Environmental Health Concepts in Public Health
PHC 6313 Spring 2009
Tuesday 11:45-1: 40, Thursday 11:45-12:35 G101

Instructor: Natalie C.G. Freeman, Ph.D., M.P.H.
nfreeman@phhp.ufl.edu
TA DeAnne Fanta
soccerdk@ufl.edu

Course description
This course is a survey of major topic areas of environmental health. It will examine sources, routes, media, and health outcomes associated with chemical, physical and biological agents in the environment. It will cover how the agents affect water quality, air quality, food safety, land resources, and disease in community and occupational settings. The course will address the current federal legal framework, policies, and practices associated with environmental health issues and intended to improve public health.

Course objectives
Upon completion of this course, students will be able to:

1. Define the major sources of biological, chemical and physical agents found in water, air, soil, and food
2. Describe environmental and occupational health problems associated with chemical, physical and biological agents
3. Discuss the methods that are used to analyze health impacts of environmental exposures in the fields of toxicology, exposure assessment, risk assessment, epidemiology, and industrial hygiene
4. Develop competency in analyzing causes of environmental health issues
5. Characterize target populations exposed to hazardous agents
6. Describe methods used to detect, manage, control, or remove health hazards
7. Describe the existing regulatory framework for controlling environmental and occupational agents

Text book
Understanding Environmental Health Nancy Irwin Maxwell 2009
Jones and Bartlett Publishers ISBN10 0-7637-3318-0, ISBN13-978-0-7637-3318-6

Format
The course is conducted as a series of lectures, individual home work assignments and critical reviews, a group project, and three tests. Some of the lectures may focus on topics not fully addressed in the text book and some of the chapters may not be covered fully in lectures. Students are responsible for both text and lecture material. Additional readings will be posted on the class website.

Tests. The course is divided into three segments, and each test addresses the topics, lectures and text covered within that segment. There is no cumulative final exam, although integration of concepts across the duration of the course will occur and will be reflected in

the three tests. The format of the exams will include content questions (multiple choice, short answer) and integrative questions (essay or outline answers) that rely on the application of concepts and knowledge drawn from readings, lectures, and assignments.

Home work assignments. The homework assignments are designed to give you experience using significant websites for gathering information about Environmental Health issues and regulations. Instructions for each assignment will be given in class. Assignments are due one week after the class presentation.

Critical Review Assignment. It is important that as future and current Public Health professionals you be able to read and understand journal articles, and integrate concepts across the breadth of areas within Environmental Health and the other Public Health disciplines. The assignments are formulated to help you develop these skills. There will be 3 assignments are related to topics that we cover in class. For all researched assignments, appropriate documentation of sources is required. The 2 assignments are critical reviews of scientific journal articles (maximum 4 pages, double spaced for each assignment).
All of the articles will come from Environmental Health Perspectives www.ephonline.org

Assignment 1: Due 1/29 topics: Cancer, Arsenic, Housing, PBDE flame retardants
Assignment 2: Due 2/26 topics: Hypospadias, Human milk, Endotoxins, PM2.5

For each assignment, chose one of the three general topic areas. Find two research articles in EHP on that topic. Submit a critical review of both articles.

Grading criteria for critical review.

1. Describe the research hypothesis, methods, and results (30 pts)
2. Critique the hypothesis and study design (30 pts)
3. Discuss how you would test the hypothesis differently (30 pts)
4. Clarity, grammar, and page limitation (10 pts)
5. If 2 articles are not reviewed (-10 pts)

Group Presentations. Students will take part in group projects that focus on critical issues in environmental health. The students will select a topic, review primary literature and government documents, and develop a presentation that introduces the rest of the class to the topic and integrates the concepts as appropriate from the first part of the class (i.e. using the tools of toxicology, epidemiology, laws, policies and regulations, risk assessment, exposure assessment to identify hazards and health effects, public health and environmental prevention and intervention activities, and communication issues). Dates for the presentations are listed on the course schedule.

All groups need to be identified and an outline including individual responsibilities submitted for approval by **March 5, 2009 – BEFORE SPRING BREAK!!!**
Presentations will be held from March 26 though April 16.
Each group presentation will be 40 minutes long.
Each power point will be posted on the website by the end of the presentation day.
Four test questions will be submitted to Dr. Freeman at the time of the presentation and may be used on the 3rd test. **Attendance at group presentations is required**.

Environmental Health Concepts in Public Health Schedule

Topics	Class dates	Readings
I. Concepts, approaches and tools		
Class organization, ASPH exam	1/6	
Introduction	1/8	Maxwell 1-8
Toxicology - Dave Barber	1/13	Maxwell 9-28
Exposure Assessment and Monitoring	1/15	Maxwell 28-37
Epidemiology and Causality	1/20	Maxwell 37-49
Risk Assessment	1/22	Maxwell 49-56
Federal Laws, Risk Management & Communication	1/27	Maxwell 56-60
The Precautionary Principle and the EU	1/29	Maxwell 61-66
	2/3	**Test 1**
II. Environmental Health Topics		
Agriculture	2/5	Maxwell 217-248
Food protection and safety – Roberta Hammond	2/10	Maxwell 248-262
The indoor environment	2/12	Maxwell 306-319
Waste water management	2/17	Maxwell 263-280
Water supplies - Joe Delfino	2/19	Maxwell 280-288
Solid waste, Hazardous Waste	2/24	Maxwell 288-298
Ambient air pollution	2/26	Maxwell 99-130
	3/3	**Test 2**
Industrial environment	3/5	Maxwell 175-197
Spring Break	**3/8-3/15**	
Occupational health, OSHA & NIOSH	3/17	Maxwell 198-215
Environmental Health and Safety	3/19	Maxwell 130-168
Multiple stressors/Global health	3/24	Maxwell 319-329
III. Other EH areas (group presentations)		
MRSA	3/26	Maxwell 67-91
Arbovirus	3/31	
Red tide and Blue-green algae	3/31	Maxwell 92-97
The built environment	4/2	Maxwell 298-305
Climate change	4/7	Maxwell 120-130
Low level-radiation	4/7	Maxwell 130-174
POPs and PPCPs	4/9	Maxwell 182-187
Bioterrorism	4/14	
Chemical terrorism	4/14	
Environmental Justice	4/16	
	4/21	**Test 3**

Contributions to grade

Assignments	30%
Test 1	20%
Test 2	20%
Test 3	20%
Group project	10%

	Grades
A	90-100
B+	85-89
B	80-84
C+	75-79
C	70-74
D+	65-69
D	60-64
F	< 60

Statement of University's Honesty Policy

Academic Integrity – Students are expected to act in accordance with the University of Florida policy on academic integrity (see Graduate Student Handbook for details).
As a member of the University of Florida community, each of us is bound by the academic honesty guidelines of the University and the Code of Student Conduct, printed in the Student Guide and published on the University website. The Honor Code states: "We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity." Cheating, plagiarism, other academic dishonesty or conduct violations in any form is unacceptable and inexcusable behavior that can result in dismissal from the College and/or University. If you have any questions or need any clarifications whatsoever, please ask your instructor.

Policy related to class attendance or other work

You are expected to attend and be prepared to participate in all class sessions and participate in discussions and activities. Please notify your instructor immediately if you are unable to attend. Personal issues with respect to class attendance or fulfillment of course requirements will be handled on an individual basis. **There will be no "make-up exams" without an official medical or similar emergency.** There are no "extra-credit" activities.

Statement related to accommodations for students with disabilities
If you require academic accommodations, you must first register with the Dean of Students' Office. The Dean of Students' Office will provide you with documentation that you must provide to me as the faculty member for this course at the time you request the accommodation. The College and the instructor are committed to providing reasonable accommodations to students with special needs in order to assist students in their coursework.

Counseling and mental health services: Students in need of counseling and mental health services are encouraged to explore the Student Health Care Center, http://www.shcc.ufl.edu , (352)-392-1161, or the University of Florida Counseling Center, http://www.counsel.ufl.edu , (352)-392-1575