

COR 115 Environmental Health Issues
Spring 2011
T R 12:45- 2:00 PM

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Course description

This course addresses the connection between health and the environment. Topics include; the areas of environmental epidemiology, toxicology, and policy, agents of environmental disease, and water, air, and soil quality. The work of scientists and public health specialists to discover, assess, and reduce exposure and risk to environment health problems are also explored. Case studies are used to provide context and background for the environmental health issues past and present.

Relationship to other courses and the University mission

COR 115 is a course that every Chatham University student must take during the first year as part of the general education requirement. Although this course emphasizes biology and ecology it does not rely on any other prior knowledge of science. This course and the other core courses at Chatham are steps in the sequence of courses that will prepare students to be “World- Ready Women”.

Objectives and Assessments

1. Environmental Health

Objectives:

- Describe how environmental problems impact our lives
- Identify the major concepts of toxicology
- Describe impacts of population, pollution, and poverty on the environment
- Identify 5 major past environmental health events
- Identify historical people important in the field of environmental health

Assessments:

- Create a list of environmental problems from newspaper headlines/political cartoons
- Write a description interpreting graphs showing the impact of population, pollution, and poverty on the environment
- From a chart of a brief environmental history, students, working in pairs will research an event and a person and write a short paragraph description for the event and the person. These descriptions will be merged into a larger document to be shared by the class

2. Epidemiology

Objectives:

- Create a list of epidemiology tools used to study environmental health
- Identify associations found between hazards and health outcomes
- Identify study designs used in environmental epidemiology

Assessments:

- Complete the Case study of Atrazine and frog hermaphroditism.
- Using Cosmetics as an example, a list of hazards and outcomes will be created and shared.

- From a series of research article abstracts, a match of type of study designs will be created.

3. Toxicology

Objectives:

- Describe methods of human exposure assessment
- Identify factors that affect the response of a toxic chemical

Assessments:

- Using a chart on the relationship among 15 risk characteristics, a written description of exposure assessment will be created.
- From information for selected toxic chemicals, graphs and charts will be created showing the relationship between dose, exposure, and timing.

4. Policy and Regulation

Objectives:

- Identify major environmental laws within the past 10 years
- Describe principles that should guide environmental policy development

Assessments:

- Environmental events from the past 10 years are identified in terms of the pertinent laws. This information is present in chart form.
- The Case Study of the Love Canal will serve as a basis for developing guidelines for environmental policy development.

5. Disease: Zoonotic and Vector- Borne Diseases

Objectives:

- Define Zoonotic and vector-borne disease
- Trace the trans mission of vector-borne diseases

Assessments:

- Using examples of diseases pamphlets are created to show the origin and transmission pattern and possible preventive measures for Zoonotic and vector-borne diseases

6. Disease: Toxic Metals

Objectives:

- Explain the mechanism for exposure to and possible preventive measures from heavy metals

Assessments:

- Using examples of diseases pamphlets are created to show the origin, exposure pattern, and possible preventive measures for hazardous heavy metal exposure.

7. Disease: Organic compounds - Cosmetics

Objectives:

- List common substances containing dangerous organic compounds
- Create a list of substances, occurrence, and good & bad effects

Assessments:

- Using examples of diseases pamphlets are created to show the origin, exposures, transmission patterns, and possible preventive measures for pesticides and organic compounds

8. Disease: Radiation

Objectives:

- Describe the sources and difference of ionizing and non-ionizing radiation
- Describe health effects of ionizing and non-ionizing radiation

Assessments:

- Using examples of radiation effects, pamphlets are created to show the patterns of exposure and possible preventive measures for ionizing and non-ionizing radiation

9. Water Quality

Objectives:

- Describe the hydrological cycle
- List hazards to the aquatic environment
- Conduct tests on substances in different samples of drinking water

Assessments:

- Create a diagram showing the hydrological cycle
- From readings and a Web Quest, a list of hazards in the oceans, lakes, and rivers will be described
- Water testing on samples from bottled water, tap water, and pond water will be conducted and recorded in a lab report format

10. Air Quality

Objectives:

- List health effects associated with air pollution
- Describe historically important air pollution events

Assessments:

- From video and Web-based evidence, a list of air pollution health effects will be created
- A Case Study of the Donora, PA Fog will be completed

11. Food Safety

Objectives:

- Identify agents implicated in food-borne illnesses
- Identify policies for maintaining the safety of the food supply

Assessments:

- Create a list of questions for a guest lecture
- Create a fact sheet based on information given during the guest lecture

12. Waste Disposal

Objectives:

- Describe methods for the reduction and treatment of waste materials
- Discuss hazards of improper or poorly designed treatment facilities

Assessments:

- A list of methods of waste treatment showing relative effectiveness and cost factors will be created.
- A case study of improper waste disposal will be completed

Learning Outcomes

1. Familiarity with scientific ways of thinking and problem solving
2. Increased understanding of the basic concepts of environmental health science
3. Increased ability to evaluate, analyze, and interpret scientific data
4. Increased understanding of the inter-relatedness of our environment and health
5. Practice working with partners and in small groups
6. Practice in gathering and evaluating information from a variety of sources; journals and web-based
7. Practice in organizing and presenting clear, logical oral presentations

Learning Methods

Learning methods in this course will include traditional lectures, guest speakers, Library research, web-based research, case study analysis, and exams as well as active learning in inquiry-based discussions and small group work.

TEXT

Friis, Robert H., *Essentials of Environmental Health*, Jones and Bartlett Publishers Inc, Massachusetts, 2007

Course Policies

Attendance

You are expected to attend all class sessions, to be prepared, and to participate actively. This class includes discussion and group work. If you are absent for all or part of a group activity, you will not receive full credit for that activity. Please inform me ASAP if there are special circumstances, illnesses, or family emergencies or Chatham sanctioned events – i.e. Sports. If you miss class, you are responsible for the information from the class session, including assignments, announcements, changes etc. More than two unexcused absences may adversely affect your grade.

Grading

2 TESTS (30 points each)	60	A = 250 - 233
3 case Studies (15 points each)	45	A- = 232 - 225
2 Web Quests (10 points each)	20	B+ = 224 - 215
2 Video summaries (5 points each)	10	B = 214 - 207
Pamphlet / presentation (15 points)	15	B- = 206- 199
Poster (5 points)	5	C+ = 198 - 190
Final project/paper (15 points)	15	C = 189 - 182
Final presentation power point (15 points)	15	C- = 181 - 173
5 Vocabulary tests (5 points each)	25	D+ = 172 - 165
Participation (40 points)	40	D = 164- 157
TOTAL POINTS	250	D- = 156 - 148
		F below 148

Missed Exams / Assignments

Students are expected to take exams at the scheduled time and to turn in assignments when they are due. If you are ill or have a legitimate personal emergency, please

notify the instructor **in advance** by phone or email. If you have a serious emergency, notify Nancy Ferrari, Director of Advising (ext 2762). She can notify all of your instructors. Unexcused absences from exams will result in a zero for that exam. Assignments turned in late are subject to loss of points for each day the assignment is late.

Behavior

All students are expected to be respectful and courteous to everyone in the class. See the Student Handbook for more specific information. You are expected to arrive on time for class and remain for the entire session. Cell phones and other personal electronic devices must be turned off.

ADD/DROP January 11, 2011
Withdraw March 14, 2011
Final Exam week of April 22-26

Honor Code:

Under the Chatham Honor Code System, students are expected to be honorable in all academic situations. Integrity in academic matters requires intellectual independence in all work. Academic honor includes student responsibility to refrain from giving or receiving aid on examinations, as well as to meet all class related responsibilities in a timely manner.

Information about the Honor Code is available in the Student Handbook.

Disability Statement:

Chatham University is committed to providing an environment that ensures that no individual is discriminated against on the basis of her/his disability. Students with disabilities, as defined under the Americans with Disabilities Act of 1990 (ADA) and who need special academic accommodations, should notify the director of the PACE Center as soon as possible. The PACE Center will work with students and the course instructor to coordinate and monitor the provision of reasonable academic accommodations.

Cheating and Plagiarism:

Cheating is defined as the attempt, successful or not, to give or obtain aid and/or information by illicit means in meeting any academic requirements, including examinations.

Plagiarism is defined as the use, without proper acknowledgement, of the ideas, phrases, sentences, or larger units of discourse from another writer or speaker.

Non-registered Students Policy

In accordance with College policy, only officially registered students may attend this class and all other classes offered at the college. Please confer with your advisor if you need assistance with the registration process or you need additional information.

Grading Appeals

If you wish to appeal a grade or have a problem with the course, please come to *me* first. If we are unable to reach a resolution, the complaint(s) should be taken first to Dr. Larry Viehland (Buhl) and then, if necessary, to Dr. Anne Skleder, Undergraduate Dean.

Learning Resources

The PACE Center provides tutorial and other types of assistance for any courses taught at Chatham University. When you encounter problems in this or any other course, you should start by going to your instructor's office and asking for help. After this, if you find you need more help then you should call or visit the PACE Center in the Library (third floor).

COR 115 Environmental Health Issues

Class	date	Topics	Activities	Assignment	due date
1	6-Jan	Background of the Field of Environmental Health	CASE STUDY	Read Chapter One Vocabulary	11-Jan
2	11-Jan	The 3 Ps Pollution, Population, Poverty	Organization of data Raising Questions	Timeline Study Question #3	14-Jan
3	13-Jan	Research History of environmental health issues	Web Quest	Complete Web Quest Read first section of Chapter 2 pg 25-35	18-Jan
4	18-Jan	Atrazine: A case of an Environmental health hazard	Begin Section 1 of case study Identification of types of case studies	Complete Sections of Frog case study	20-Jan
5	20-Jan	New Data / New Concerns	Finish Case study Cosmetics - Beauty or Health?	Finish reading Chapter 2 Study Vocabulary	25-Jan
6	25-Jan	Environmental Toxicology	Dose and Exposure 81 known hazards A second look at pesticide exposure	Read Chapter 3 Study Questions #1, 2, 3	31-Jan
8	31-Jan	Policy and Regulations	Policies - where do they come from? What can they do?	Read Chapter 4	Feb 1
9	1 -Feb	Minamata's Disease	Section 1 and 2 of the case study	Complete questions from sections 3 and 4	3-Feb
10	3-Feb	TEST			
11	8-Feb	Environmental disease	Geographic Distribution and vector-borne diseases	Read Chapter 5 Select topic for short presentation	10-Feb
12	10-Feb	Environmental diseases	Interpretation of maps, graphs, and charts	Chapter 5 Study questions # 1, 2, 3, 4 Chapter 6 Study Questions 1, 2, 4, 5	15-Feb
13	15-Feb	Toxic Substances - the bad and the good	Parabens and others	Inventory of cosmetic products	17-Feb
14	17-Feb	Women's health issues Cosmetics	Organic Compounds Lead in Lipstick	Chapter 7 Study Questions # 1, 2,	24-Feb

Class	date	Topics	Activities	Assignment	due date
15	22-Feb	The Body Burden Cosmetics and advertising	Preparing materials for in School Presentations	Prepare Pamphlet on health issues and Information Table	
16	24-Feb	Getting the Message out	Finalizing materials - scheduling		2-Mar
17	1-Mar	Radiation - the bad and the good Tanning bed case study	Developing the issues from case study articles 3 Presentations	Complete case study materials	15-March
18	15-Mar	Linking Environmental cycles and distribution of toxins	12 Presentations	Chapter 8 Study Questions # 1, 2, 4	
19	22-Mar	Linking Epidemiology, Toxicology, and Policy	12 Presentations		24-Mar
20	24-Mar	Video Assignment	View videos on Air and Water Pollution	Complete Study guide for Videos and Complete Web quest on Air, Water, Soil Pollution	29-Mar
21	29-Mar	Water Quality	Watersheds, wetlands, rivers, oceans, and lakes	Read Chapter 9 Study Questions # 1, 4, 10 Work on Poster Read Chapter 10	31-Mar
22	31-Mar	Air Quality	A History of Bad Air The Case of the Donora Fog	Read Chapter 11 Study Questions # 1, 2, 9	31-Mar
23	April 5	Food	Guest Lecture	assignment in class	5 April
24	7-April	Food and Soil	You are what you eat - Do you know what you are eating? Food Hazards	Read Chapter 12 Study Questions # 1, 2, 3	12-Apr
25	12-Apr	Waste	Natural, animal, and industrial waste The superfund sites	Map assignment	19Apr
26	14-Apr	Climate Change	Checking the facts A sense of History	Complete Evidence Table	19-Apr
27	19-Apr	Current Issues in Environmental health	8 presentations	One fact from each presentation	19-Apr
28	21-Apr	Current and Historical Issues in Environmental Health	8 presentations	One fact from each presentation	21Apr

29	FINAL EXAM				
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