

Environmental Studies 2: Introduction to Environmental Science

Fall 2011 / 006 Steele Hall

MWF: 12:30 p.m.–1:35 p.m.; X-Hour: Tu 1:00p.m.–1:50p.m.

Instructor: Professor Andy Friedland 111 Steele Hall; 6-3609; andy.friedland@dartmouth.edu
Office Hrs: W 2-3 PM, Th 1:30-2:30 PM & by appointment

TA office hours by appointment:

Justin Richardson, Grad Earth Sciences, 110 Steele; Justin.B.Richardson.GR@dartmouth.edu

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Required Readings

Environmental Science: Foundations and Applications, 1st edition, by Friedland, Relyea and Courard-Hauri. WH Freeman, 2011.

Description of Course

The purpose of this course is to present an introduction to environmental science, which is a study of patterns and processes in the natural world and how they are modified by human activity. We will examine the physical, biological, chemical and other natural sciences at a moderate level of intensity. This is an *introduction* to a wide variety of environmental topics, many of which you can explore in greater depth in other courses. There will be two 65-minute exams (during class time) and a final exam. Two environmental problem sets will be assigned to give hands-on experience in examining environmental issues, making calculations, and reaching conclusions. Your completion of an energy audit of a home you are familiar with will help you gain a greater understanding of the energy dynamics in a system that you already know fairly well.

Grading

		<u>Total Points</u>
2 Problem Sets	10 pts each	20 Pts
1 Energy Audit	30 pts	30
2 Hour Exams	100 pts each	200
1 Final Exam		<u>150</u>
		400 Pts

Due dates for problem sets and the energy audit are on the following page. **Problem Sets are due at 3 PM in 113 Steele Hall** on their respective due dates. One point will be subtracted for every hour that an assignment is late. Problem Set help sessions will be held on the night before each due date from 5-7 PM in 008 Steele. **The Energy Audit is due at 11 AM on Tuesday, November 29.**

*•The **Academic Honor Principle** applies to all Dartmouth students at all times. I recognize the importance of the Honor Principle and expect you to do so as well.*

*•I encourage students with **disabilities**, including "invisible" disabilities like chronic diseases, learning disabilities, and psychiatric disabilities to discuss with me after class or during office hours appropriate accommodations that might be helpful to them.*

*•I realize that some students may wish to take part in **religious observances** that occur during this academic term. Should a religious observance conflict with your participation in the course, please come speak with me before the end of the first week of the term to discuss appropriate accommodations.*

All course material including exams from previous years and a copy of the syllabus are posted on the course Blackboard site.

ENVS 2, Fall 2011: Lecture and Reading Schedule

Ch or p. = Chapters or pages in Environmental Science by Friedland et al. If there is no reading for a given date, it means the reading from the date before is relevant to that lecture as well.

<u>Date</u>	<u>Description</u>	<u>Reading</u>
09/21	Introduction: Environmental Science & Sustainability	Ch 1
09/23	Matter and Conservation of Energy	Ch 2 up to p. 43
09/26	Global Change and Global Systems	Ch 2 from p. 43 to end
09/28	Energy and Ecosystems	Ch 3 PS #1 Due
09/30	Earth-Surface Energy Cycle	Ch 4, less focus on p. 101-114
10/03	Organisms, Biodiversity and Change	Ch 5, less focus on p. 128-136
10/05	Populations and Communities	Ch 6, less focus on p. 160-165
10/07	Human Populations	Ch 7
10/10	Humans as Drivers of Change	
10/12	<u>FIRST HOUR EXAM</u>	
10/14	Water	Ch 9
10/17	Ecosystems and Disturbance	p. 261-265 & 269-272
10/19	The Soil Ecosystem	Ch 8, from p. 219 to end
10/21	Sustainability and Human Systems Guest Lecture <u>Professor Anne Kapuscinski</u>	Ch 11
10/24	Agriculture	
10/26	Energy Supply and Sources	Ch 12 PS #2 Due
10/28	Non-renewable Energy Systems	
10/31	Renewable Energy Systems Guest Lecture <u>Professor Tim Smith</u>	Ch 13
11/02	Energy Connections	p. 376-379
11/04	Water Pollution	Ch 14
11/07	Air Pollution	Ch 15
11/09	<u>SECOND HOUR EXAM</u>	
11/11	Solid Waste and Recycling	Ch 16 + p. 490-493
11/14	Global Change Mechanisms	Ch 19
11/16	Habitat Loss and Climate Change Guest Lecture <u>Professor Doug Bolger</u>	Ch 18
11/18	Global Change and the Polar Regions Guest Lecture <u>Professor Ross Virginia</u>	
11/21	Human Health	Ch 17
THANKSGIVING BREAK		
11/28	Economics and Sustainability Guest Lecture <u>Professor DG Webster</u>	Ch 20
11/29	Energy Audit Due at 11 a.m.	
11/30	State of the Earth	

The Final Exam will be given on Saturday, December 3, 2011 at 8 AM. Location TBA. Please note: It may not be possible for me to allow hour exams or the final exam to be taken at times other than the scheduled day and time; if you suspect you will have a conflict, speak to me in person by Monday, September 26.