

## **E162 Environment and People**

Spring 2017

### **Instructor:**

Dr. Shahzeen Attari

Assistant Professor, SPEA

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### **Teaching Assistant:**

Jade Parsons

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### **Class meeting: 11:15am - 12:30pm Mondays and Wednesdays at SPEA 272**

Environment and People is an introductory course that examines how humans interact with their environment. This course covers multiple topics, centered-around human dimensions of environmental change. The overarching objective is to develop an understanding of our impact on the planet and possible solutions to environmental degradation. Our emphasis during the course will be on understanding how our social and economic systems affect (a) the environment and (b) the way we make decisions concerning the environment. This course is designed to expose students to a breadth of topics where people and environment intersect. In every one of these topics, I expect students to answer the following questions:

- What is the nature of the human-environment interaction?
- Who are the stakeholders involved?
- What should be done, and why?
- What are the benefits and costs of implementing a policy change?
- What are the repercussions?
- How are the benefits and costs spread among the stakeholders (think through from both sides of the issue on this, benefits for one stakeholder may incur costs for another)?
- Will the expected outcome produce the desired results?
- Will the expected outcome be fair?
- If not, are there other policy changes that would lead to more optimal and fair outcomes?

These questions usually do not have “correct” answers. These questions are designed to make you think critically about different aspects of each problem at hand.

### **Familiarity with the subject**

This is an introductory class and I assume no particular level of expertise beyond a science course of some sort in high school. I will assume you have all had an introduction to simple economic ideas, but I will not assume that you have remembered all the details. All concepts will be reviewed before we go on to apply them, and all scientific concepts will be taught from the ground up. I do hope you start reading the newspaper to learn about what is happening in the world and keep up to date on environmental/social issues. We will be discussing new relevant news at the beginning of every class.

## Academic integrity

You know the drill. No form of academic dishonesty will be tolerated. This course requires individual integrity and professionalism from all students. Should there be any suspicions of academic dishonesty, you will be notified immediately and asked to explain your actions. If academic dishonesty is proven, you will receive a grade of zero for the work; repeat offense is grounds for failure in the course

## Special needs

I am happy to accommodate any special academic needs. Please let me know by the first week of classes if you have any special needs.

## Plagiarism

In college courses, we are continually engaged with other people's ideas: we read them in texts, hear them in lecture, discuss them in class, and incorporate them into our own writing. As a result, it is very important that we give credit where it is due. So what exactly is plagiarism? Plagiarism is using others' ideas and words without clearly acknowledging the source of that information. All of the following are considered plagiarism:

- turning in someone else's work as your own
- copying words or ideas from someone else without giving credit
- failing to put a quotation in quotation marks
- giving incorrect information about the source of a quotation
- changing words but copying the sentence structure of a source without giving credit
- copying so many words or ideas from a source that it makes up the majority of your work, whether you give credit or not

Most cases of plagiarism can be avoided by citing sources. Simply acknowledging that certain material has been borrowed, and providing your audience with the information necessary to find that source, is usually enough to prevent plagiarism. Plagiarism is considered academic dishonesty and work that is found to be plagiarized will receive a grade of zero; repeat offense is grounds for failure in the course. Visit [www.plagiarism.org](http://www.plagiarism.org) for more details

## Submitting HW and essays:

You will need to submit a hard copy and an electronic copy of your assignments unless specified in the assignment. Bring your hard copy to class on the day your assignment is due. Turn in an electronic copy via Canvas before the class period (not afterwards). Should there be any suspicions of plagiarism in your work, you will be notified immediately and asked to explain your actions. If plagiarism is proven, you will receive a grade of zero for the work you turned in; repeat offense is grounds for failure in the course.

## Materials

There is no text for the course. There will be assigned readings from journal articles, books, websites and the like. Readings and handouts will be posted at least one week before the class on the Canvas website. Please read the material before coming to class. Your notes will be important study aids for the course.

## Classroom Work

Most days will include some lecture and some single or group work. During lecture, I assume you will be contributing your attention and intelligence at the time. Please visit the restrooms, Facebook, Twitter etc. before class or wait until after class adjourns. Group work will necessarily entail discussion and I expect the classroom will get fairly loud and that your attention will be on your discussion. Please try to tie up your group discussion quickly when I indicate time is up, so that we can review group conclusions with the whole class.

## Participation

Class participation is an important part of the course. In fact, it is vital. As a result, participation will be graded. We will make note of your comments for your participation grades. Please note that point allocation is based on our *subjective* assessment of the value of your comments. Ask good questions and be part of the discussion. If you do not participate freely, I will cold call on you to facilitate discussion (modified Socratic method). Grades will be added at each exam time. Please note that if you are nervous about speaking in class, you can also visit the TA or the Professor during office hours to get participation points for the course. Don't just come and expect points. Come prepared to ask questions and discuss interesting aspects of what we are studying in class.

## Late assignments

Late assignments will be downgraded 10% per class day. If an emergency arises, communicate with me as soon as possible (generally BEFORE the assignment is due) and I will generally waive the penalty in valid reasonable cases.

## Grading for course

You will have 5 homework assignments: 1 group assignment, 2 individual calculation based assignments, and 2 individual short papers (2-4 pages), a group presentation, and 3 exams. Please do not ask for extra credit assignments. There is no final exam in this class.

Participation	5%	Updated at each exam
Hw 1: Market paper	10%	23-Jan
Group presentations	5%	25-Jan; outline due
Hw 2: Energy calculations	10%	6-Feb
Exam 1	10%	15-Feb
Hw 3: Water calculations	10%	6-Mar
Exam 2	12%	22-Mar
Hw 4: Point of view	10%	10-Apr
Hw 5: Individual memo	14%	Rough outline: 20-Mar Final: 19-Apr
Exam 3	14%	26-Apr

*Exams are cumulative.* The grading scale for this class will be the following: min of 97 A+, min of 93 A, min of 90 A-, min of 87 B+, min of 83 B, min of 80 B-, min of 77 C+, min of 73 C, min of 70 C-, min of 67 D+, min of 63 D, min of 60 D-, and less than 60 F. I reserve the right to adjust this scale (i.e., lower it) to account for variability in testing results.

## Schedule

- 9-Jan           **1. Introduction to instructors, research, and a case study of Dubai, United Arab Emirates**
- 11-Jan           **2. Introduction to economics, perfect markets, and market failures**  
**Discussion groups pick a good/market for short research (discussion time scheduled for end of class)**  
Group exercise: How perfect are these markets?  
Principles of Macroeconomics, Chapter 1, by Fred Gottheil
- 16-Jan           **No Class: Martin Luther King Day**
- 18-Jan           **3. Goods and services, ownership and values, and sustainability**  
Living beyond our means: Natural Assets and human well-being (MEAR)  
Fischer, B. Defining an ecosystem
- 23-Jan           **4. Introduction to common-pool resources**  
**Hand in HW 1: On markets (in class and online submission)**  
Get group presentation topic. Begin to prepare research and presentation.  
Hardin, G. (1968). The tragedy of the commons. *Science*, 162(3859), 1243-1248.  
Ostrom, E. (2009). A general framework for analyzing sustainability of social-ecological systems. *Science*, 325(5939), 419-422.
- 25-Jan           **5. Philosophical debates about sustainability**  
**Presentation groups: choose and hand in 3 potential topics to TA**  
Davidson, C. Philosophical Debates
- 30-Jan           **6. Understanding energy use and energy perceptions**  
**In class energy calculations. Bring a calculator.**  
Smil, V Ch 1. Energy  
Larrick, R. P., & Soll, J. B. (2008). The MPG Illusion. *Science*, 320(5883), 1593-1594. Also see: <http://www.mpgillusion.com/>  
Attari, S. Z., DeKay, M. L., Davidson, C. I., & Bruine de Bruin, W. (2010). Perceptions of energy consumption and savings. *Proceedings of the National Academy of Sciences*, 107(37), 16054-16059.  
[Test your knowledge using CNN Money quiz](#)  
Helpful websites: [EPA's EERE](#), [LBNL's Standby energy consumption](#), and [Michael Bluejay](#)
- 1-Feb           **7. Resources of the earth: Valuing biodiversity**  
Kolbert, E. (2009) [The sixth extinction?](#) The New Yorker  
E. O. Wilson (2007) [On saving life on earth](#), TED talk  
E. O. Wilson (2016) [The global solution to extinction](#), The New York Times

- 6-Feb      **8. Terrestrial resources - mining, forestry: Effects of price supports on resource industries**  
*Hand in HW 2: On Energy (only hardcopy needed)*  
 World Resources Institute: Environmental and Social Impacts of Mining  
[Understanding Persistent, Bioaccumulative and Toxic substances \(PBTs\)](#)
- 8-Feb      **9. Sustainability in Bloomington – Jacqui Bauer visits class**
- 13-Feb     **10. Globalization, the World Trade Organization, and the environment**  
 Rodrik, Dani (2007) [How to save globalization from its cheerleaders](#)
- 15-Feb     **EXAM 1**
- 20-Feb     **11. Human demography - Carrying capacity**  
*Hand in topic for individual final memo to TA*  
[Population growth explained with Ikea boxes by Hans Rosling](#) (TED talk)  
 Play with [Gapminder tool](#)  
 Cohen, J. (1998) How many people can the earth support? NYT  
 Cohen, J. (2011) [Seven billion](#). NYT
- 22-Feb     **12. Feeding the world**  
**Group presentations** occur throughout remainder of semester beginning today.  
**Group 1**  
 Foley, J. [Feeding 9 billion](#), National Geographic  
 Bittman, M. (2013) [How to feed the world](#), NYT
- 27-Feb     **13. Protecting our resources: taxes vs. standards**  
**Group 2**  
 Parry, I. and Pizer, W., [Emissions trading versus CO2 taxes versus standards](#),  
 Resources for the future
- 1-Mar      **14. Water resources**  
**Group 3**  
 Inskeep, B. D., & Attari, S. Z. (2014). The water short list: The most effective actions U.S. households can take to curb water use. *Environment*, 56(4), 4-15.  
 Attari, S. Z. (2014). Perceptions of water use. *Proceedings of the National Academy of Sciences*, 111(14), 5129-5134.
- 6-Mar      **15. Understanding water conservation in Bloomington with Nolan Hendon the City of Bloomington Utilities Conservation and Energy Resource Manager**  
*Hand in HW 3: Water in your life (only hardcopy needed)*
- 8-Mar      **16. Environmental Racism**  
**Group 4**  
[Flint's water crisis and the 'troublemaker' scientist, The New York Times Magazine](#) (2016)  
[A question of environmental racism in Flint](#), NYT (2016)
- 13-Mar     **No Class: Spring Break**

- 15-Mar **No Class: Spring Break**
- 20-Mar **17. Environmental refugees**  
**Hand in rough outline of hw 5 individual topic memo to TA**  
**Group 5**  
 Brown, L. (2011) Raging storms, rising seas swell ranks of climate refugees, NYT  
 Davenport, C & Robertson, C. [Resettling the first American 'climate refugees'](#), NYT
- 22-Mar **Exam 2**
- 27-Mar **18. Understanding risk and compassion**  
**Group 6**  
 Slovic, P. (1987). Perception of risk. *Science*, 236(4799), 280-285.  
 Slovic, P. (2007). If I look at the mass I will never act": Psychic numbing and genocide. *Judgment and Decision Making*, 2(2), 79-95
- 29-Mar **19. Nuclear Energy**  
**Hand in Hw 4: A personal point of view**  
**Group 7**  
 Pacala, S., & Socolow, R. (2004). Stabilization wedges: Solving the climate problem for the next 50 years with current technologies. *Science*, 305, 968-972.  
 Nuclear energy fact sheet
- 3-Apr **20. Renewable energy**  
**Group 8**  
 Renewable energy fact sheet
- 5-Apr **21. Ozone**  
**Group 9**  
[Airnow](#),  
[The hole truth](#), Australian Broadcasting Corp
- 10-Apr **22. Climate Change Science with Dr. Ben Brabson (Professor of Physics)**  
 Global Environmental Change: An Atmospheric perspective, Ch 1  
 The Global Atmosphere by Horel and Geisler  
 Lacis, A. A., Schmidt, G. A., Rind, D., & Ruedy, R. A. (2010). Atmospheric CO<sub>2</sub>: principal control knob governing Earth's temperature. *Science*, 330(6002), 356-359.
- 12-Apr **23. Climate change and human behavior**  
**Group 10**  
 CRED climate change communication guide at <http://guide.cred.columbia.edu/>
- 17-Apr **24. Air quality**  
**Group 11**  
 What is the air quality today? <https://www.airnow.gov/>

- 19-Apr      **25. IU Office of Sustainability - Andrew Predmore visits our class**  
Hand in Hw 5: *Final individual memo*  
Read: *What is education for?* By David Orr <http://www.context.org/iclib/ic27/orr/>
- 24-Apr      **26. Morality and Ethics**  
Group 12  
Hand in Hw 5: *Final individual memo*  
Pope Francis (2015) [Laudato Si'](#)  
Prisoners dilemma sheet
- 26-Apr      **EXAM 3**