

H316: ENVIRONMENTAL HEALTH SCIENCE

SPRING 2017

School of Public and Environmental Affairs
Indiana University - Bloomington

INSTRUCTOR: Graham McKeen, MPA	OFFICE: EHS 106 (1514 E 3 rd St)
TIME: 8:00 – 9:15 a.m. MW	E-MAIL: gmckeen@iu.edu
LOCATION: Student Building Rm 150	PHONE: 812-856-5482
SECTION #: 14146	OFFICE HOURS: After class and by apt

PURPOSE

This course is intended to provide students with a broad perspective on how the complex interactions of humans with the environment affect health. Emphasis is placed on understanding the ways in which biological, chemical, and physical agents in the environment cause disease and the means by which such disease can be prevented or controlled within human populations.

OBJECTIVES

At the conclusion of this course the student will be able to:

1. Explain the concept and importance of the “ecological” model in developing strategies for preventing or mitigating environmental health problems.
2. Discuss current concepts of disease and the means by which disease is characterized and studied in human populations.
3. Identify specific factors, agents, and conditions within the environment that may cause human disease or adverse health outcomes.
4. Provide a balanced discussion of the relative health risks posed by various levels of exposure to different environmental agents or factors.
5. Describe environmental control strategies that are commonly applied to prevent or minimize the adverse health effects of environmental agents.
6. Discuss current issues and principles of practice in such traditional environmental health areas as vector control, food safety, radiological health, air and water pollution control, solid and hazardous waste management, and occupational health.

READINGS

Recommended Textbook: Friis, Robert H., *Essentials of Environmental Health*, Jones and Bartlett Learning, Sudbury, MA, 2012 (2nd edition).

Articles at H316 CANVAS site under RESOURCES:

1. Hanlon, John J. and Pickett, George E., *Public Health - Administration and Practice*, Chapter 19, pp. 319-325 .
2. Nadakavukaren, Anne, *Our Global Environment*, Chapter 6, pp. 127-152.
3. Hanlon, John J. and Pickett, George E., *Public Health - Administration and Practice*, Chapter 2, pp. 22-33.
4. Supplemental Readings – various readings of interest will be posted in Canvas under ‘Pages’ to supplement each topic area.

On occasion, other materials of interest and timeliness will be posted on Canvas to supplement various topics throughout the semester. You will be notified of any additional required readings in class and/or by Canvas messages.

GRADING POLICY:

The final grade will be based upon a total of 475 points as follows:

1. **Examinations** (300 points total) – Three (3) examinations (100 points each) will be given during the course of the semester. The examinations will cover material presented in class (including group presentations) and will be supported from the text, readings, and class discussions. The examinations will not be cumulative; however, an understanding of material covered in the previous exam(s) will be helpful in answering subsequent examination questions. Exams will predominately be comprised of multiple choice questions.
2. **Quizzes** (40 points total) – Two (2) short quizzes (20 points each) will be given in class. The quizzes will cover material presented in class (including group presentations) and be supported from the text, required readings, and class discussions. Quizzes will predominately be comprised of multiple choice questions.
3. **Group Presentation** (50 points) - Each student will be required to participate within an assigned group in researching, preparing, and delivering a presentation to the class on a specific environmental health topic. General topics will be assigned and groups will then select one (1) subtopic to present to the class. The presentation is expected to require 15 minutes with an additional five (5) minutes devoted to class interaction (i.e. - question and answer, discussion, or summary). The use of slides, handouts, demonstrations, and short videos (<5 minutes) is encouraged. The presentation will be evaluated on its preparation, organization, content, style, and overall effectiveness in communicating the “essential” points of the topic. Some general questions will be provided to guide the information to be presented and we will meet in groups during class on a few occasions to allow for group work.

Initial Outline (15 points) – No later than February 13th, the group must submit to the instructor the ‘initial’ outline of the presentation which includes: a title page with the names of the group members and a 2-3 page outline of the presentation. Submit the outline on Canvas in the ‘Assignments’ section of the site in the appropriate folder.

Final Outline (15 points) – At least 24 hours before the presentation, the group must post on Canvas (in the ‘Assignments’ section of the site) any visuals they will be using for the presentation as well as the ‘final’ outline of the presentation which includes: a title page with the names of the group members, a 2-3 page outline of the presentation, and a reference page including at least 6 references used in the preparation of the presentation. The outline and the references can be presented in any established format (MLA, APA, Chicago, etc.).

Internal Group / Peer Evaluations (5 points) – At least 24 hours before the presentation, each group member must submit a completed internal/peer group evaluation form on Canvas. This form (located in the Group Projects folder) will allow you to rate your fellow group members on how they performed during your project. The evaluation will be used to determine whether any points will be added or subtracted (+/- 5 points) to your individual Group Project grade.

4. **Evaluations of Group Presentations** (20 points) – Each student is required to serve as an evaluator of two (2) Group Presentations. Each evaluation is worth 10 points. These will need to be detailed and provide constructive criticism and feedback to be awarded full points. You will be provided an evaluation form for this task. The evaluations will be used as a component to the final grade given to the Group being evaluated. You will be assigned evaluation dates early in the semester so please ensure that you will be present on those dates.
5. **Environmental Health Media Synopsis** (20 points) – Each student shall choose one of the Environmental Health Media (video, podcast, documentary, etc) provided by the instructor and then submit a short written synopsis (2 pages) of the episode while answering specific questions.
6. **Participation and Attendance** (10 points) – 10 points will be awarded throughout the semester based on your participation in the class. This includes involvement in class discussions, in-class activities, asking questions during lectures and group presentations, active participation in the class forum, and attending class regularly. Students are allowed to miss three (3) classes without penalty throughout the semester. After three (3) missed classes, each unattended class will result in the loss of two (2) participation points.

GRADING SCALE:

(+ awarded to top 3 points of each scale, - awarded to bottom 3 points of each scale):

90-100	A
80-89	B
70-79	C
60-69	D
< 60	F

SIGNIFICANT DATES:

1/18/17 - Groups and General Topics Assigned
 1/23/17 – Media Assignment Assigned
 2/13/17 - Group Outlines Due / Exam 1
 2/15/17 – Media Assignment Due
 2/20/17 - Group Presentations Begin
 3/1/17 - Quiz 1
 3/22/17 - Exam 2
 4/10/17 - Quiz 2
 3/13/17 – No Class – Spring Break
 3/15/17 – No Class – Spring Break
 4/26/17 - Final Exam (Exam 3)

CLASS SCHEDULE

Date	Topic	Readings
1/9	Course Introduction	
1/11	Concepts of Disease and Environment	RR1
1/16	No Class – MLK Day	
1/18	Ecology, Population, and Human Health Groups and General Topics Assigned	T: Ch. 1
1/23	Environmental Disease EHS Media Assignment Assigned	RR2
1/25	Environmental Disease	RR2
1/30	Environmental Disease	RR2
2/1	Epidemiology	T: Ch. 2
2/6	Environmental Health Practice (Group work)	T: Ch. 1, RR3
2/8	Measures of Population Health (Group work)	
2/13	EXAM 1 Initial Group Outlines Due	
2/15	Basic Toxicology/Toxic Substances EHS Media Assignment Due	T: Ch. 3 & 6
2/20	Risk Assessment/Toxic Substances Group 1 Presents (14,15 Evaluate)	T: Ch. 3 & 6
2/22	Zoonotic/Vector-Borne Diseases Group 2 Presents (12,13 Evaluate)	T: Ch. 5

2/27	Zoonotic/Vector-Borne Diseases Group 3 Presents (10,11 Evaluate) Group 4 Presents (8,9 Evaluate)	T: Ch. 5
3/1	Pesticides Group 5 Presents (6,7 Evaluate) Quiz 1	T: Ch. 7
3/6	Ionizing and Non-Ionizing Radiation Guest Lecturer	T: Ch. 8
3/8	Foodborne Illness/Safety Group 6 Presents (4,5 Evaluate)	T: Ch. 11
3/20	Foodborne Illness/Safety Group 7 Presents (2,3 Evaluate)	T: Ch. 11
3/22	EXAM 2	
3/27	Water Resources/Waterborne Disease Group 8 Presents (1,15 Evaluate)	T: Ch. 9
3/29	Water Pollution and Control Group 9 Presents (13,14 Evaluate)	T: Ch. 9, 12
4/3	Outdoor Air Pollution and Control Group 10 Presents (11,12 Evaluate)	T: Ch. 10
4/5	Energy Production and Public Health Group 11 Presents, (9,10 Evaluate)	T: Ch. 10
4/10	Indoor Air Pollution Quiz 2 Group 12 Presents (7,8 Evaluate)	T: Ch. 10
4/12	Solid Waste Management Group 13 Presents (5,6 Evaluate)	T: Ch. 12
4/17	Hazardous Waste Management Group 14 Presents (3,4 Evaluate)	T: Ch. 12
4/19	Occupational Health Group 15 Presents (1,2 Evaluate)	T: Ch. 13
4/24	Occupational Health/Noise Pollution Course Review	T: Ch. 13
5/5	EXAM 3 – FINAL EXAM (8am in class)	

STUDENT MISCONDUCT

Academic and personal misconduct by students in this class are defined and dealt with according to the procedures in the *Code of Student Ethics*; <http://www.iu.edu/~code/>