

GCH 560-002
Environmental Health
3 credits
Fall 2009

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Meeting Times
Mondays
7:20-10:00 pm

Meeting Room
Innovation Hall, Rm. 135

Office Hours
E-mail to arrange

Course Description

Examines principles and methods, risk factors, prevention and control, and policies related to the aspects of human health determined by biological, physical, and chemical factors in the environment at the local, regional, and global levels.

Course Objectives

- Explain the principles of environmental health related to key discipline in the field, including water quality, air quality, solid waste management, hazardous waste management, vector control, and food protection.
- Explain how human health is dependent upon environmental health.
- Identify specific environmental hazards that are risks to human health.
- Apply epidemiological methods to the assessment of environmental and occupational exposures.
- Explain environmental approaches to disease prevention and control.
- Examine local, regional, and global environmental health laws, policies, and regulations.
- Identify the human health effects of local and global environmental change.
- Explain how the health of the environment is impacted by human actions.
- Identify steps that can be taken to create and sustain an environment that promotes human health.
- Communicate environmental health problems and possible solutions based on scientific evidence.
- Critically review published literature in the field of environmental health.

Textbook

Optional

Environmental Health: From Global to Local. 1st Edition. Howard Frumkin. Jossey-Bass; 2005

Our Global Environment: A Health Perspective. 6th Edition. Anne Nadakavukaren. Waveland Press; 2005

Living in the Environment: Principles, Connections, and Solutions 14th edition G. Tyler Miller Brooks Cole; 2004

Course Structure

The course is divided into two units: Concepts, Approaches and Tools, and Environmental Health Topics. The first unit will address the approaches to measure risk, toxicology, sustainability, epidemiology, and legal and regulatory framework. The second unit will include lectures on indoor and outdoor air pollution, water quality, soil characteristics, pest control, food safety, radiation and occupational health.

Course Format

The course is taught as a series of lectures, power point presentations, and required readings from the textbook as well as additional articles. Two exams will be administered and a group project will be assigned.

Exams

Each test addresses the topics, lectures, and text chapters covered within the unit. The exams are 1 hour 30 minutes and consist of multiple choice questions and essay questions. A make-up for the exam will be allowed only with certified medical excuse or prior permission from the instructor.

Exams take time to prepare and, as a form of intellectual property, belong to those who create them (your professors). Consequently, exams will remain in my possession and the students will not keep them. Students are encouraged to review their exams during class time for correction purposes. However, failure to return an exam after taking or reviewing it or removing an exam from the classroom will result in an exam grade of zero.

Group Project

Students will take part in a group project that focuses on critical issues in environmental health not discussed in class. Students will form groups (5 students per group) and select a topic from the accepted areas. The groups will review the scientific literature and prepare a fact sheet on the environmental issue. Students will also make brief presentations (no more than 20 minutes) of their project. Detailed instructions and the topics for the projects will be discussed in class after Exam 1.

Student Evaluation

- Two examinations - 100 points each (200 points total)
- Group Project - 50 points fact sheet / 50 points presentation (100 points total)
- Total Points = 300
- Grading follows GMU's standards:
 - 100-90 = A
 - 89-80 = B
 - 79-70 = C
 - 69-60 = D
 - <59 = F

Student Responsibilities

Academic Honesty

George Mason University operates under an honor system, which is published in the University Catalog and deals specifically with cheating, attempted cheating, plagiarism, lying, and stealing. Please familiarize yourself with the honor code, especially the statement on plagiarism (<http://www.gmu.edu/facstaff/handbook/aD.html>). If you have questions about when the contribution of others to your work must be acknowledged and appropriate ways to cite those contributions, please talk with me.

Attendance

Students are expected to attend and be prepared to participate in all class sessions and article review discussion. Please notify the instructor if you are unable to attend class because attendance will be considered for those students that may be borderline at the time final grades are awarded. Students will be held responsible for any material covered that they may miss during any absence from class.

Cell Phones, Pagers, Blackberries

Electronic communication devices **MUST** be turned off during class.

Students with Disabilities

If you are a student with a disability and you need additional academic accommodations, please contact the Disability Resource Center (DRC) on 703-993-2427. All academic accommodations must be arranged through the DRC.

Course Schedule

No.	Date	Topic	Reading Assignment	Chapter: <i>Book</i> Chapter #
I. Concepts, Approaches and Tools				
1	Aug 31	Introduction Environmental Health Principles	Chapter: <i>Nadakavukaren</i> 1; Chapter: <i>Frumkin</i> 1	
2	Sept 7	Labor Day		
3	Sept 14	Environmental Health Law and Regulations	Chapter: <i>Frumkin</i> 33	
4	Sept 21	Methods of Assessment, Toxicology and Epidemiology	Chapter: <i>Nadakavukaren</i> 7; <i>Frumkin</i> 2, 3, 32	
5	Sept 28	Global Environmental Health and Human Health	Chapter: <i>Nadakavukaren</i> 2-5; <i>Frumkin</i> 4, 10-13, 16-17, 32, 34	
6	Oct 5	Green Living: New Science and Technologies to Protect the Environment	-	
7	Tuesday Oct 13	EXAM I Group Presentations Discussion	Columbus Day Recess - Monday class meets Tuesday	
II. Environmental Health Topics				
8	Oct 19	Indoor and Outdoor Air Pollution	Chapter: <i>Nadakavukaren</i> 11-12; <i>Frumkin</i> 14, 22	
9	Oct 26	No class		
10	Nov 2	Water Quality and Management	Chapter: <i>Nadakavukaren</i> 14-15; <i>Frumkin</i> 18	
11	Nov 9	No class		
12	Nov 16	Solid Waste and Hazardous Waste	Chapter: <i>Nadakavukaren</i> 16; <i>Frumkin</i> 19	
13	Nov 23	Vector and Pest Control Food Safety and Protection	Chapter: <i>Nadakavukaren</i> 8-9; <i>Frumkin</i> 20-21	
14	Nov 30	Industrial Hygiene and Occupational Health Radiation	Chapter: <i>Nadakavukaren</i> 10; Chapter: <i>Frumkin</i> 23-25	
15	Dec 7	EXAM II		
III. Group Presentations				
16	Dec 14	Group Presentations		