

**AAE 643 FOUNDATIONS OF ENVIRONMENTAL AND RESOURCE ECONOMICS
SPRING 2021**

*DEPARTMENT OF AGRICULTURAL AND APPLIED ECONOMICS
UNIVERSITY OF WISCONSIN- MADISON*

INSTRUCTOR:

Prof. Daniel J. Phaneuf (pronounced *fa-neff*)
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Location: virtual/synchronous to start
Lectures: Tues/Thurs 8am to 9:15am
Office hours: by appointment

CREDIT HOUR DETERMINATION:

This is a 3 credit course. This class meets for two 75-minute class periods each week over the spring semester and carries the expectation that students will work on course learning activities (reading, writing, problem sets, studying, etc.) for about 3 hours out of classroom for every class period. The syllabus includes more information about meeting times and expectations for student work.

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.

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 exam, several reading summary assignments, a paper, and participation in class. The following percentages will be used to determine your final mark:

Midterm Exam	30 percent
Article summaries/assignments	30 percent
Paper	30 percent
Participation in class	10 percent

The midterm will be a 24-hour, take-home exam that I will pass out around two-thirds of the way through the semester (~week 10/week of 29 March). Assignments will focus on journal articles that I will ask you to read prior to classes. For example, I may have you post brief answers to a handful of open-ended questions that will help prepare you to participate in discussion about the research.

For the paper you will prepare a 10 to 15-page literature critique on a contemporary empirical topic of your choice and to which I give my OK. 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
- Identification assumptions/evaluation of validity of the estimation approaches
- Discussion of limitations in the current literature
- Suggestions for research that would fill existing knowledge gaps.

The paper will be due on Friday 30 April (last day of spring semester classes). You will submit a topic statement around halfway through the semester (~week 8/week of 15 March).

ASSESSMENT

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

ACADEMIC INTEGRITY

By enrolling in this course, each student assumes the responsibilities of an active participant in UW-Madison's community of scholars in which everyone's academic work and behavior are held to the highest academic integrity standards. Academic misconduct compromises the integrity of the university. Cheating, fabrication, plagiarism, unauthorized collaboration, and helping others commit these acts are examples of academic misconduct, which can result in disciplinary action. This includes but is not limited to failure on the assignment/course, disciplinary probation, or suspension. Substantial or repeated cases of misconduct will be forwarded to the Office of Student Conduct & Community Standards for

additional review. For more information, refer to <https://conduct.students.wisc.edu/academic-integrity/>

ACCOMMODATIONS OF STUDENTS WITH DISABILITIES

McBurney Disability Resource Center syllabus statement: “The University of Wisconsin-Madison supports the right of all enrolled students to a full and equal educational opportunity. The Americans with Disabilities Act (ADA), Wisconsin State Statute (36.12), and UW-Madison policy (Faculty Document 1071) require that students with disabilities be reasonably accommodated in instruction and campus life. Reasonable accommodations for students with disabilities is a shared faculty and student responsibility. Students are expected to inform faculty [me] of their need for instructional accommodations by the end of the third week of the semester, or as soon as possible after a disability has been incurred or recognized. Faculty [I], will work either directly with the student [you] or in coordination with the McBurney Center to identify and provide reasonable instructional accommodations. Disability information, including instructional accommodations as part of a student's educational record, is confidential and protected under FERPA.” <http://mcburney.wisc.edu/facstaffother/faculty/syllabus.php>

DIVERSITY AND INCLUSION

Institutional statement on diversity: “Diversity is a source of strength, creativity, and innovation for UW-Madison. We value the contributions of each person and respect the profound ways their identity, culture, background, experience, status, abilities, and opinion enrich the university community. We commit ourselves to the pursuit of excellence in teaching, research, outreach, and diversity as inextricably linked goals. The University of Wisconsin-Madison fulfills its public mission by creating a welcoming and inclusive community for people from every background – people who as students, faculty, and staff serve Wisconsin and the world.” <https://diversity.wisc.edu/>

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 adjust as the semester progresses and almost certainly replace some of the readings with newer offerings. Journal articles will typically be 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 SO₂ 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.