

AGEC 5133 AGRICULTURAL AND ENVIRONMENTAL RESOURCE ECONOMICS

Course Offering : Spring Semester, Even Calendar Years MWF 12:30-1:20 Room TBA

Instructor: Jennie Popp, Department of Agricultural Economics and Agribusiness, 218B Agriculture Building, jhpopp@uark.edu, 470-575-2279

The Description of this Course:

An economic approach to problems of evaluating private and social benefits and costs of altering the environment. Emphasis is given to the interaction of individuals, institutions and technology in problems of establishing and maintaining acceptable levels of environmental quality. Special emphasis will be placed on case studies of agricultural and environment issues in the region and on the development of solutions using mathematical optimization software packages.

Prerequisite: three hours 3000 level economics or agricultural economics; or Ph.D. standing.

Each student who successfully completes this course will have developed the skill to apply microeconomic tools and concepts to environmental resource use, management, and policy. You will be able to distinguish circumstances that require a need for objective evaluation tools and those that require subjective evaluation tools. Finally you will have gained an awareness of environmental issues important in the state of Arkansas and in the nation and an understanding of economic and policy tools relevant in their evaluation.

The Course Will Be Broken into Five Sections:

1. Modeling Environmental Problems
2. Modeling Solutions to Environmental Problems
3. Analytic Tools for Environmental Planning
4. Case Studies of Regional Agriculture and the Environmental Issues
5. Determining Optimal Environmental Management Using Optimization Software

The syllabus is subject to change based on students' interest and knowledge as well as speaker and site visit availability.

Office Hours: TBA

Course Home Page:

Material for this course, including syllabus, homeworks, and links to suggested reading materials will be found on webCT.

Grading: Your grade is comprised of the following components: Exam I & 2, 30%; Homework /Quizzes, 15%; Class Project, 20%; Optimization Project, 15%; Final Exam, 20%; Total is 100%. Under the new CAFLS grading system, your grades will be recorded as follows:

93-100 = A	90-92 = A-	87-89 = B+	83-86 = B	80-82 = B-	77-79 = C+
73-76 = C	70-72 = C-	67-69=D+	63-66 = D	60-62 = D-	< 60 = F

No hats may be worn during a quiz or an exam. Please bring a ruler and a calculator to all quizzes/exams. Make ups exams *may* be permitted and must be arranged *prior* to the exam unless it is a medical emergency. **The final exam is mandatory.**

PLEASE TURN OFF ALL CELL PHONES BEFORE COMING TO CLASS. Cell phones that ring will be confiscated for remainder of class period.

Homework: Approximately six homeworks will be given throughout the semester.

Class Project : Students will participate in a group project to tackle a relevant environmental issue. Activities may include local site visits, guest speakers and internet research. Individuals in each group will prepare their own research paper and the group will present their findings to the class at the end of the semester.

Textbooks:

Most required readings will be taken from:

- G.D. Carlson, D. Zilberman and J. Miranowski, eds. Ag. and Env. Resource Economics. Oxford University Press, 1993
- Baumol and Oates. Theory of Environmental Policy, Cambridge Press, 1988
- Minnesota IMPLAN Group, Inc. IMPLAN Users Guide, Minnesota Implan Group, 2001.
- T. Robertson, B. English and E. Alexander, eds. Evaluating Natural Resource Use in Agriculture. Iowa State Press, 1998.
- GAMS for Environmental Economic modelling – download for free from <http://www.sls.wau.nl/enr/gams/index.htm>

One copy of each book will be placed on reserve in Mullins library. These readings can be loaned out for two hours at a time. These books are also available for purchase in the bookstore. Other required readings (such as those taken from the Journal of Environmental Management and the Ecological Economics and EPA websites) will be placed on reserve in Mullins library.

Class Attendance:

As an economist, you must learn to manage your scarce resources, time being one of them. Attendance is *optional*. However, you are highly encouraged to weigh the opportunity costs of missing class as lectures will greatly aid in the understanding of the material. Some test and quiz questions may come directly from material presented only in class (not in your textbook). Pop quizzes may be given. Class participation will be considered in cases of a borderline grade.

Class Notes:

An effort will be made by the instructor to provide students with an outline of the slides presented in class. An effort will be made to have notes for any given week available on the web by 5:00 PM the Friday before the start of the lecture week. However, there is no guarantee notes will be made available each week, and even when available, these notes will *not* be complete and *cannot* replace note taking in class.

Academic Dishonesty:

Copying of classmates answers on quizzes, homeworks, exams or any other assignment in which independent work is required is considered cheating. Please do not cheat. If you are caught cheating, campus procedures will be followed to exact the appropriate punishment which will likely result in a failing grade for the course. Please refer to the Academic Dishonesty discussion on pages 168-169 in the 2005-2006 University of Arkansas Graduate Studies catalog.

Students with Disabilities:

Students who have learning disabilities will be accommodated as indicated by the campus policy on disabilities. Please refer to pages 206-207 in the 2005-2006 University of Arkansas Graduate Studies catalog. Students with learning disabilities are urged to confer with the instructor as early in the semester as possible to arrange appropriate accommodation. It is the student's responsibility to initiate this contact.

Inclement Weather Policy:

If the university is open but the Fayetteville school system is closed during our class time, we will not have class. If both the university and Fayetteville school district are open by our class time, class will be held as scheduled. Please use your best judgement before getting on the road. **Students who live off campus will have the opportunity to make up a missed exam. However, in order to receive full credit on homework, homework must be emailed to the instructor by the beginning of class on the day it is due.**

Other Notes:

Students taking this course come from a variety of backgrounds. Some have a strong understanding of economics, others have their strengths in other sciences, law, or policy. The application of environmental economics concepts to real world situations involves an understanding of and collaboration across multiple disciplines. While this can present challenges and draw many out of their comfort zone, it is critical to the development of sound analysis and good policy. It is hoped that all students from all backgrounds will share their thoughts and experiences to enrich the learning process. My goal is to make this class a practical, challenging and rewarding experience for everyone.

Course Outline, Reading Assignments, Homework Due Dates, and Exams (All materials subject to change)

Week	Topic	Reading Material (Additional materials listed in class notes).	H
1	Overview of Environment Economics, Foundations in Economics	CZM Chs 1 & 2 Economics Handout on Webct	
2	Overview and Foundations, con't	CZM Chs 1 & 2	
3	Agricultural Externalities and Market Failures	CZM, Ch 6; Bamoul and Oates Chs 2-4 on reserve	I
4	Agricultural Externalities and Market Failures	CZM, Ch 6; Bamoul and Oates Chs 2-4 on reserve	
5	Economics of Renewable and NonRenewable Resources	CZM, Ch 3	
6	Evaluation of Benefits and Costs - Market and Non Market	Selected readings from multiple text books including Baumol and Oates	II
	First Exam	Materials from Weeks 1 through 5	
7	Evaluation of Benefits and Costs - Market and Non Market (Con't)	Selected readings from multiple text books including Baumol and Oates	
8	Modelling Env issues in Agriculture	CZM, Ch 4 ; GAMS Student tutorial, REA Ch 1 & 2	III
9	Modelling, con't	GAMS Student tutorial, IMPLAN manual, REA Ch 12	
10	<i>SPRING BREAK</i>		
11	Case Studies: Water Quantity and Quality	CZM, Ch 8; Clean Water Act, selected readings	IV
	Second Exam	Materials from Weeks 6 through 9	
12	Case Studies: Water, con't Air Quality	Clean Air Act, Selected Legal Cases, Selected EPA documents	
13	Pesticides and Pest Management	CZM, Ch 7; REA Ch 5	V
14	Land Use	CZM, Ch 9, REA Ch 4 & 10	
15	Agricultural Resource Policy	CZM Ch 10; Selected readings on reserve	
16	Student Presentations		VI
	Final Exam	Materials from Weeks 1 - 16	

Readings Guide

B&O - Baumol and Oates

CZM - Carlson, Zilberman and Mironowski

GAMS - GAMS for environmental economics modelling download

MIG - Minnesota IMPLAN Group

REA - Robertson, English and Alexander