

University of Florida
Food and Resource Economics Department

AEB6933 Environmental Economics

Spring Term 2019

3 Credit Hours

MWF: 11:35-12:45 pm

Classroom: McCarty B 3124

Instructor and Contact Information

Instructor: Dr. Xiang Bi
Office: 1105 McCarty Hall B
Phone: (352) 294-7671
Office Hours: MWF, 3:00-4:00pm
E-mail: xiangbi@ufl.edu

If posted office hours are not convenient, please feel free to e-mail me in advance for an appointment. When e-mailing me, please use AEB6933 in the subject line

Graduate Student Services Coordinator

Ms. Jess Herman; 1170 McCarty Hall A; (352) 294-7622, Email: jherman@ufl.edu

General Course Information

Learning Objectives

The students will be provided with the opportunity to learn theory and application of economics to address environmental problems in this graduate level course.

Students are expected to develop deep understanding of the core of environmental economics- concepts associated with externalities, cost benefit analysis, and methods developed to estimate the values of environmental changes; and develop an appreciation for the breadth of the field. Specifically, the students should be able to display a command of existing knowledge through summarizing and interpreting the existing literature; to apply existing knowledge through identifying and formulating research questions on their own; and to be able to interpret data and present theoretical derivation and/or empirical identification in a convincing manner.

Prerequisite

This course is intended for graduate students in agricultural economics, economics or related fields. A background in advanced microeconomic theory and Econometrics (AEB6106, AEB6553/AEB 7571, or equivalent) is required for this course. Students with questions about their preparation should consult with the instructor.

Course Structure

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The course follows a seminar format and the ***instructor's lecturing will be kept to a minimum***. The daily activities include: student's presentations, discussions, questions and answers, problem sets and lectures (if necessary). I expect active participation from all students in discussion of the textbook material and journal articles on the syllabus. A significant part of your grade will be based on contribution to discussion.

Textbook

Required text: *A Primer on Nonmarket Valuation*. [aka "Primer"] **Second edition**. Eds. Patricia A. Champ, K.J. Boyle, and Thomas C. Brown. 2017

Recommended Text: *A Course in Environmental Economics. Theory, Policy, and Practice*. Eds. Daniel J. Phaneuf and Till Requate. 2017. **(Highly recommended)**.

E-learning Canvas

Handouts, readings, assignments, and announcements will be kept on the course canvas website. To access E-Learning, you will need your Gatorlink username and password. E-Learning Canvas can be accessed via <https://lss.at.ufl.edu/>. If you are having difficulties accessing Canvas, please contact the UF Computing Help Desk by calling (352) 392-HELP or via e-mail helpdesk@ufl.edu. You will need your UFID when contacting them. Please note that the E-learning Canvas site might not be operational until the end of the first week of the semester.

Grading Summary

The final grade will be constructed according to:

Item	Percent
Paper summary	5%*7=35%
Literature review on selected topic	10%
Referee reports	5%*2 =10%
Research proposal	5% presentation+5% written proposal
Research paper	5% presentation+10% paper
In-class participation and attendance	20%

Paper Summary

Each student is expected to write a one-page summary on one journal paper for each one of the 8 topics in the reading list and submit the summaries on Canvas (under discussions).

- The summary should include a discussion of the main points of the article (What is the research question? What is the research method? What are the main findings?)
- The summary should highlight the specific contribution of the paper (methods or policy relevance)

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- And discuss weaknesses or limitations that can be addressed by future studies.

Literature Review on Selected Topics

This literature review will be based on the paper summaries submitted by the whole class on Canvas. Each student is expected to give one ~15 minute oral presentations on **one set of the topic** listed in the reading list. These presentations will be peer-evaluated and I will post the grading rubric on the e-learning website.

The presentation should:

- Use PowerPoint/ Prezi/Latex Beamer
- A good literature review should discuss
 - What have been learned from previous studies?
 - What are some of the main limitations or flaws in the previous studies?
 - What is the recent development in the literature on the related topics?
What are some of the challenges and research questions that can be addressed by future studies?

Referee reports

Each student must hand in two referee reports on two working papers. Those papers will be provided during the class and one paper will be from Part I and one paper will be from Part II. In the referee report, you will be asked to summarize your assessment on the paper, provide recommendation on revision, rejection or acceptance and provide specific comments and recommendations on further revisions. They are expected to be 1-2 pages.

Participation and Attendance

Each member of the class is expected to contribute to in-class discussion. Students **MUST** be active and courteous participants on discussion days. I will keep track of questions and comments offered by each student on those days.

I will also provide a few study questions for each topic and we will discuss these study questions at the end of the segment as review questions.

Additionally, you will be given ample opportunities to ask questions and provide feedback to the instructor and fellow students throughout the semester. Full participation credit requires meaningful and appropriate participation on **80%** of class meetings.

Research Proposal and Final Paper

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Each student will submit an individual research proposal following the presentation of the research proposal right after spring break. Each student will write a 15-20 page double-spaced **individual** research paper due at the end of the semester (April 30, 2019). The final paper will be graded based on how successful you are in applying material from the course to your chosen topic given your background. The final paper presentation (~20 minutes) will be conducted at the end of the course.

Presentations on research proposal and final paper will be peer-evaluated the grading rubric will be posted on the e-learning website. Each presentation accounts for 5% of your grade.

The presentation on your proposed research topic should include:

- What is the motivation of your research and why do we care? (The so-what question)
- What is your expected contribution after you have summarized the existing literature?
- Explain your data source

The presentation on your final paper should include the additional items:

- What is your (proposed) methodology and justification?
- What are the (expected) results?

Grading Scale

A	93% or above	A-	90-92.9%		
B+	87-89.9%	B	83-86.9%	B-	80-83.9%
C+	77-79.9%	C	73-76.9%	C-	70-73.9%
D+	67-69.9%	D	63-66.9%	D-	60-63.9%
E	Less than 60%				

Note: Written assignments should be submitted through course website or email. You will not receive full credit with late submission. Particularly, you will face a 40% deduction if your submission is late by one day; and 60% deduction if late by two days. Submissions that are late for more than two days will receive zero credits.

Weekly Schedule

Week 1 (1/7):

Introduction

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Cropper, M. and Oates, W. 1992. Environmental economics: A survey. *Journal of Economic Literature* 30(2): 675-740. (pp.675-700).

Other references

Holcombe, R.G. and Sobel, R.S. 2001. Public policy toward pecuniary externalities. *Public Finance Review* 29: 304.

Coase, R.H. 1960. The problem of social cost. *Journal of Law and Economics* 3: 1-44.

Weeks 2-3 (1/14-1/23):

Topic 1- Choice of Instruments

1. Weitzman, M. L. 1974. Prices vs. quantities. *Review of Economic Studies* 41 (4): 477-491.
2. Stefan, A. and Coria, J. 2013. Prices vs quantities with multiple pollutants. *Journal of Environmental Economics and Management* 66 (1): 123-140.
3. Helfand, G. 1991. Standards vs. standards: The effects of different pollution restrictions. *American Economic Review* 81: 622-634.
4. Fullerton, D. and Kinnaman, T. 1996. Household responses to pricing garbage by the bag. *American Economic Review* 86: 971 – 84.
5. Cason, T.N. and Plott, C. 1996. EPA's new emissions trading mechanism: A laboratory evaluation. *Journal of Environmental Economics and Management* 32: 133-60.
6. Metcalf, G. E. 2009. Designing a carbon tax to reduce U.S. greenhouse gas emissions. *Review of Environmental Economics and Policy* 3: 63-83.

Week 4 (1/28):

Topic 2- Non-point Source Pollution, Voluntary and Information

7. Segerson, K. (1988). Uncertainty and incentives for nonpoint pollution control. *Journal of Environmental Economics and Management* 15(1), 87-98.
8. Segerson, K. and Micelli, T.J. 1998. Voluntary environmental agreements: Good or bad news for environmental protection? *Journal of Environmental Economics and Management* 36: 109 – 130
9. Benneer, S. and Olmstead, S.M. 2008. The impacts of the 'Right to Know': Information disclosure and the violation of drinking water standards. *Journal of Environmental Economics and Management* 56(2): 117–130.
10. Lyon, T.P. and Maxwell, J.W. 2003. Self-regulation, taxation and public voluntary environmental agreements. *Journal of Public Economics* 87(7-8): 1453-1486.

Weeks 5-7 (2/4-2/18):

Topic 3_Empirical Analysis on the Effects of Regulation

11. Jaffe, B. Peterson, S.R., Portney, P.R. and Stavins, R.N. 1995. Environmental regulation and the competitiveness of U.S. manufacturing: What does the evidence tell us? *Journal of Economic Literature* 33(1): 132-163.
12. Harrington, W., Morgenstern, R.D. and Nelson, P. 2000. On the accuracy of regulatory cost estimates. *Journal of Policy Analysis and Management* 19(2): 297-322.
13. List, J. A. Millimet, D.L., Fredriksson, P.G. and McHone, W.W. 2003. Effects of environmental regulations on manufacturing plant births: Evidence from a propensity score matching estimator. *Review of Economics and Statistics* 85(4): 944-952.
14. Berman E. and Bui, L. 2001. Environmental Regulation and Labor Demand: Evidence from the South Coast Air Basin. *Journal of Public Economics* 79(2), 265–295.
15. Morgenstern, R.D. Pizer, W. A. and Shih, J.S.. 2002. Jobs Versus the Environment: An Industry-Level Perspective. *Journal of Environmental Economics and Management* 43(3), 412–436.
16. Greenstone, M. 2002. The impacts of environmental regulations on industrial activity: Evidence from the 1970 and 1977 clean air act amendments and the census of manufactures. *Journal of Political Economy* 110(6), 1175-1219.
17. Walker, W.R. 2013. The transitional costs of sectoral reallocation: Evidence from the Clean Air Act and the workforce. *Quarterly Journal of Economics* 128 (4), 1787-1835.
18. Levinson, A. (2015). A direct estimate of the technique effect: changes in the pollution intensity of US manufacturing, 1990–2008. *Journal of the Association of Environmental and Resource Economists* 2(1), 43-56.
19. Becker, R. A., Pasurka Jr, C., and Shadbegian, R. J. (2013). Do environmental regulations disproportionately affect small businesses? Evidence from the Pollution Abatement Costs and Expenditures survey. *Journal of Environmental Economics and Management* 66(3), 523-538.
20. Gray, W.B., Shadbegian, R.J., Wang, C. and Meral, M., 2014. Do EPA regulations affect labor demand? Evidence from the pulp and paper industry. *Journal of Environmental Economics and Management* 68(1), pp.188-202.

Integrated Assessment

21. Muller, Z. and Mendelsohn, R. 2007. Measuring the damages of air pollution in the United States. *Journal of Environmental Economics and Management* 54(1): 1-14.

Week 7 (2/20):

Respond to Reviewer's Comments

22. Gibson, Matthew. 2018. Regulation-Induced Pollution Substitution. *Review of Economics and Statistics*. Forthcoming.
23. Bi, X. 2017. "Cleansing the air at the expense of waterways?" Empirical evidence from the toxic releases of coal-fired power plants in the United States. *Journal of Regulatory Economics* 51(1), 18-40.

Week 8 (2/25):

Topic 4- Empirical Analysis on Compliance

24. Stafford, S. L. 2002. The effect of punishment on firm compliance with hazardous waste regulations. *Journal of Environmental Economics and Management* 44(2), 290-308.
25. Earnhart, D. 2004. Regulatory factors shaping environmental performance at publicly-owned treatment plants. *Journal of Environmental Economics and Management* 48(1): 655-681.
26. Shimshack, J.P. and Ward, M. B. 2005. Regulator reputation, enforcement, and environmental compliance. *Journal of Environmental Economics and Management* 50 (2): 519-540.
27. Shimshack, J. P., and Ward, M. B. 2008. Enforcement and over-compliance. *Journal of Environmental Economics and Management* 55(1), 90-105.

Week 9(3/4):

Spring Break, Referee Report #1 Due

Week 10 (3/11):

Research Paper Proposal Presentation, Research Proposal Due

Week 11 (3/18):

Cost and Benefit Analysis and Valuation Theory

Lecture

Hanley, N. 1992. Are there environmental limits to cost benefit analysis? *Environmental and Resource Economics* 2(1): 33-59.

Cropper and Oates (1992): pp. 700-728

Other references

- R. Costanza et al. The value of the world's ecosystem services and natural capital. 1997. *Nature* 387: 253 – 260.
- M.L. Weitzman. 2001. Gamma discounting. *AER* 91(1): 260-271.

Topic 5- Travel Cost Method

28. Englin, J.E. and Shonkwiler, J.S. 1995. Estimating social welfare using count data models: An application to long-run recreation demand under conditions of endogenous stratification and truncation. *Review of Economics and Statistics* 77(1), 104–112.
29. Landry, C.E., Lewis, A.R., Liu, H., Vogelsong, H. 2016. Addressing onsite sampling in analysis of recreation demand: Economic value and impact of visitation to Cape Hatteras National Seashore. *Marine Resource Economics* 31(3), 301–322.
30. Haab, T.C. and McConnell, K.E. 1996. Count data models and recreation demand. *American Journal of Agricultural Economics* 78(1): 255-263.
31. von Haefen, R.H. and Phaneuf, D. J. 2003. Estimating Preferences for Outdoor Recreation: a Comparison of Continuous and Count data Demand System Frameworks. *Journal of Environmental Economics and Management* 45: 612-630.
32. Phaneuf, D. J., Kling, C. L., and Herriges, J. A. 2000) Estimation and welfare calculations in a generalized corner solution model with an application to recreation demand. *Review of Economics and Statistics* 82(1), 83-92.

Week 12 (3/5):

33. Alvarez, Sergio and Larkin, Sherry L. and Whitehead, John C. and Haab, Tim. 2014. A revealed preference approach to valuing non-market recreational fishing losses from the Deepwater Horizon oil spill. *Journal of Environmental Management* 145: 199-209.
34. Comment on “A revealed preference approach to valuing non-market recreational fishing losses from the Deepwater Horizon Oil Spill” and its “Corrigendum” by Alvarez et al.
35. Reply to “Comment on: A revealed preference approach to valuing non-market recreational fishing losses from the deepwater horizon oil spill and its corrigendum”
36. Timmins, C., and Murdock, J. 2007. A revealed preference approach to the measurement of congestion in travel cost models. *Journal of Environmental Economics and management* 53(2), 230-249.

Week 13 (4/1):

Topic 6- Hedonic and Sorting Models

37. Ihlanfeldt, K. and Taylor, L.O. 2004. Externality effects of small-scale hazardous waste sites: Evidence from urban commercial property markets. *Journal of Environmental Economics and Management* 47 (1): 117-139.
38. Pope. 2008. Do seller disclosures affect property values? Buyer information and the hedonic model. *Land Economics* 84(4): 551–572.
39. Bishop, K. and Timmins, C. 2018. Estimating Marginal Willingness to Pay Function Without Instrumental Variables. Working Paper.
40. Anselin and N. Lozano-Gracia. 2008. Errors in variables and spatial effects in hedonic house price models of ambient air quality. *Empirical Economics* 34:5-34.
41. Klaiber, H.A. and Phaneuf, D.J. 2010. Valuing open space in a residential sorting model of the Twin Cities. *Journal of Environmental Economics and Management* 60(2): 57-77.
42. Banzhaf, S. and Walsh, R.P.. 2008. Do people vote with their feet? An empirical test of Tiebout’s mechanism. *American Economic Review* 98(3): 843-863.

Week 14 (4/8):

Topic 7-Contingent Valuation and Choice Experiment

Review

Johnston, R. J., Boyle, K. J., Adamowicz, W., Bennett, J., Brouwer, R., Cameron, T. A., ... & Tourangeau, R. (2017). Contemporary guidance for stated preference studies. *Journal of the Association of Environmental and Resource Economists*, 4(2), 319-405.

43. Carson, R. T., Mitchell, R. C., Hanemann, M., Kopp, R. J., Presser, S., and Ruud, P. A. 2003. Contingent valuation and lost passive use: damages from the Exxon Valdez oil spill. *Environmental and Resource Economics* 25(3), 257-286.
44. Adamowicz, P. Boxall, M. Williams and J. Louviere. 1998. Stated preference approaches for measuring passive use values: Choice experiments and contingent valuation. *American Journal of Agricultural Economics* 80(1): 64-75.
45. Cummings, G. and Taylor, L.O. 1999. Unbiased value estimates for environmental goods: A cheap talk design for the contingent valuation method. *American Economic Review* 89(3): 649-665
46. Loomis, J. Kent, P., Strange, L., Fausch, K. and Covich, A. 2000. Measuring the total economic value of restoring ecosystem services in an impaired river basin: Results from a contingent valuation survey. *Ecological Economics* 33: 103-117.
47. Bateman, I. J., Day, B. H., Jones, A. P. and Jude, S. 2009. Reducing gain–loss asymmetry: A virtual reality choice experiment valuing land use change. *Journal of Environmental Economics and Management* 58(1): 106-118.

Week 15 (4/15):

Review

Second Referee Report Due

Presentation of Research Paper Presentation

Week 16 (4/22):

Presentation of Research Paper

Week 17 (4/29):

Final Paper Due

University Policies

Grades and Grade Points

For information on current UF policies for assigning grade points, see <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Absences and Make-Up Work

Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at: <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>.

Academic Honesty

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity." You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: **"On my honor, I have neither given nor received unauthorized aid in doing this assignment."**

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated.

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Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: <http://www.dso.ufl.edu/SCCR/honorcodes/honorcode.php>.

Software Use

All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

Online Course Evaluation Process

Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the quality of instruction in this course using a standard set of university and college criteria. These evaluations are conducted online at <https://evaluations.ufl.edu>. Evaluations are typically open for students to complete during the last two or three weeks of the semester; students will be notified of the specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results>.

Campus Helping Resources

Students experiencing crises or personal problems that interfere with their general well-being are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

University Counseling & Wellness Center, 3190 Radio Road, 352-392-1575, www.counseling.ufl.edu/cwc/

Counseling Services; Groups and Workshops; Outreach and Consultation; Self-Help Library; Training Programs; Community Provider Database

U Matter, We Care, 352-294-CARE. umatter@ufl.edu <http://www.umatter.ufl.edu/>

Career Resource Center, First Floor JWRU, 392-1601, www.crc.ufl.edu/

Services for Students with Disabilities

The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of

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Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation

0001 Reid Hall, 352-392-8565, www.dso.ufl.edu/drc/

Dr. Bi reserves the right to change the terms and dates stated in this syllabus at any time. Should there be any changes, notifications will be given in class and posted on eLearning Canvas in advance. It is solely the student's responsibility to stay informed of any changes. By enrolling in this course you are agreeing to the terms outlined in this syllabus.

I wish everyone a rewarding and productive semester!