AREC 551 – Applications of Environmental and Natural Resource Economics
4 Credits

Professor
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Course Description
This course applies and expands upon concepts, theories, and methods in environmental and natural resource economics introduced in AREC 550. Topics include non-market valuation, discounting, and benefit-cost analysis, as well as the role and importance of institutions, appropriate research methods, and the philosophical basis for normative judgments in economics.

Objectives
The course objectives are:

- To develop students’ ability to apply theory and utilize empirical evidence in evaluating environmental and natural resource issues from “problem solving” perspective at a level appropriate for M.S. students.
- To provide students with the necessary background and tools, and to expose students to relevant research and policy analysis, to develop their skills for conducting applied research and evaluation of policy at a level appropriate for an M.S. thesis.

Learning Outcomes
Students completing this class successfully will be:

- Able to identify and describe a range of market and policy failures that can plague environmental resource allocation;
- Able to identify and describe a range of regulatory, market-based and other mechanisms that can be used to address pollution and other environmental and natural resource policy issues, and assess their potential strengths and weaknesses (private property, common property, standards, taxes, and tradable permits);
- Able to recognize a range of social welfare criteria and explain their differences including Pareto efficiency, potential Pareto efficiency, and other approaches to social welfare for evaluating natural resource allocations and policies.
- Able to identify and describe standard approaches to using quantitative methods and economic models for addressing environmental and natural resource issues;
- Able to frame and discuss environmental and resource issues and policy within the context of economic theory, methods and empirical evidence.

Prerequisites: AREC 550

Lectures: The class meets for 3 hours and 40 minutes per week: Monday, Wednesday, 10:00 – 11:50.
Office Hours: Tuesday, Thursday 0:00 – 0:00 or by appointment.

Textbooks (Required):

Course Requirements

Problem Sets: xx% total.
Midterm Exam: xx%.
Final Exam: xx%.

There are no exceptions to these dates. Please make travel plans accordingly. There are no makeup exams or extra credit assignments. Any unexcused absence from an exam will receive a grade of zero. An absence will be excused only with appropriate documentation.

Tentative List of topics

1. Benefit-cost analysis: introduction
2. Valuation – concepts, definitions, “Total economic value”
3. Valuation – methods, market and non-market goods and services
4. Welfare criteria: moral philosophical foundations, 1st and 2nd welfare theorems, alternative approaches, strengths and weaknesses
5. Welfare criteria: social welfare functions, Pareto versus social efficiency
7. Institutional economics – perspectives on environmental resource allocation.
8. Shortcomings of valuation – Vatn & Bromley; Frank’s Ethics of Competition
10. Methods – econometric versus structural models; hybrid approaches.
12. Climate change – current issues: leakage and additionality, discounting, carbon tax versus Cap-and-trade
13. Water: interdisciplinary research, necessity but difficult
14. Energy?
15. Developing countries and environmental policies
Course Outline and Readings (tentative)

1. Introduction
2. Conceptions of welfare
3. Values and valuation methods
4. Benefit-cost analysis
5. Discounting
6. Practicum #1:
7. Methodological pluralism (econometrics versus structural models, OR, simulations)
8. Institutions – property rights, commons, policy failure – limits of organization
9. Policy mechanisms: direct vs indirect; regulatory vs market-based, formal vs informal; voluntary vs involuntary; consumer initiated.
10. Public finance, taxation and welfare; double dividend
11. Global and developing country perspectives – WTO, global commons, climate change
12. Practicum #2:

Students with Disabilities

Accommodations are collaborative efforts between students, faculty and Disability Access Services (DAS). Students with accommodations approved through DAS are responsible for contacting the faculty member in charge of the course prior to or during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through DAS should contact DAS immediately at 737-4098.

Student Conduct

OSU policies with regard to academic dishonesty and disruptive behavior will be strictly followed. Oregon State University defines academic dishonesty as: “An intentional act of deception in which a student seeks to claim credit for the work or effort of another person or uses unauthorized materials or fabricated information in any academic work.” Academic dishonesty includes: Cheating, Fabrication, Assisting, Tampering, Plagiarism. More information is available at: http://oregonstate.edu/studentconduct/.