Introduction to Environmental Science
Lecture: T TH 10-10:50am in BH 105
Lab: F 2-4:50pm in BH 109 or 307

PROFESSORS

Dr. Chris Habeck (Biology)
Boehm 113
610-483-4318
habeck@kutztown.edu
Office Hours:
M 11:00 am – 12:00 pm
T 9:00 am – 11:00 am
Th 1:00 pm – 3:00 pm

Dr. Jacob Sewall (Geology)
Boehm 422
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sewall@kutztown.edu
Office Hours:
M 10:00 – 12:00 pm
W 10:00 – 12:00 pm
T 9:20 – 9:50 am
Th 9:20 – 9:50 am

Dr. Julie Palkendo (Chemistry)
Boehm 316
610-483-4442
palkendo@kutztown.edu
Office Hours:
M & W 12:30 – 1:30 pm
T 1:00 – 2:00 pm
W 9:30 – 10:30 pm
F 11:00 – noon or by appt

Required Textbook

Withgott, J. and M. Laposata. 2012. Essential environment: the science behind the stories. 5th Edition. San Francisco: Pearson Benjamin Cummings.

Course Philosophy & Objectives

Humans are an integral part of the Earth's environment: we rely on the environment for our basic needs, and our actions directly impact the environment (and, therefore, us). Thus, it's easy for us to argue that this class—and your major—is one of the most important on campus!

The class is co-instructed by a biologist, a geologist and a chemist, so the topics are divided accordingly to primarily introduce subjects that will be covered in the 200-level environmental science classes. However, environmental science is a fundamentally interdisciplinary subject, and within each of these units we will be touching on environmental ethics, justice, policy, law, economics, and other disciplines that are part of environmental science.

This course is not designed to cover all aspects of environmental issues—the class is much too short for that. And it is not designed to cover basic skills and knowledge in science (scientific method) or specific scientific disciplines (biology, chemistry, geology)—you receive that information in the other introductory classes. Rather, this class is designed to introduce you to some fundamental concepts of environmental science, expose you to processes and places that manage and influence our environment, and provide a forum for discussing environmental issues. You will learn environmental problem-solving skills and apply them to environmental issues in our surrounding community. Ultimately, we hope you leave this class equipped with some information about environmental issues facing our community and world, and inspired to do something about it.

Upon successful completion of this course you should be able to:

1. Differentiate between environmental science, ecology and environmentalism.
2. Distinguish between the causes and effects of environmental deterioration.
3. Discuss the role of the ecological interactions in environmental science.
4. Apply the fundamentals of population biology to population analysis and human population growth.
5. Discuss the ethical premises of exploitationism, traditional conservationism, preservationism, and Leopoldian stewardship and attempt to develop a personal environmental philosophy.
6. Discuss and differentiate non-renewable and renewable energy sources.
7. Describe basic soil types and the processes effecting their formation and erosion.
8. Discuss the exploration, production, transportation and environmental impact of fossil fuels.
9. Describe basic chemical reactions relevant to environmental problems.
10. Discuss the environmental effects caused by industrial, agricultural and mining processes.
11. Recognize the environmental impact of the disposal of solid and hazardous wastes.

Tentative Grading

Grades in this course will be based on the items listed below. Specific details on the format and expectations for exams will be provided by each instructor. Please let us know if there are problems with participation in group work—taking credit for work that is not your own is considered a violation of academic honesty (see below).

Graded Items	Points	Percent
Exams (3)	210	50
Labs and Assignments (~12)	120	29
Sustainability Projects	65	15
Participation	25	6
Total	420	

Grading Scale:
A: ≥93% **and completion of all work**
A-: 90-92%
B+: 87-89%
B: 83-86%
B-: 80-82%
C+: 77-79%
C: 70-76%
D = 60-69%
F = <60%

Attendance & Late Policy

Attendance is expected for all lectures and lab activities. The material covered and emphasized in class will be the basis for the exams, and therefore attendance is critical to succeed in this class. Absences from lecture and lab will be reflected in your participation grade (which is determined at your instructors' discretion). Make-up exams and assignments will be given *only* by prior arrangement or in the case of genuine, officially documented emergencies. **Late assignments will be graded with a 10% penalty for each calendar day the work is late and will not be accepted if more than one week overdue. Missed exams will also be graded with a 10% penalty for each calendar day that the instructors are not contacted. You forfeit the opportunity to make-up the exam if you do not contact any instructor within five calendar days of the original exam date.**

Etiquette & Expectations

You are expected to be courteous and respectful of everyone in the class throughout the semester. When one person is talking, you should be quiet and attentive. Showing up to class late or leaving early is a disruption to the class and will result in a deduction of points. Cell phones should be turned off and put away during class. Use of cell phones for any reason during class will result in penalty of an unexcused attendance. At numerous times during the semester, we will be listening to guest speakers and touring outside facilities. Please be courteous, respectful, and engaged during the tours and presentations. If we witness disruptive behavior or any disrespect to people or nature, you may lose points for the lab.

Academic Honesty

Strict accordance with the University policies concerning plagiarism, cheating, etc. is expected. This does not preclude discussing readings and assignments – we do want you all talking and bouncing ideas off one another! However, all work that is turned in must be your own unless we explicitly state that collaboration on a project is expected. If collaboration occurs, then all contributors must be properly acknowledged. Failure to acknowledge the work of others is considered academic dishonesty (see http://conduct.dept.kutztown.edu/acadhonesty.aspx); all students involved in a case of academic dishonesty will either fail the assignment or fail the course. Additionally, any information used in an oral or written presentation that is not from your own original research or is not likely to be common knowledge among your audience must be cited. 100% academic integrity is expected at all times.

Communication

Feel free to contact us with any questions or concerns about the course. We welcome the opportunity to discuss environmental science, research, internships, careers, and life with you! You can contact us most easily via e-mail or in person during our office hours. Periodically, we may email the entire class to

address logistical or other issues outside of class. For these communications, we will send an email to your KU e-mail address. If you do not use KU e-mail for your e-mail, please configure your e-mail to forward all KU messages to your preferred e-mail provider. D2L will be used as a repository for all pertinent information (syllabus, readings, grades) in this course.

Support Services

If you have already disclosed a disability to the Disability Services Office (215 Stratton Administration Building) and are seeking accommodations, please feel free to speak with us privately so that we may assist you. If you have an injury sustained during military service including PTSD or TBI, you are also eligible for accommodations under the ADA and should contact the Disability Services Office.

Beyond the Classroom

We encourage you to become active in environmental issues on campus and/or in the surrounding community. If you're not already a member, consider joining the Environmental Action Club, an organization that sponsors environmentally-related volunteer activities. There are also many local non-profit organizations that can always use help—please come chat with us if you are looking for volunteer, internship, or research opportunities!

Although this is an introductory class, it is never too early to start considering internships and career options in your field. Some of the better websites with useful information include:

Society for Conservation Biology – http://www.conservationbiology.org/jobs/
Conservation Job Board – http://www.conservationjobboard.com/
Environmental Career Opportunities – http://www.ecojobs.com/
Ecological Society of America – http://www.esa.org/careers_certification/employment.php
EcoEmploy – http://www.ecoemploy.com/jobs/
Ecolog listserv archives – https://listserv.umd.edu/archives/ecolog-l.html
Texas A&M's Wildlife & Fisheries job board – http://wfscjobs.tamu.edu/job-board/

You may also want to directly explore the websites of some governmental (e.g, National Park Service, U.S. Environmental Protection Agency, U.S. Fish & Wildlife Service) and non-governmental (e.g., The Audubon Society, The Nature Conservancy, Sierra Club, The World Wildlife Fund, Defenders of Wildlife) environmentally-related national and international organizations. If you are interested in working for Pennsylvania's Department of Environmental Protection, you will likely have to take the State Civil Service exam before applying to jobs or internships, so start thinking about this early. We encourage you to explore the world of opportunities available to you, and ask us if you seek specific advice.

	Date		Probable Topic	Lecturer	Chapter
1	T	19-Jan	Intro & Interdisciplinary Perspectives of Env Sci	all	
2	Th	21-Jan	Environmental Science: Scope & Purpose	Habeck	1
L1	F	22-Jan	Sustainability Project Introduction	all	
3	T	26-Jan	Overview of Ecological Concepts	Habeck	3,4
4	Th	28-Jan	Environmental Economics	Habeck	5
L2	F	29-Jan	Human Population & Growth	Habeck	
5	T	2-Feb	Greenhouse Gases & Combustion Rxns	Palkendo	14
6	Th	4-Feb	Climate Change: Physical Factors & History	Sewall	14
L3	F	5-Feb	Organic Content of Culm Analysis	Palkendo	
7	T	9-Feb	Climate Change: Present & Future	Sewall	14
8	Th	11-Feb	Human Evolution & Climate Change	Habeck	14
L4	F	12-Feb	Climate Change & Species Phenology	Habeck	
9	T	16-Feb	**Exam 1**	Palkendo	
10	Th	18-Feb	Air Pollutants: Part I	Palkendo	13

L5	F	19-Feb	KU Air Monitoring Station	Palkendo	
11	T	23-Feb	Air Pollutants: Part II & Acid Rain	Palkendo	13
12	Th	25-Feb	Fossil Fuels	Sewall	15
L6	F	26-Feb	KU Steam Plant	Sewall	
13	T	1-Mar	Nuclear Rxns & Radioactivity	Palkendo	15
14	Th	3-Mar	Nuclear Power	Sewall	15
L7	F	4-Mar	Radioactivity Lab	Palkendo	
	T	8-Mar	SPRING BREAK		
	Th	10-Mar	SPRING BREAK		
	F	11-Mar	SPRING BREAK		
15	T	15-Mar	Alternative Energy	Sewall	16
16	Th	17-Mar	Municipal Waste	Sewall	17
L8	F	18-Mar	Service Learning - Trash Clean-up	Sewall	
17	T	22-Mar	Global Biodiversity	Habeck	8
18	Th	24-Mar	Restoration Ecology	Habeck	9
L9	F	25-Mar	Lehigh Gap Nature Center Field Trip	Sewall	
19	T	29-Mar	**Exam 2**	Palkendo	
20	Th	31-Mar	Ecology & Economics of Invasive Species	Habeck	
L10	F	1-Apr	Invasive Species & Deer Overabundance	Habeck	
21	T	5-Apr	Agriculture & Soils	Sewall	7
22	Th	7-Apr	Pesticides & Environmental Health	Palkendo	7, 10
L11	F	8-Apr	Agriculture and Soils Lab	Sewall	
23	T	12-Apr	Land Use/Cover & Human Footprint	Sewall	9, 18
24	Th	14-Apr	Watershed Ecology	Habeck	p 21-22
L12	F	15-Apr	Watershed Assessment	Habeck	
25	T	19-Apr	Water Quality Indicators	Palkendo	12
26	Th	21-Apr	Water Pollutants & Treatments	Palkendo	12
L13	F	22-Apr	Wastewater Treatment Plant Field Trip	Palkendo	
27	T	26-Apr	Water Resources	Sewall	12
28	Th	28-Apr	Interdisciplinary Perspectives II	all	
L14	F	29-Apr	Sustainability Presentations	all	
29	T	3-May	**Exam 3 at 11 AM**	Habeck	