INTRODUCTION TO ENVIRONMENTAL SCIENCE

Fall 2008
Monday, Wednesday, and Friday 2:15 PM – 3:05 PM
Instructor: John Senko, Assistant Professor of Geology and Environmental Science
Office hours: Room 216 Crouse Hall, Monday, Wednesday, and Friday (immediately after class), or by appointment.
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COURSE DESCRIPTION

Interdisciplinary analysis of our relationship with nature and dependence upon the environment, with emphasis on evaluation of current environmental problems and rational solutions.

REQUIRED TEXTBOOK

Environmental Science: A Global Concern, 10th edition. By W.P. Cunningham and M. Cunningham. McGraw-Hill, New York. ISBN 978-0-07-305138-3

LEARNING OUTCOMES

- Understand the basic scientifically-derived principals that underpin processes on Earth.
- Understand how life (including humans) interacts with, and is dependent upon the Earth.
- Understand the influence of human activities on the environment and strategies for mitigating negative impacts
- The ability to critically identify and evaluate environmental problems and solutions to those problems

SOAP BOX

It is vital for a democracy to be comprised of educated citizens who can critically evaluate policies of leaders and the policy decisions they make. An understanding of basic scientifically-derived principals that underpin Earth processes will allow citizens to make these critical evaluations.

COURSES REQUIREMENTS

- Complete reading assignments listed in the course calendar and provided in class
- Complete five quizzes, two exams, an environmental issues report, and final exam
- Quizzes (10 points each) will be administered throughout the semester and may be announced or unannounced, and may be administered at any point during the lecture session (i.e. at the beginning, middle, or end of lecture)
- Participate in class and small group discussions throughout the semester. While participation in class is not formally incorporated into the grade distribution, it may be used to "tip the scale" from one letter grade to another for borderline point percentages.

GRADE DISTRIBUTION

	points
Quizzes (5 throughout the semester)	50
Exam 1	100
Exam 2	100
Environmental Issues Report	100
Final Exam	150

A = 460-500 points; A- = 450-460 points
B+ = 435-449 points; B = 415-434 points; B- = 400-414 points
C+ = 385-399 points; C = 365-384 points; C- = 350-364 points
D = 300-349 points;
F ≤ 299 points

METHODS OF ASSESSMENT/GRADING SYSTEM

-Your letter grade will be determined based on the number of points you achieve as described in the "Grade Distribution" section above.

-Two non-comprehensive exams and one comprehensive final exam will be administered. Quizzes and exams will include short answer questions, multiple choice, true/false, and fill in the blank-style questions. Clearly written answers (with proper spelling of scientific terms) are of utmost importance, and illegibility/lack of clarity of answers will be at the discretion of the instructor.

-An "Environmental Issues Report" will be required. Each student will provide a two page (word processed, double-spaced, 12 point "Times New Roman" or "Times" font, 1-inch margins) written report critically evaluating an environmental issue reported in the printed media (e.g. newspaper, magazine, scientific journal). Articles must be full-length. "News briefs" are unacceptable. Online articles are not acceptable unless they can be traced to print media (e.g. an article that appears in the New York Times online edition). **A copy of the original article will need to be provided to me on October 13, 2008 at the beginning of lecture, and must include your name.** It also must be fully referenced (e.g. author, publication date, title of article, title of periodical) in the critique. **Critiques will be due December 1, 2008 at the beginning of lecture.** I encourage you to consider environmental issues on the local, national, and global scales. Reports should define the issue, address the basic scientifically-derived principals behind the issue, environmental impacts, proposed or implemented solutions to the problem, and the advantages or limitations of those solutions. I discourage you from oversimplifying problems and solutions. Keep in mind that big problems will require big/comprehensive solutions. For instance, curbing global carbon dioxide emissions will require a more comprehensive plan than simply riding your bike to class (though that helps). Finally, I encourage you to seek articles focusing on solutions to environmental problems.

-Extra credit is not available for this course, except for the final lecture session, which will be a class-wide discussion on the topic of "The Environment and Society." Up to ten bonus points will be available for participation in this discussion. The specific requirements for achieving these points will be discussed in the lecture prior to the final lecture of the semester.

POLICY REGARDING MAKE-UP EXAMS AND QUIZZES
Make-up exams and quizzes will be given only if the student can provide **acceptable** documentation explaining their absence (e.g. doctor's excuse), which must be dated and signed on official letterhead. Acceptable documentation must be provided prior to or within 24 hours following the missed quiz or exam. Make-ups must be completed within one week of absence and will be at the discretion of the instructor.

YOUR OTHER RESPONSIBILITIES
-Lecture overheads will be distributed via email the morning before lecture. It will be your responsibility to recover those materials should you wish to use them during lecture.
-Back up ALL of your work.
-Check your email frequently for class announcements

ACADEMIC INTEGRITY
The University of Akron considers academic dishonesty to be an extremely serious offense. Please familiarize yourself with the University of Akron's policy here:
http://www.uakron.edu/studentlife/sja/SJAaca.php

COURSE CALENDAR

Lecture	Date	Scheduled Topic	Reading
1	25-Aug	Introduction to course	
2	27-Aug	Defining the Environment	Chapter 1
3	29-Aug	Fundamentals of Science	Chapter 2
	1-Sep	No Class (Labor Day)	
4	3-Sep	Matter & Energy	Chapter 3
5	5-Sep	Energy	Chapter 3
6	8-Sep	Energy	Chapter 19, 20
7	10-Sep	Earth Processes: Solid Earth	Chapter 14
8	12-Sep	Earth Processes: Atmosphere & Climate	Chapter 15
9	15-Sep	basic units of matter and concentration	Chapter 3
10	17-Sep	molecules, ions, and solubility	
11	19-Sep	Reactions and Stiochiometry	
12	22-Sep	Chemical bonds	
13	24-Sep	Energy from chemical reactions	
14	26-Sep	Redox reactions	
15	29-Sep	Redox reactions	
16	1-Oct	Fun with chemical reactions	
	3-Oct	Exam 1	
17	6-Oct	Cells	Chapter 3
18	8-Oct	Metabolism	Chapter 3
19	10-Oct	Genetics	Chapter 3
20	13-Oct	Biological redox processes & nutrient cycling the carbon cycle	Chapter 3
21	15-Oct	Biological redox processes & nutrient cycling nitrogen and sulfur cycles	Chapter 3
22	17-Oct	Biological redox processes & nutrient cycling other elements	Chapter 3
23	20-Oct	Evolution of the biosphere	Chapter 4
24	22-Oct	Evolution of the biosphere	Chapter 4
25	24-Oct	Evolution of the biosphere	Chapter 4
26	27-Oct	Communities and biodiversity	Chapter 4
27	29-Oct	Communities and biodiversity	Chapter 4
28	31-Oct	Biomes	Chapter 5
29	3-Nov	Population biology	Chapter 6
30	5-Nov	Biodiversity	Chapter 11
	7-Nov	Exam 2	
31	10-Nov	Air pollution	Chapter 16
32	12-Nov	Water Pollution	Chapter 18
33	14-Nov	Food and Agriculture	Chapter 9
34	17-Nov	Solid, Toxic, and Hazardous Waste	Chapter 21

35	19-Nov	Toxicology	Chapter 8
36	21-Nov	Pest Control	Chapter 10
37	24-Nov	Preserving Landscapes	Chapter 12
38	26-Nov	Restoration Ecology	Chapter 13
	28-Nov	No Class (Thanksgiving Break)	
39	1-Dec	Urbanization and Sustainable Cities	Chapter 22
40	3-Dec	Environmental Policy, Law, and Planning	Chapter 24
41	5-Dec	Class Discussion: environment and society	Chapter 25