

Natural Resource Economics

Econ/Envs 331
TR 1:30-2:45pm

Spring 2017
AJLC 201

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Office Hours: Tues. 3:00-4:30, Wed. 2:00-4:00, Thurs. 4:00-5:00, and by appointment

Course Description and Objectives:

Natural resource economics extends the field of economics to decisions related to extraction, allocation, and preservation of scarce natural resources such as fisheries, forests, water, and energy. We use analytical and computational techniques for solving dynamic resource optimization problems. To complement the resource optimization and modeling techniques, we investigate the economic foundations of policies that govern natural resource use and conservation through discussion of academic and policy-related literature. The objective is that by the end of the semester, you will understand how economists think about natural resource problems and the optimal balance between utilization and conservation, and you will be able to solve the types of dynamic optimization problems that resource economists face.

Prerequisites:

Intermediate Microeconomics (Econ 253 or equivalent) and Calculus (Math 133 or equivalent).

Readings and Course Documents:

The Blackboard system is the repository for all course-related documents. This includes assigned readings, problem sets, and course announcements. Readings will be assigned for each class from the required textbook listed below or made available through Blackboard based on the reading list provided.

Required Textbook: Conrad, J. M. 2010. *Resource Economics*. Second edition. Cambridge University Press. (ISBN: 9780521697675)

Grading:

10%	Reading feedback and participation	
20%	Problem sets	
20%	Midterm exam	<i>Thursday, March 16th (take-home)</i>
25%	Resource project	<i>Due Thursday, May 4th</i>
25%	Final exam	<i>Due Saturday, May 13th at 11am (take-home)</i>

Reading feedback and participation (10%): Most weeks a journal article, policy brief, or media article will be assigned for class. For six select readings, you will be expected to submit a written response that contains: (1) something you learned; (2) something you found unclear or unconvincing; (3) a discussion question related to the article for the class to consider. Your grade for this portion of the course is based on both your written responses as well as your participation in class.

Problem sets (20%): Four problem sets will be assigned throughout the semester. You are allowed to work on each problem set with one other student in the class. If you choose to work with another student, you must turn in one problem set with both of your names. Problem sets are to be turned in at the beginning of class, and late assignments will not be accepted under any circumstances.

Midterm exam (20%): The take-home midterm exam will be available after class on March 16th and must be returned by March 18th at 11:59pm. It will include short-answer and computational questions based on the assigned readings, problem sets, and lectures. There will be no make-ups for the exam. If you have a medical excuse or family emergency and cannot complete the exam, you must let me know at least 48 hours in advance and provide proper documentation.

Resource project (25%): The resource project provides an opportunity to investigate the economic incentives that influence a specific resource. You will work with one other student on the project, and your grade will be based on a five-to-eight-page paper as well as a 20-minute presentation. Each project should include a basic model of resource use, some background related to a policy that influences the incentives for resource use, and a prescription for how policy related to the resource should be altered.

Final exam (25%): The cumulative take-home final exam will be available starting on May 8th and must be completed by 11am on May 13th (the end of the scheduled exam time for this class). The material will be based on the assigned readings, problem sets, and lectures. An excused absence for the final exam will be handled according to the policy of the college and the Dean of Studies.

Expectations and Feedback:

I expect you to attend every class and to have done the assigned readings. I also expect you to help maintain an effective learning environment by being open-minded and considerate toward your fellow classmates and by refraining from texting, surfing the web, and other behavior that might be distracting. In return, I will strive to conduct organized and insightful class sessions and to treat you and your intellectual work with fairness and respect. I greatly value feedback related to the course subject matter, the lecture pace, and my teaching style. Feel free to talk to me in person, send me an email, or leave an anonymous note in my mailbox in the Department of Economics main office (Rice 233).

Honor Code:

The honor code applies to all graded work, and you must write or type "I have adhered to the Honor Code in this assignment" and sign your name. Presenting someone else's work as your own is a serious offense. Problem sets can be completed with at most one other student, and exams must be individual work with no help from any resource unless specifically authorized.

Students with Disabilities:

If you have a learning disability and require accommodations, please let me know as soon as possible so that your learning needs can be appropriately addressed. You will need to provide documentation of your disability from the Office of Disability Services (Peters G-27/28, x55588).

Course Outline and Reading List:

The outline and reading list are tentative and subject to change. I will give notice when changes occur.

Research Project:

The project should investigate the economic incentives that influence a specific resource. You will work with one other student on the project, which will be graded based on a five-to-eight-page paper as well as a 20-minute presentation. The project should include a basic model of resource use, a critical review of an existing policy that influences the incentives for resource use, and a prescription for how the policy related to the resource should be altered.

There are four components of the project grade.

10%	Outline	<i>March 30th</i>
10%	Literature Review	<i>April 18th</i>
30%	In-class Presentation	<i>May 2nd or May 4th</i>
50%	Final Paper	<i>May 4th</i>

Topic: You may select any topic related to natural resource economics, subject to my approval. You will need to select an appropriately narrow topic because of the page-length requirements (see below). Fisheries, for example, is too broad of a topic. The costs, benefits, and challenges of an individual transferable quota system for a specific fishery is a better choice. You may focus on a local, regional, or global topic. I strongly encourage you to discuss your topic with me before the project outline is due. Writing a research paper should be a positive experience. Research assignments are not intended to be busy work. Instead, the goal is for you to explore a subject that interests you and to learn more about the discipline.

Format: The paper should be five-eight pages typed using 8.5-inch-by-11-inch paper, double spaced text, 11-point typeface, and one-inch margins on all sides. Be sure to number your pages and use section headers to organize content. Do not right-justify the text. You need to have a cover page and a references section. The cover page, references section, and any tables, graphs, or charts are excluded from the page-length requirement.

References: You need to provide supportive data and cite your sources for the information you present. You must include a minimum of three refereed journal articles in your paper. Keep internet citations to a minimum; be careful about their reliability. No Wikipedia or blog references, please. You may cite the textbook for this course or other textbooks. Use proper citation methods.

Outline: The outline is due via email by 11:59pm on Thursday, March 30th and is worth 10% of the project grade. The purpose of the outline is two-fold. First, it helps you organize your thoughts. Second, it helps me prevent two groups from choosing the same topic. Make sure to include a key sentence that describes your paper. For example, if you choose fishery management, your topic sentence could be, "Should the United States use an individual transferable quota system to protect the Southern New England lobster fishery?" You need to include at least one reference (a refereed journal article) at the bottom of the outline. Format your outline in the traditional way (I. A. i. ii. B. i. ii. II. etc.). You may "reserve" your topics by sending me an email any time prior to March 30th. Topics will be determined on a first-come, first-served basis. Major headings might include: Introduction; Background; Literature Review; Economic Model; Data; Critical Review of Existing Policy; Policy Prescription with Supporting Economic Reasoning; Counter Arguments and Defense; Conclusions; References.

Literature Review: A brief introduction/background and the literature review section of the paper are due via email by 11:59pm on Thursday, April 18th and are worth 10% of the project grade. Reviewing the related literature involves exploring a wide array of resources that might include journal articles, newspaper and magazine articles, book chapters, legislation, government reports, and internet documents. Moreover, because natural resource economics is multidisciplinary, these resources might be drawn from a variety of fields besides economics, including environmental science, public policy, and risk management. A good place to begin a literature search is to use reliable internet databases to which Oberlin library subscribes. Refer to the section of this syllabus that lists Research Resources for Economics Students.

In-class Presentation: In-class presentations will be on May 2nd and May 4th and are worth 30% of the project grade. Groups will present their research projects for 15 minutes, and each presentation will be followed by a 3-minute question-and-answer session. Presentations should use no more than 15 slides (PowerPoint, Beamer, etc.), and each group member should present at least one section of the project.

Final Paper: The final paper is due via email by 11:59pm on Thursday, May 4th and is worth 50% of the project grade. You will be graded on both content and writing. While this is not an English class, I do expect the papers to be well-written. I view “what you say” and “how you say it” as (roughly) equally important. I will take off points if you do not follow instructions, including proper citation format.

Grammar and punctuation tips:

Know the difference between commas and semi-colons.

Place the period after the reference.

Example: US carbon emissions increased 20 percent from 2013 to 2015 (Smith, 2016).

Place the period within quotation marks, unless a citation immediately follows a quote.

Example: Jones (2015) states, “Casualties from global warming will exceed those of the Vietnam War.”

Example: One prominent environmentalist warned, “Casualties from global warming will exceed those of the Vietnam War” (Jones, 2015).

Use words for numbers one through nine and numerals for 10 and higher.

Write out the word percent.

Writing tips:

Do not use “these,” “those,” and “this” excessively.

Do not use the word “this” or “it” without a specific reference.

Example: do NOT say ... “It is important to note _____.”

Do not write in second person (using the word “you”).

Do not use contractions in a formal paper.

Do not use passive voice.

Example: do NOT say ... “The fate of the polar bear was ignored by the Obama administration.”

Instead, say ... “The Obama administration ignored the fate of the polar bear.”

Each paragraph should focus on one (and only one) idea. Do not repeat the same idea in multiple sentences.

Do not use direct quotes excessively. Save direct quotes for unique material.

Do not use direct quotes to convey statistics. If in doubt, paraphrase and properly cite.

Make sure you proofread your work. I encourage you to read your paper out loud.

ECON/ENVS 331: Natural Resource Economics – Reading List and Course Schedule:

Section	Date	Due	Reading (***) indicates a reading for which written feedback is due)
I. Introduction	31-Jan		Introduction and math review (no reading due)
	2-Feb		Hoffman & Bradley. "Calculus for Business, Economics, and..." (Chapter 7.4 on Lagrange Multipliers)
	7-Feb		Conrad Ch. 2.0 – 2.6 Broome. 2008. "The ethics of climate change." ***
II. Fisheries	9-Feb		Conrad Ch. 3.0 – 3.4 Sanchirico et. al. 2002. "Marine protected areas: Economic and social implications."
	14-Feb		Conrad Ch. 3.5 – 3.8 Newell et. al. 2005. "Fishing quota markets." ***
	16-Feb		Conrad Ch. 3.9 – 3.10 Tierney. 2000. "A tale of two fisheries."
	21-Feb		Class in computer lab (King 137). Come prepared to work on PS #1.
	23-Feb	PS #1	Conrad Ch. 3.11
III. Forestry and Land Use	28-Feb		Conrad Ch. 4.0 – 4.1
	2-Mar	Project groups	Conrad Ch. 4.2 – 4.3 Pearce. 2001. "The economic value of forest ecosystems." ***
	7-Mar		Conrad Ch. 4.4 – 4.5 Messer. 2006. "The conservation benefits of cost effective land acquisition..."
	9-Mar	PS #2	Conrad Ch. 4.6 Shogren et. al. 1999. "Why economics matters for endangered species protection."
	14-Mar		Lubowski et. al. 2006. "Land-use change and carbon sinks..." Class in computer lab (King 137). Come prepared to work on the Practice Midterm.
	16-Mar	Midterm	
	21-Mar		<i>Spring Break</i>
	23-Mar		<i>Spring Break</i>
IV. Water and Energy	28-Mar		Olmstead. 2010. "The economics of managing scarce water resources." ***
	30-Mar	Project outline	Conrad Ch. 5.0 – 5.4 Madrigal et. al. 2011. "Determinants of performance of community-based drinking water..."
	4-Apr		Conrad Ch. 5.5 – 5.9 Tierney. 1990. "Betting the planet."
	6-Apr		Wick & Bulte. 2009. "The curse of natural resources." ***
	11-Apr	PS #3	Weinstein & Partridge. 2011. "The economic value of shale natural gas in Ohio." The Economist. 2012. "Some fracking good news."
V. Pollution Regulation	13-Apr		Conrad Ch. 6.0 – 6.4
	18-Apr	Literature Review	Conrad Ch. 6.5 – 6.7 Cropper et. al. 2012. "The health effects of coal electricity generation in India."
VI. Sustainability	20-Apr		Conrad 7.0 – 7.2
	25-Apr	PS #4	Conrad 7.3 Krautkraemer. 2005. "Economics of natural resource scarcity: The state of the debate."
	27-Apr		Brander & Taylor. 1998. "The simple economics of Easter Island: A Ricardo-Malthus model..." ***
	2-May		Policy Presentations
	4-May	Final Paper	Policy Presentations
	13-May	Final Exam	