Natural Resource Economics  
EconS 581

Class Time: 2:50 – 4:05pm T, Th  
Class Room: Todd Hall 304

Professor: Gregmar I. Galinato  
Office: Hulbert Hall 203C

Email: ggalinato@wsu.edu  
Hours: 1:00 – 2:00pm T, Th

Phone: 509-335-6382  
or by appointment

Course Overview  
This course applies economic principles to natural resource issues. Economic theory will provide a framework to analyze questions of natural resource use and misuse, natural resource policy and law, scarcity and sustainability. Each topical section is chosen to allow application of a modeling approach distinct from other sections.

Administrative details
Prerequisites: Prereq EconS 502; EconS 503; EconS 511  
Credits: 3

Lectures and Attendance Policy:
Lectures will be held in Todd Hall 304 from 2:50-4:05pm every Tuesday and Thursday. Attendance is very important for your success in this class. A makeup exam will only be given due to an excused absence. Excused absences are limited to the following reasons: (1) Court appearances in which you are not the defendant (show me court papers prior to the absence); (2) Field trips or university-sponsored travel (give me documentation prior to the absence); (3) Hospitalization (give me a copy of your admission papers immediately upon returning to class); and (4) Military service in the armed forces of the United States (give me deployment papers prior to the absence).

Learning Goals
This course aims at providing students a framework to try to understand issues related to natural resource and environmental economics. Students will be able to apply the models that you have learned to understand and appreciate a wide range of natural resource and environmental issues. By the end of the course, students should be able to:
• understand and criticize related natural resource and environmental economics journal articles.
• conduct and write a study on natural resource and environmental economics.
Course Outline:

<table>
<thead>
<tr>
<th>Week</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2</td>
<td>Introduction and Review of Optimal Control</td>
</tr>
<tr>
<td>3-4</td>
<td>Nonrenewable Resources; Scarcity and depletion</td>
</tr>
<tr>
<td>5-6</td>
<td>Renewable Resources</td>
</tr>
<tr>
<td>7</td>
<td>Forestry Economics</td>
</tr>
<tr>
<td>8</td>
<td>Trade, Natural Resources and the Environment</td>
</tr>
<tr>
<td>9</td>
<td>Spring Break</td>
</tr>
<tr>
<td>10-12</td>
<td>Trade, Natural Resources and the Environment</td>
</tr>
<tr>
<td>13</td>
<td>Economic growth and natural resources</td>
</tr>
<tr>
<td>14</td>
<td>Natural Resources and the Economics of National Income Accounts</td>
</tr>
<tr>
<td>15-16</td>
<td>Research Presentations</td>
</tr>
</tbody>
</table>

Requirements

Exam: A midterm and final exam will be given.

Research Proposal: A research proposal will be due in the middle of the semester. The research proposal should be new and not something that has already been written for other classes.

Research Paper: The project will involve an analysis of an economic development problem. The choice of the topic is not limited to the topic outline in class. The project may be theoretical modeling or empirical (econometric) analysis with a solid theoretical framework. A full paper is not the main output. By the end of the semester you should have a solid research question, a set up of the theoretical model and preliminary results. If it is an empirical model, you need to have the data and conducted some preliminary estimation.

Presentation: You will present your paper in class and you will be assigned one reviewer to make constructive criticisms of your research.

Referee Report: You will be required to write a review of the research paper of one of your colleagues and present your comments.

Grading: The breakdown of weights are as follows:

Final Exam – 20%, Midterm Exam – 20% Research paper – 30%, Research presentation – 15%, Referee report – 10%, Research proposal – 5%

Important Dates:

Final Exam: Please see Registrar’s webpage.

Note: Covers everything after Forestry Economics.

Presentations and referee report deadline: Second half of April, 2016
First Draft of Research Paper due on: April 7, 2016
Midterm Exam: February 25, 2016

Note: Covers everything from Introduction to Forestry Economics.
Guidelines for writing the paper and criteria for grading

Paper proposal:

Needs to contain two paragraphs:
The first paragraph contains the research question (objective of the study) and its significance. The second paragraph is a literature review which verifies that the study fills a gap in the literature.

Criteria for grading:
Clarity – 30%
Significance of the study – 35%
Literature review – 35%

Final Paper:
Needs to contain the following:
1) Revised version of the first two paragraphs highlighting the research question, significance and literature review.
2) Model – set up
   Note: remember to define all your variables
3) Model – solution
4) Model – results
   Note: all proofs need to be completely done step by step! Please do not make me have to work through each proof. Each step should be clearly outlined.
   Note: discussion does not need to be in complete paragraphs. I actually prefer bullet points.

If you plan to do something empirical, aside from including 1-4, you also need
5) Data – description of data
   Note: again bullet points are fine
6) Empirical model – this will need to connect clearly with the theoretical model
7) Preliminary estimation results
   Note: discussion does not need to be in complete paragraphs. I actually prefer bullet points.

Criteria for grading:
Clarity, Significance, Literature review – 30%
Appropriateness of model in answering research question – 35%
Accuracy of solution and results – 35%
Topic Outline

("*") indicates required reading. They will be covered in class and part of the exams.

1. Introduction and Tools for Analysis.


2. Nonrenewable Resources; Scarcity and depletion

   2.1 Theory of the mine
   2.2 Comparative dynamics
   2.3 Market structure
   2.4 Backstop technology
   2.5 Regulation
   2.6 Defining and measuring Scarcity
   2.7 Evidence relating to resource scarcity


3. Renewable Resources
   3.1 Static Model of Open Access
   3.2 Dynamic Model of Open Access
   3.3 Market structure
   3.4 Comparative Dynamics
   3.5 Fishery Regulation


4. Forestry Economics
   4.1 Single Rotation
   4.2 Multiple Rotation
   4.3 Regulation of Forests


5. Trade, Natural Resources and the Environment


6. Economic growth and natural resources


7. Natural Resources and the Economics of National Income Accounts


8. Noncooperative Resource allocation


WSU Academic Honesty Statement:
As an institution of higher education, Washington State University is committed to principles of truth and academic honesty. All members of the University community share the responsibility for maintaining and supporting these principles. When a student enrolls in Washington State University, the student assumes an obligation to pursue academic endeavors in a manner consistent with the standards of academic integrity adopted by the University. To maintain the academic integrity of the community, the University cannot tolerate acts of academic dishonesty including any forms of cheating, plagiarism, or fabrication.

Academic integrity is the cornerstone of the university and will be strongly enforced in this course. Each student must turn in original work; no copying will be accepted. Students found responsible for academic integrity violations may receive an F on the particular assignment or exam, as well as an F for the course. Repeated and/or serious offenses may result in referral to the Office of Student Standards and Accountability. Cheating is defined in the Standards for Student Conduct WAC 504-26-010 (3). It is strongly suggested that every student read and understand these definitions: http://conduct.wsu.edu/default.asp?PageID=338. The Academic Integrity Statement and link to WSU’s policy at this website: www.conduct.wsu.edu/default.asp?PageID=343, and an explanation of plagiarism at this one: www.wsulibs.wsu.edu/plagiarism/main.html.

WSU Safety:
WSU is committed to maintaining a safe environment for its faculty, staff, and students. Safety is the responsibility of every member of the campus community and individuals should know the appropriate actions to take when an emergency arises. In support of our commitment to the safety of the campus community the University has developed a Campus Safety Plan, http://safetyplan.wsu.edu. It is highly recommended that you visit this web site as well as the University emergency management web site at http://oem.wsu.edu/emergencies to become familiar with the information provided.

Classroom and campus safety are of paramount importance at Washington State University, and are the shared responsibility of the entire campus population. WSU urges students to follow the “Alert, Assess, Act” protocol for all types of emergencies and the “Run, Hide, Fight” response for an active shooter incident. Remain ALERT (through direct observation or emergency notification), ASSESS your specific situation, and ACT in the most appropriate way to assure your own safety (and the safety of others if you are able).

Distance Degree Program (DDP/DRC) Statement:
Reasonable accommodations are available for students with a documented disability. DDP and the Disability Resource Center (DRC) work together to provide reasonable accommodations to students who have documented disabilities and who are registered both with DDP and the DRC. DDP’s liaison to the DRC will assist you in getting started. To begin this process, contact DDP (800-222-4978 or distance@wsu.edu). We strongly recommend that you notify us as soon as possible. All accommodations must be approved through the Disability Resource Center (DRC) (509-335-3417 http://www.drc.wsu.edu).

Disclaimer: This syllabus is subject to change to facilitate instructional and/or student needs.