GE 460/660 – Resource Economics and Policy  
Fall Semester 2012  
MWF 9:00-10:00 (CAS 225)

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445 Stone Science Building  
617-353-7555  
bauer@bu.edu

**Office Hours:** Mondays 10–11:00, 2–3:00  
Fridays 11–12:00  
or by appointment

**Course Description:**  
This course examines economic models for use in analyzing problems regarding natural resources and the environment. The focus of the course is on developing the analytical skills needed to assess the economic implications of natural resource policies from both public and private perspectives. Students will examine optimal management strategies that address spatial and temporal aspects of natural resource stocks and flows. Specific attention is given to the efficient allocation of land, minerals, oil & gas, fisheries, forests, water, and wildlife.

**Prerequisites:** EC101 Introductory Microeconomic Analysis (or equivalent)  
MA121 Calculus for the Life and Social Sciences I (or equivalent)

**Recommended:** A statistics or econometrics course

**Course Objectives:**  
The primary objectives for students in this course are:  
1. to obtain an overview of the field of natural resource economics and policy  
2. to obtain an understanding of and be able to apply key concepts (e.g., resource rent)  
3. to achieve sufficient competence with dynamic optimization and simulation techniques to understand the literature in this field and be able to use these methods for modeling analysis  
4. to develop skills for critiquing the scholarly work of others  
5. to improve research and professional communication skills

**Required Texts:**  
There are no required texts for this course. All required readings will be made available on the course webpage.

**Recommended Texts:**  
Field, Barry C. 2008. *Natural Resource Economics: An Introduction*, Second Edition. Waveland Press Inc. (Available at the BU Bookstore and through online sources.) This is an undergraduate-level (non-calculus) text. I recommend it for students who have never studied environmental or natural resource economics, or microeconomic principles, at the undergraduate level and want to have a “backup” text. The graphical presentations in my lectures often come from this text. It is the companion to Field and Field’s Environmental Economics text used in GE425/625.
Conrad, Jon M. 2010. *Resource Economics*, Second Edition. Cambridge University Press. (Available through online sources.) This is a nice calculus-based text that focuses on the use of Excel spreadsheets for solving fishery, forestry, and non-renewable resource problems. We will do a few simple spreadsheet exercises in this course and this text is good for those students who would like to build more advanced spreadsheet models.

Perman, Roger, Yue Ma, James McGilvray, and Michael Common. 2003. *Natural Resource and Environmental Economics*, Third Edition. Pearson Addison-Wesley. (Available at the BU Bookstore under GE420/620 and through online sources.) This is a Master’s level text with calculus presentation relegated to chapter appendices. Our subject matter is covered in Part IV. NOTE: Please download the “Errors in text” document from the course webpage.

For those of you who have never taken a course in microeconomic principles or who took it a long time ago, please review any principles or intermediate microeconomics text. The library has several copies or you can order cheap, used copies online. I personally like Robert Frank’s *Microeconomics and Behavior*, but his *Principles of Microeconomics* with Ben Bernanke (Chairman of the Federal Reserve) is also good. I’ve also used principles texts by Gregory Mankiw and Paul Krugman.

For those of you who need to review calculus principles, six chapters from Alpha C. Chiang’s *Fundamental Methods of Mathematical Economics* are available on the course webpage.

**Additional Readings:**
A preliminary list of supplementary readings is provided at the end of this syllabus. We will not read all of these papers. I will choose from the list based on student interest and technical ability. Readings will be made available on the course webpage.

**Course Web Page:**
This syllabus, required and supplemental readings, homework assignments, and other course information will be posted on the Blackboard page for this course.

**Grading:**

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<tr>
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<th>GE660 Students</th>
<th>GE460 Students</th>
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<tbody>
<tr>
<td>Class Participation:</td>
<td>10%</td>
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<tr>
<td>Homework:</td>
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<td>Exam 1:</td>
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<td>Exam 3:</td>
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<tr>
<td>Critiques:</td>
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**Class Participation:**
Classes will consist of lectures and discussions. Everyone is expected to read all the assigned readings prior to class and participate in class discussions, including asking and answering questions and leading discussions. Attendance will count in your class participation grade.
Homework:
Homework will be assigned approximately bi-weekly and will come in one of two forms: problem sets and spreadsheet exercises. Problem sets consist of graphical and mathematical analyses of natural resource problems as well as short answer explanations. Spreadsheet exercises involve the dynamic optimization or simulation of resource problems using Excel. GE660 students may have additional questions.

Students are encouraged to work together on homework assignments. However, copying all or part of problem answers, or providing answers to or accepting answers from other students, is considered academic dishonesty (see statement below). Each student must turn in their own interpretation of the answers. Homework is due in class on the due date unless otherwise specified. You will lose 20% of your homework grade for every day it is late. Homework will not be accepted by email. Please staple your homework.

Critiques (GE660 Students only – must complete 4 of 6 on Course Outline):
Article critiques are structured evaluations of a published paper that include the following:

1. **Problem Statement** – What problem is being analyzed in the paper? What is the underlying environmental and/or economic problem (e.g., market failure, policy failure)? What is the purpose of this paper?
2. **Methods** – What research methods were used? What assumptions were made?
3. **Summary of Results** – What are the key results or key arguments?
4. **Economic Reasoning** – What is the economic intuition (i.e., “the story”) behind the problem and the results? What are the incentives driving the behavior of decision-makers?
5. **Critique** – What are the paper’s major strengths and weaknesses? Is this paper relevant? What is its major contribution? Are the assumptions reasonable? Were the methods appropriate? Was enough information provided that results could be replicated? Was the paper clear and concise? Did the paper make good use of tables and figures? Did the authors address the problem they said they would address? Was the paper convincing? What are avenues for future research? Would you recommend this paper to your fellow students?

Exams:
There will be three in-class exams (Friday, October 5, Monday, November 12, and Monday, December 10). Exams are cumulative such that core concepts learned earlier in the semester will provide a foundation for topics covered in the later in the semester; however, exams 2 and 3 will focus on material covered since the previous exam. **There will be no make-up exams and exam dates will not change.**

Academic Honesty:
Cheating on exams, plagiarism, misrepresentation or falsification of data, knowingly allowing another student to represent your work as his own, altering or destroying another student’s work, and submitting the same work in more than one course without the consent of the instructors are all forms of academic misconduct and will not be tolerated. Please see the university’s Academic Conduct Code at [http://www.bu.edu/academics/resources/academic-conduct-code/](http://www.bu.edu/academics/resources/academic-conduct-code/).
**Course Outline:**
This is a tentative schedule. We will try to stick to this schedule, but we will also move at the pace of the class. Changes to the schedule and supplementary readings will be announced in class. Exam dates will NOT change.

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<thead>
<tr>
<th>DATES</th>
<th>TOPIC and READINGS (*Required Readings)</th>
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<tbody>
<tr>
<td>9/5 (W)</td>
<td>Course Overview and Introduction</td>
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<td>9/7 (F)</td>
<td>Economy and Environment</td>
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<td>Field Chapters 1 and 2</td>
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<td>9/10 (M) thru 9/14 (F)</td>
<td>Review of Microeconomic Principles and Welfare Economics</td>
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<td>Field Chapters 3 and 4</td>
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<td>9/17 (M)</td>
<td>Discounting and Dynamic Efficiency</td>
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<td>Field Chapter 5</td>
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<td>9/19 (W) thru 9/24 (M)</td>
<td>Property Rights &amp; Market Failures</td>
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<td>Field Chapter 6</td>
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<td>*Panayotou 1993</td>
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<td>9/26 (W) and 9/28 (F)</td>
<td>Coasian Bargaining</td>
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<tr>
<td></td>
<td>CRITIQUE</td>
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<td></td>
<td>*Edwards 2008</td>
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<td>*Willis and Baker 2008</td>
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<td>10/1 (M) and 10/5 (W)</td>
<td>Land and the Concept of Rent</td>
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<td>Field Chapter 14</td>
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<td></td>
<td>*van Kooten and Folmer 2004 Chapters 3 (pages 37-44 only)</td>
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<td></td>
<td>CRITIQUE</td>
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<td></td>
<td>*Kopitts et al. 2007</td>
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<td>*Sills and Caviglia-Harris 2008</td>
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<td>10/5 (F)</td>
<td>EXAM 1</td>
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<td>10/8 (M)</td>
<td>NO CLASS – HOLIDAY – CLASS MEETS ON TUESDAY</td>
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<td>10/9 (T) thru 10/24 (W)</td>
<td>Non-Renewable Resources (Minerals, Oil &amp; Gas)</td>
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<td>Field Chapter 10</td>
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<td>*Perman et al. 2003 Chapter 15</td>
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<td>CRITIQUE</td>
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<td></td>
<td>*Halfar and Fujita 2002</td>
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<td>*Mason and Polasky 2005</td>
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<td>DATES</td>
<td>TOPIC and READINGS (*Required Readings)</td>
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| 10/26 (F) thru 11/9 (F) | Fisheries  
Field Chapter 13  
*Perman et al. 2003 Chapter 17  
CRITIQUE  
*Asche et al. 2009  
*Gaines et al. 2010 |
| 11/12 (M)           | EXAM 2                                                                                                  |
| 11/14 (W) thru 11/19 (M) | Forests  
Field Chapter 12  
*Hartwick and Olewiler 1998 Chapter 10 |
| 11/21 (W) and 11/2 (F) | NO CLASS – TURKEY DAY                                                                                     |
| 11/26 (M)           | Forests (continued)                                                                                      |
|                     | CRITIQUE  
*Creedy and Wurzbacher 2001  
*Maraseni and Cockfield 2011 |
| 11/28 (W) thru 12/3 (M) | Water Resources  
Field Chapter 15  
*Griffin 2006 Chapters 7 and 8  
CRITIQUE  
*Garrick et al. 2009  
*Ruijs et al. 2008 |
| 12/5 (W)            | Wildlife Resources and Biodiversity  
Field Chapters 18 and 19  
*Busch and Cullen 2009 |
| 12/7 (F)            | Wrap-up and Review                                                                                       |
| 12/10 (M)           | EXAM 3                                                                                                  |
Supplementary Readings (* = Required):

Property Rights & Market Failures


Coasian Bargaining

Coggan, Anthea, Stuart Whitten, and Jeff Bennett. Influences of transaction costs in environmental policy. Ecological Economics 69:1777-1784.

Land and Resource Rent

Minerals and Fossil Fuels


Fisheries


Forests


Water Resources


Wildlife Resources and Biodiversity


