

ENV 380 SENIOR SEMINAR IN ENVIRONMENTAL SCIENCE, Spring 2010

An interdisciplinary seminar devoted to the analysis of selected environmental problems.

PREREQUISITE: Senior standing or permission of the Environmental Science Committee. 2 s.h.

RATIONALE: A seminar based on, and taking advantage of, the common core of courses taken by biology, chemistry and geology majors concentration in environmental science. At this level, the possibilities and advantages of interdisciplinary integration need to be considered in the solution of specific problems.

OBJECTIVES: At the end of this course, students should be able to do the following:

1. Develop interdisciplinary research teams with emphasis on organization and implementation of interdisciplinary problem-solving.
2. Compile the results of research on environmental problems which can be used as the basis for subsequent seminars.
3. Use effectively, classic literature of environmental science and contemporary research articles from selected journals.
4. Comprehend and work effectively with the administrative structure of environmental management at the local, state and national levels.
5. Understand the various fields and careers within the scope of environmental science.

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Office Hours: Mon. 1:00-2:00; Wed. 9:00-10:00, 1:00-2:00 ; Thurs. 9:00-10:00, 1:00-:200

Dr. Carol Mapes, mapes@kutztown.edu Office: Boehm 245, (610) 683-4308
Office Hours: Mon.11:00-noon, 1:30-2:30; Tue. 1:00-2:00; Wed. 1:30-2:30; Thurs. noon-1:00

COURSE GRADE

Resume and Cover Letter	100 pts. (11.1%)
Class Participation During Article Presentations	100 pts. (11.1%)
1 Update on Assigned Readings	50 pts. (5.6%)
Leading Class Discussion and Prep of Focus Questions	100 pts. (11.1%)
Selected Topic Article Presentation	100 pts. (11.1%)
Term Paper	200 pts. (22.2%)
Oral Presentation of Term Paper	200 pts. (22.2%)
Class Participation During Selected Topic & Term Paper Presentations	<u>50 pts. (5.6%)</u>
	900 pts.

NOTE: Late assignments will lose 10 percentage points per week or fraction thereof.

ATTENDANCE: Attendance is required for all sessions and will be recorded. If you have an absence which is due to a legitimate excuse that would be approved by this University and by both of the professors, you must submit a written and verifiable explanation for the absence (i.e. note from your Medical Doctor; note from your coach). If the excuse for the absence is then considered legitimate, it will not count against your record.

TEXT: Newton, Dillingham, Choly *Watersheds 4 ISBN 0-534-52126-6, Handouts*

SENIOR COMPS: Required with passing grade (C or better) for graduation. Not part of the course grade!

Senior Comps – General Exam, 75 pt. Multiple choice

Senior Comps – Track Specific, 50 pt. (25 pts. for questions & 25 pts. for essay)

Note: You need 60% on general exam to pass. You need an overall 60% on the track specific exam to pass. You will be shown questions you missed. You may retake either exam once per semester.

TENTATIVE SCHEDULE OF TOPICS

<u>Session</u>	<u>Date</u>	<u>Topic</u>
1	Jan. 20	Introduction, Term Paper Topics, Selected Topics, Academic Honesty, etc.
2	Jan. 25	Cover Letter and Resume (Career Services)
3	Jan. 27	Resume II and Job Searching Strategies (Career Services)
4	Feb. 1	The Interview (Career Services)
5	Feb. 3	Library Resources
6	Feb. 8	Chapter 1 (Watersheds 1 Handout) Story of Love Canal* RESUME IS DUE (Submit 2 copies)
7	Feb. 10	Chapter 3 (Watersheds 1 Handout) Chernobyl * COVER LETTER IS DUE (Submit 2 copies)
8	Feb. 15	Chapter 5 (Watersheds 3) Disaster at Bhopal * TERM PAPER TOPICS DUE (Submit 2 copies)
9	Feb. 17	Chapter 1 (Watersheds 4) Global Climate Change
10	Feb. 22	Chapter 2 (Watersheds 4) Genetically Modified Organisms
11	Feb. 24	Chapter 4 (Watersheds 4) Antibiotic Resistance RESUBMITTED TERM PAPER TOPICS DUE
12	Mar. 1	Chapter 5 (Watersheds 4) Wreck of Exxon Valdez ARTICLES ON SELECTED TOPICS DUE
13	Mar. 3	Chapter 7 (Watersheds 4) Chlorine Sunrise
-	Mar. 8	SPRING BREAK
-	Mar. 10	SPRING BREAK
14	Mar. 15	Chapter 8 (Watersheds 4) Population Dilemma
15	Mar. 17	Chapter 9 (Watersheds 4) Fueling the World
16	Mar. 22	Papers and Presentations (Dr. Mapes and Dr. Palkendo)
17	Mar. 24	TBA
18	Mar. 29	Senior Comps – General Exam, Multiple Choice
19	Mar. 31	Senior Comps – Track Specific
20	Apr. 5	Student Presentations
21	Apr. 7	Student Presentations
22	Apr. 12	Student Presentations
23	Apr. 14	Student Presentations
24	Apr. 19	Term Paper Presentations
25	Apr. 21	Term Paper Presentations
26	Apr. 26	Term Paper Presentations (Presented Papers due May 3)
27	Apr. 28	Term Paper Presentations (Presented Papers due May 3)
		Date of Final: Monday May 3 (2:00 pm) Term Paper Presentations and presented Papers due
		Date of Final: Monday May 3 (3:00 pm) Term Paper Presentations and presented Papers due

Any student who has a need for accommodation based on the impact of a disability should contact us privately to discuss the specific situation as soon as possible. Contact the Office of Human Diversity at 610-683-4108 or visit 215 Stratton Administration Building to coordinate reasonable accommodations for students with documented disabilities.

NOTES: 1. Your term paper topic should NOT be the same topic as your update topic or the topic you choose as your selected topic for the article presentation.

* 4-5 people will be chosen to prepare and present updates on each of the (*) topics. Each update will consist of approximately 500 words posted on Blackboard by midnight on the Thursday of the week before the date of the topic.

UPDATES:

Each student will be expected to provide a 500 word update for one of the starred issues on the course syllabus. Class coverage of these topics will start on February 8, 2010. Topics to update will be assigned randomly. You will be expected to summarize information from at least three relevant sources to update each of your assigned topics. Information from reliable Web sites can be used for updates. Each update should consist of approximately 500 words posted on Blackboard by midnight on the Thursday of the week before the date of the topic. You should include at least one thought-provoking question in your update. Your update should include properly cited sources and should also include a literature cited section. Make sure that you read the assigned readings for your topic carefully so that your update does not repeat information that is already covered in the reading. Your update will be an individual effort, and not a group effort. You will be expected to discuss the information provided in your specific update on the date the topic is discussed. In addition, all members of the class will be expected to read all updates and will be responsible for the information provided.

PREPARATION OF FOCUS QUESTIONS AND LEADING DISCUSSION

Two or three students will be assigned a topic from Watersheds 4 for this exercise. Each person will be responsible for preparing at least 5 carefully chosen focus questions for the assigned topic, and for leading the discussion associated with the questions that he or she wrote on the date specified on the syllabus. There should be a minimum of 10 total questions for topics assigned to 2 students and a minimum of 15 total questions for topics assigned to 3 students. There should be no duplicate questions or overlap in the content coverage of the questions for each topic. Students assigned to a particular topic should work together to come up with a coherent set of questions. The focus questions should cover material that is in the specific chapter that has been assigned. Focus questions must be provided to the class in the form of a handout to be distributed to the class members on the class meeting date prior to the discussion of the topic. If you provide us a copy of your handout one-week before you are expected to hand it out, we will have it copied. If you do not give us your handout one-week before you are expected to hand it out, you will be responsible for covering the costs of duplicating the copies. You will be graded on the quality, appropriateness, and comprehensiveness of your focus questions, as well as your ability to lead the discussion. The student-led discussions will cover the topics listed on the syllabus starting on February 17

SHORT PRESENTATION OF AN ARTICLE:

Each student will be expected to give a 10-minute PowerPoint presentation of an environmental article, with 5 minutes of questions to follow. The article should be from a primary source and should not be a review article. Information from a Web page is unacceptable. You must have your article ready to be approved by March 1. Please hand in a copy of your article to the instructors on that date for approval. Your paper will be put on reserve in the library. All members of the class will be expected to read the papers before class in order to be prepared for the 5 minute question and answer period. Each student's participation in class will be assessed and will constitute a portion of the final grade for the course as described on the syllabus. The topic that you choose CANNOT BE THE SAME AS YOUR TERM PAPER TOPIC OR YOUR UPDATE TOPIC. During your PowerPoint presentation, you will be expected to clearly describe the purpose of the research, briefly describe related background materials discussed in the paper, and clearly describe the methods, results, discussion, and conclusion(s). You should include slides of the data, and should provide an in-depth description of the tables and graphs of the paper. You should critique the paper by indicating the limitations of the methods and/or the data analysis techniques. You should suggest further areas of study or additional experiments that would help clarify the research area. You should provide two copies of a print-out of your PowerPoint presentation slides as a handout for the instructors. Your presentation will be limited to 10 minutes, so chose your article with this in mind and then time yourself when you practice your presentation . The short presentations will be scheduled starting on April 5. You will be assigned a time and date for your presentation.

TERM PAPERS AND PRESENTATIONS

ENV 380

SPRING 2010

The term paper should be from 10-15 pages of double-spaced text. It should include a minimum of 8 recent references, at least 3 of which should be primary references. Most of the references should be from within the last 2-3 years, with the rest not older than 5 years. You may use older references to support your paper if appropriate, but these will not be counted as part of the minimum requirement of 8 references. Information from Web Sites will not be counted as part of the minimal requirement for 8 references, unless you have been able to access full-text journal articles. The paper will be due one week after your oral presentation, unless you are presenting on April 26, April 28 or May 3, in which case it will be due on May 3.

Late papers will lose 10 percentage points per week or fraction thereof.

Term paper topics are due on February 15, 2010. You will be expected to hand in a sheet of paper (in duplicate) with the title of your topic and a listing of the references that you will be using. You should follow the accepted format for literature citations when listing your references and you should star the references that are primary. You may be asked to resubmit your topic and references. Resubmitted term paper topics are due by February 24, 2010.

Your term paper and presentation should be a **CRITICAL REVIEW** of a particular topic. You should present an overview of the topic based on information obtained primarily from review papers that you have read, and then you should present a critical review that includes at least three carefully chosen primary references on a particular aspect of your topic. The primary references or case studies could be chosen to present more than one side of an issue. You may find some papers that present the results of studies on a particular topic, but the conclusions reached in the studies are contradictory. For example some studies may provide evidence that a compound causes cancer in humans, while others find no correlation between the compound and cancer rates in humans. In such a case, you would critically compare and contrast the studies, paying particular attention to differences in the methods that were used to address the question. You should provide a critical analysis of the approaches used to reach conclusions. Your discussion of your primary references can be tied in with information gleaned from review articles. For example, you can cite the results of studies that you were unable to locate in the primary literature, but were reviewed in an article. In addition you could address the question of whether your critical analysis of conclusions reached in the case studies is in agreement with another author's critical review of the same topic.

Your paper should include a title page; table of contents; introduction; discussion (with subtopics); conclusion; and literature cited section. You should follow the approach that Dr. Mapes and Dr. Palkendo will cover in class, and refer to the handout on how to write a review paper. Make sure that you cite references in the text of your paper whenever appropriate using the "name-and year system", for example: (Smith, 1992). You should not use footnotes and should avoid direct quotes. All references listed in the literature-cited section should also be cited within the text of your paper. Be sure to follow the format for literature citations that is covered in the handout and was discussed in class.

Your PowerPoint presentation should be approximately 20 minutes long, with an additional 5 minutes for questions. You should provide copies of a print-out of your PowerPoint presentation slides as a handout for each member of the class. The handout should also contain a list of your properly formatted references. If you provide us a copy of your handout one-week before your presentation, we will make a sufficient number of copies for all in the class. If you do not give us your handout one-week before the presentation, you will be responsible for covering the costs of duplicating the copies for class distribution.

A Selection of Topics Presented in ENV 380 During Previous Semesters:

TOPICS ARE TOO GENERAL:

Integrated Pest Management

Population Control

Insect Resistance to Chemical Control

Environmental Effects of Alien Species Introductions

Bioremediation and Toxic Waste

Radon

TOPICS ARE LESS GENERAL THAN THOSE CITED ABOVE, BUT SHOULD STILL BE MORE FOCUSED:

Bioremediation – Oil Spills

The Use of Nematodes in the Biological Control of Insects

Control of Pest Insects with Insects

Genetic Engineering of Plants to Resist Invasion by Insects.

Use of Pheromones as a Biological Control in IPM

The Use of *Bacillus thuringiensis* in the Biological Control of Insects.

TOPICS THAT ARE SUFFICIENTLY FOCUSED:

The Effects of Zebra Mussels on the Great Lakes

Effects of Mount Pinatubo on Global Temperatures

Feasibility of Hydrogen as a Fuel for Automobiles

Lake Acidification & Its Effects on Brook Trout (*Salvelinus fontinalis*)

Heavy Metal Accumulation in *Typha latifolia* in Relation to Constructed Wetlands

DDT and Breast Cancer

Environmental Impact of the Valdez Spill

Environmental Effects of Sodium Chloride as a Highway Deicing Agent

Prospects of a Controversial Predator: The Gray Wolf Reintroduction in Yellowstone.

ENV 380: Senior Seminar in Environmental Science

Cover Letter

Due Wednesday, February 10, 2010

Many of you are or will soon be looking for employment. This assignment is designed to help you think through some employment possibilities, familiarize you with sources of job announcements, and begin taking steps toward applying for positions.

In this exercise, you are required to:

1. Find a job announcement that looks like a position you would like to apply for soon after graduation or an announcement related to further education. Look for these opportunities in a variety of venues: the KU Career Services Office, job bank sites on the internet, and company announcements (web sites or newspaper advertisements) are some suggestions. This job posting *cannot* be one you received from Kutztown faculty by e-mail. Select one announcement, make two copies of it, and use it for the remainder of the exercise.
2. Write an appropriate cover letter for the specific position you selected.

This exercise is due on Wednesday, February 10, 2010.

Please prepare collated and stapled copies of the following materials:

Two Copies: Cover Letter & Job Announcement
