

ADVANCED ENVIRONMENTAL AND RESOURCE ECONOMICS

AREC 440
MWF 10:00 – 10:50am

Spring 2017
Mil Science 115

Instructor: Jordan Suter

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Office Hours (B-306 Clark): Tues. 2–3pm, Thurs. 10– 11am and by appointment

Description:

This course uses microeconomic techniques to rigorously explore decision-making and policy applied to environmental and natural resource problems. Specifically, the course will focus on economic issues related to the development of effective policy for managing open space land, water resources, energy and climate. The course will involve a focus on solving analytical problems in the field, critical thinking as it pertains to the development of policy, and research on the tradeoffs associated with solutions to challenging environmental and natural resource problems.

Course Objectives:

- (1) Assess the economic impacts of specific policies aimed at addressing environmental and natural resource challenges.
- (2) Critically assess competing environmental policies and projects by assessing overall economic implications and distributional consequences.
- (3) Interact with practitioners working in the primary course content areas (land use, water, and energy/climate).
- (4) Demonstrate writing and research dissemination skills through work on group projects and presentations.

Readings:

The readings will come from content made available through Canvas. The readings that are required for a given class are indicated in the course schedule and will be announced in class. All documents, including the course schedule, problem sets, and exams will be posted on Canvas.

Grading (out of 100%):

Problem sets (20%) – You will be given one week to complete each problem set. You are allowed to work on the assignment with one other student. If you choose to work with another student, *please turn in one assignment* with each of your names at the top. I expect each individual to fully understand all solutions provided. Problem sets are due at the beginning of class and late assignments will be assessed a 10 point reduction for each day that they are late, however, assignments will no longer be accepted once I have provided the solutions.

Policy projects (30%) – You will have three opportunities to conduct policy analyses during the semester, coinciding with the primary subject areas covered in the course. The groups will be shuffled for each of the assignments so that you have the opportunity to work with different class members. For each project assignment, groups will be asked to turn in a four to six page summary report of their work. In addition, groups will present their results to the class. Information about the specific assignments will be provided two weeks in advance of when each specific project is due.

Midterm exams (20%) – The exams will include short answer and essay questions related to problem sets, readings and lectures. If you have a medical excuse or family emergency and cannot attend an exam, you must let me know at least 48 hours in advance and provide proper documentation.

Final exam (25%) – The final exam will be comprehensive and feature short answer and essay questions. The exam will take place during the exam period.

Participation (5%) – I expect students to attend every class having completed the assigned readings and prepared to contribute. Your participation in all class discussions is valued.

Final grades will be based out of 100 percent, weighted according to the values given above. Letter grades will be assigned using the following scale: A (100 – 90), B (89 – 80), C (79 – 70), D (69 – 60), F (59 and below). Pluses and minuses are possible for each letter grade of C and higher, and are awarded based on B+ (89 – 87), B (86 – 83), B- (82 – 80), etc.

Academic Integrity:

This course will adhere to the Academic Integrity Policy of the CSU General Catalog and the Student Conduct Code. I expect all work to be your own. Cases of plagiarism in written work will be taken seriously, so please familiarize yourself with CSU's guide to avoiding plagiarism (<http://writing.colostate.edu/guides/researchsources/understandingplagiarism/plagiarismoverview.cfm>).

Expectations and Feedback

I expect students to attend every class having done the assigned readings and prepared to contribute. It is also my expectation that you will be open-minded and considerate of the thoughts and ideas of all of your fellow classmates. In return, I will strive to conduct organized and insightful class sessions and to treat your intellectual work with fairness and impartiality.

Resources for Disabled Students:

If you have a documented disability and wish to discuss academic accommodations, please contact me as soon as possible to set up the appropriate arrangements. Please do not wait until the day before an exam to request accommodations. Further information - <http://rds.colostate.edu/students>

Course Outline:

I. Review of essential concepts

- Optimization, externalities, public goods, discounting

II. Land use and policy

- Spatial land use models (Ricardo, von Thunen), sprawl, open space conservation

III. Water resource economics

- Allocation of surface water, groundwater dynamics and externalities, water quality and challenges associated with non-point source pollution

IV. Energy and climate change

- Conventional and alternative energy production, energy demand and efficiency, policies for reducing greenhouse gas emissions, offsets, and adaptation

Course Schedule:

Week	Topic	Assignments	Readings
Jan. 16 - 20	Background		Neilsen 2009
Jan. 23 - 27	Background		H&O Ch.6
Jan. 30 -Feb. 3	Background	PS #1 (1/30)	Harrington & Morgenstern 2004
Feb. 6 - 10	Land		H&O Ch.3 p.57-73
Feb. 13 -17	Land	Exam 1 (2/15)	Hanley et al. 2012
Feb. 20 -24	Land		Messer 2006, Banzhaf 2000
Feb. 27 - Mar. 3	Land	Report 1 (3/1), Pres. 1 (3/3)	Ferraro 2011
Mar. 6 -10	Water	PS 2 (3/10)	Hanemann 2004
Mar. 13 - 17	Break		
Mar. 20 -24	Water		Wines NYT 2013
Mar. 27 - 31	Water	Exam 2 (3/29)	Olmstead 2009
Apr. 3 - 8	Water	Report 2 (4/5), Pres. 2 (4/7)	
Apr. 10 -14	Energy	PS 3 (4/14)	Schmalensee 2011
Apr. 17-21	Energy		Gillingham et al. 2009
Apr. 24-28	Energy	PS 4 (4/26)	Newell et al. 2014; Williams 2015
May 1-5	Energy	Report 3(5/1), Pres. 3 (5/3)	Darmstadter 2012

Background

H&O – J. Hartwick and N. Olewiler, The Economics of Natural Resource Use, Second Edition, 1998.

W. Neilsen 2009, “Must-have math tools for graduate study in economics”

W. Harrington and R. Morgenstern 2004, "Economic incentives versus command and control."

Land

N. Hanley et al. 2012, “How should we incentivize private landowners to produce more biodiversity?”

H.S. Banzhaf 2000, “Economics at the fringe: Non-market valuation studies and their role in land use plans in the US”

K. Messer 2006, "The conservation benefits of cost-effective land acquisition"

P. Ferraro et al. 2011, “Conditions associated with protected area success in conservation and poverty reduction”

Water

M. Hanemann 2004, “The economic conception of water”

M. Wines 2013, “Wells dry, fertile plains turn to dust”

S. Olmstead 2009, "The economics of water quality"

Energy

R. Schmalensee 2011, "Evaluating policies to increase the generation of electricity from renewable energy"

K. Gillingham et al. 2009, "Energy efficiency economics and policy"

R. Newell 2014, "Carbon markets past, present, and future"

R. Williams et al. 2015, “The impacts of a US carbon tax across income groups and states”

J. Darmstadter 2015, "Adaptation: an essential, but lagging, part of global warming policy "