. 139-143), Chapter 5 (pg. 207-210)
- Lec. 6- Chapter 3 (pg. 106-114), Chapter 2 (pg. 20-23), Chapter 7 (pg. 335-337)
- Lec. 7- Chapter 3 (pg. 72-104)
- Lec. 8- Chapter 6 (pg. 239-250, 268-270)
- Lec. 9- Chapter 2 (pg. 18-37; 52-66)
- Lec. 10- Chapter 5 (214-216), Chapter 7 (337-339)
- Lec. 11- Chapters 4 (pg.143-156), Chapter 5 (205-206)