

**AAE 643 FOUNDATIONS OF ENVIRONMENTAL AND RESOURCE ECONOMICS  
SPRING 2017**

**INSTRUCTOR:**

Prof. Daniel J. Phaneuf (pronounced *fa-neff*)  
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Location: Taylor Hall B30

Lectures: Tues/Thurs 2:30pm to 3:45pm

Office hours: 11:30am to 12:30pm Tues/Thurs and by appointment

**CAPSULE STATEMENT:**

This course will provide a survey of historical topics and contemporary research questions in environmental and resource economics. Focus areas include foundational models of human/environment interaction, definition and evaluation of the suite of environmental policy instruments, measuring environmental costs and benefits, and examining natural resource use.

**LEARNING OBJECTIVES:**

This course is designed to provide graduate students with interest in environmental and resource economics with a broad overview of the field's historical development, and its place in contemporary economics and policy. Students will come away with an appreciation for the breadth of topics that have been investigated, the analytical and applied tools used by environmental economists, and the field's evolution from niche area into mainstream economics. Although the class will use quantitative methods, the emphasis is not on the mastery of technique. Instead, students will gain knowledge of the techniques that need to be mastered, in order to pursue research in the various topical areas.

**PREREQUISITES:**

Students should have familiarity with micro theory at the level of AAE 635 and applied econometrics at the level of AAE 636.

**TEXTBOOK AND READINGS:**

The main textbook will be

Daniel J. Phaneuf and Till Requate, *A Course in Environmental Economics: Theory, Policy, and Practice*, Cambridge University Press, 2017.

You can order the book from Amazon or directly from the CUP website (make sure you order the paperback version). If there are availability problems I will distribute PDFs of the early chapters.

I will augment the book with journal articles designed to illustrate the contemporary application of ideas covered in the text.

**COURSE REQUIREMENTS**

Your course grade will be based on your performance on one in-class exam, the final exam, several homework/reading summary assignments, a writing assignment, and participation in class. The following percentages will be used to determine your final mark:

Midterm Exam	25 percent
Final Exam	25 percent
Homework/reading assignments	20 percent
Paper	20 percent
Participation in class	10 percent

The midterm exam will be sometime around week 9 of the semester. The final exam is scheduled for **Wed 10 May at 12:25 pm**. I may, however, move the exam into the last week of class.

Homework assignments will be a mixture of analytical exercises, empirical analysis, and short reviews of current literature.

For the paper you will prepare a 10-15 page literature critique on a contemporary empirical topic that we will agree on together. A literature critique is more than a literature review in that it should go beyond simply describing what has been written on a topic. I will give you more specific guidance during the semester, but here are a few examples of things your paper should cover:

- Historical motivation for the topic
- Identification of key legacy and recent papers
- Summary of theoretical and empirical knowledge
- Data sources and methods used in the area
- Discussion of limitations in the current literature
- Suggestions for research that would fill existing knowledge gaps.

If you are taking another course that also requires a paper, I encourage you to select a topic that can be used for both assignments. I will set up a meeting with each of you during the first half of the semester to discuss ideas for topics. A first draft of your paper will be due by week 14 of the semester, with the final draft due the last day of class.

## GRADING

I will determine your grades based on the following percentages, which will arise from the numerical scores I assign to each of the components:

$\geq 93\%$	A
$< 93\% \ \& \ \geq 88\%$	AB
$< 88\% \ \& \ \geq 83\%$	B
$< 83\% \ \& \ \geq 78\%$	BC
$< 78\% \ \& \ \geq 70\%$	C
$< 70\% \ \& \ \geq 60\%$	D
$< 59\%$	F

## PRELIMINARY TOPICS AND TIME ALLOCATIONS

The following describes the preliminary topic list and my estimates on the amount of time we will spend. All that follows should be considered preliminary – I will make adjustments as the semester progresses. Most of the journal articles are recent empirical contributions that we will discuss after covering background material from the textbook.

### **Economics and the Environment (2 weeks)**

Phaneuf and Requate, Ch. 1, 2, 3

Linn et al. (2014). “Regulating greenhouse gases from coal power plants under the Clean Air Act,” *Journal of the Association of Environmental and Resource Economists* 1: 97-134.

Hughes and Podolefsky (2015). “Getting green with solar subsidies: evidence from the CA initiative,” *Journal of the Association of Environmental and Resource Economists* 2: 235-275.

### **Environmental Policy (5 weeks)**

Phaneuf and Requate, Ch. 4, 5, 7, 8, 9

Grainger and Kolstad (2010). “Who pays a price on carbon?” *Environmental and Resource Economics* 46: 359-376.

Ferris et al. (2014). “The effect of environmental regulations on power sector employment: phase I of the title IV SO<sub>2</sub> trading program.” *Journal of the Association of Environmental and Resource Economists* 1: 521-553.

Evans, M. (2016). “The Clean Air Act watch list: an enforcement and compliance natural experiment.” *Journal of the Association of Environmental and Resource Economists* 3: 627-665.

Fowlie and Perloff, (2013). “Distributing pollution rights in cap and trade programs: are outcomes independent of allocation?” *Review of Economics and Statistics* 95: 1640-1652.

Weber et al. (2016). “Does federal crop insurance make environmental externalities from agriculture worse?” *Journal of the Association of Environmental and Resource Economists* 3: 707-742.

### **International Topics and Climate (2 weeks)**

Phaneuf and Requate, Ch. 12, 21

Aldy and Pizer (2015). “The competitiveness impacts of climate change mitigation policies.” *Journal of the Association of Environmental and Resource Economists* 2: 565-595.

Kellenberg and Levinson (2014). “Waste of effort? International environmental agreements.” *Journal of the Association of Environmental and Resource Economists* 1: 135-169.

Olmstead and Sigman (2015). “Damming the commons: an empirical analysis of international cooperation and conflict in dam location.” *Journal of the Association of Environmental and Resource Economists* 2: 497-526.

Aichele and Felbermayr (2012). “Kyoto and the carbon footprint of nations.” *Journal of Environmental Economics and Management* 63: 336-354.

Burke and Emerick (2016). "Adaptation to climate change: evidence from US agriculture." *American Economic Journal: Economic Policy* 8: 106-140.

### **Non-Market Valuation (4 weeks)**

Phaneuf and Requate, Ch. 14-19

Muelenbachs et al. (2015). "The housing market impacts of shale gas development." *American Economic Review* 105: 3633-3659.

Currie et al. (2015). "Environmental health risks and housing values." *American Economic Review* 105: 678-709.

Taylor et al. (2016). "Disentangling property value impacts of environmental contamination," *Journal of Urban Economics* 93: 85-98.

Carson et al. (2014). "Consequentiality: a theoretical and experimental exploration of a single binary choice." *Journal of the Association of Environmental and Resource Economists* 1: 171-207.

Kling, C., D. Phaneuf, and J. Zhao, (2012). "From Exxon to BP: has some number become better than no number?" *Journal of Economic Perspectives* 26(4): 3-26.

### **Health and the Environment (2 weeks)**

Phaneuf and Requate, Ch. 20

Rau et al. (2015). "Early exposure to hazardous waste and academic achievement: evidence from a case of environmental negligence." *Journal of the Association of Environmental and Resource Economists* 2: 527-563.

Wrenn et al. (2016). "Unconventional shale gas development, risk perceptions, and averting behavior: evidence from bottled water purchases." *Journal of the Association of Environmental and Resource Economists* 3: 779-817.

### **Energy and the Environment; other Empirical Questions (time allowing)**

Allcott, H. and M. Greenstone, (2012). "Is there an energy efficiency gap?" *Journal of Economic Perspectives* 26: 3-28.