

South Dakota State University
Economics 472/572
Resource and Environmental Economics
Spring 2007

PREREQUISITE: Econ 201, Microeconomics Principles

CLASSROOM AND TIME: Scobey 020, 2:30-3:45 p.m., TTH

INSTRUCTOR: Dr. Thomas L. Dobbs
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OFFICE HOURS: Tue. 4:00 - 5:00 p.m.
Wed. 2:00 - 3:30 p.m.

(Research-related travel or meetings may prevent me from keeping these hours on some days. Other times may be scheduled by appointment.)

COURSE DESCRIPTION (from SDSU Bulletin):

Resource and environmental economics surveys the allocation and conservation of natural resources from a perspective of optimal use and sustainability. Emphasis is placed on environmental economics including problems of pollution, population, and economic growth. Methods for evaluating projects and programs are considered.

OBJECTIVES OF THE COURSE:

This course is listed in the 2005/2006 and 2006/2007 SDSU Bulletins as one of the courses satisfying SDSU's IGR Goal #1 (*Land and Natural Resources*). Upon completion of this course: "*Students will learn to be responsible for the land and other natural resources.*" The major objective of the course is to provide students with insights into the interplay of economics and ecology in determining the sustainability of land and other natural resource use. Students will gain understanding of relevant economic principles and will have practice in analyzing and designing economic policies for sustainable use of natural resources.

DESCRIPTION OF INSTRUCTIONAL METHODS:

Course format includes lectures, term papers, and class discussion. Assigned readings come from an assigned textbook, a monograph, and other readings in a packet that students must purchase. Critical thinking is developed through examinations, term papers, exercises, and class discussion. Written communication includes essay exams and term papers. There is some oral communication through class discussion.

STUDENT LEARNING OUTCOMES, and RELATED ASSESSMENT TOOLS. Students will:

1. Learn the fundamental importance of land and other natural resources.

This outcome will be assessed primarily through the midterm exam, over roughly the first half of the textbook—which covers the evolution of human consciousness of natural resource problems over the last two centuries, and how ecology and economics have evolved, both separately and jointly, to address the problems.

2. Understand scientific principles as they pertain to responsible use of land and other natural resources.

This outcome will be assessed primarily through the two major exams and a term paper. Although students are exposed to ecological principles, students are tested primarily on economic principles, i.e., social science principles. Within economics, the sub-disciplines emphasized are “natural resource economics”, “environmental economics”, and “ecological economics”.

3. Develop an ethic for responsible use of land and other natural resources.

This outcome will be assessed primarily through class discussion of policy approaches and students’ analyses of policy options in their term papers. Policy analysis emphasizes the interplay between individual values (ethics) and objective economic evaluation of policy impacts on natural resource use. The textbook authors make their values very clear, as does the instructor when appropriate. However, the emphasis is on instilling student sensitivity to the critical role played by individual and collective ethics in determination of policies and consequent natural resource sustainability.

4. Gather and critically evaluate data to address basic and applied principles related to land and other natural resources.

This outcome—emphasizing “applied” social science principles—will be assessed primarily through the students’ term papers. Students must use the economic principles covered in the textbook, monograph, and other readings—and the lectures—to critically examine possible policy approaches for addressing natural resource problems.

5. Develop knowledge or skills related to the sustainable use of land and other natural resources.

This outcome will be assessed primarily through the second major exam and the term paper.

6. Obtain knowledge and skills to scientifically analyze the influence of individuals and groups of people on land and other natural resources.

This outcome will be assessed through the exams, the term papers, and class discussion of policy options. The sub-disciplines of economics that form the heart of this course—natural resource economics, environmental economics, and ecological economics—provide scientific bases for understanding individual and collective economic incentives and outcomes related to natural resource use. Students must acquire a strong grounding in the economic concepts of “externalities”, “public goods”, and “collective action”.

REQUIRED READING MATERIAL:

An Introduction to Ecological Economics, by Robert Costanza, et al., St. Lucie Press (for International Society for Ecological Economics), 1997. [*The authors of this book have done an excellent job of covering both traditional ‘natural resource economics’ and the emerging, closely related field of ‘ecological economics’.*]

Payments for Environmental Services, Center for International Forestry Research Occasional Paper No. 42, 2005, by Sven Wunder.

Retrieve from this website: <http://www.cifor.cgiar.org/scripts/newscripts/publications/ocpapers.asp>

“Multifunctional Economic Analysis,” by Thomas Dobbs, Chapter 6 in **Agroecosystems Analysis**, Diane Rickerl and Charles Francis (eds.), 2004. Chapter reprint is in reading packet.

Additional readings are in a reading packet that students must purchase in the SDSU Bookstore.

ORGANIZATION OF THE COURSE:

A. Humanity’s Current Dilemma

B. A Preview of Policy Instruments: “Payments for Environmental Services”

C. The Historical Development of Economics and Ecology

- 1. The early codevelopment of economics and natural science**
- 2. Economics and ecology specialize and separate**
- 3. The reintegration of ecology and economics**

D. Problems and Principles of Ecological Economics

- 1. Sustainable scale, fair distribution, and efficient allocation**
- 2. Ecosystems, biodiversity, and ecological services**
- 3. Substitutability vs. complementarity of natural, human, and manufactured capital**
- 4. Population and carrying capacity**
- 5. Trade and community**

E. Policies, Institutions, and Instruments

- 1. Multifunctional economic analysis**
- 2. The need to develop a shared vision of a sustainable society**
- 3. History of environmental institutions and instruments**
- 4. Successes, failures, and remedies**
- 5. Policy instruments**
 - a. Regulatory systems**
 - b. Incentive-based systems (including “Payments for Environmental Services”)**
 - c. Advisory/institutional/participatory approaches**
 - d. The “Precautionary Principle”**
- 6. Measuring welfare and well-being**
- 7. Valuation, choice, and uncertainty**

IMPORTANT DATES:

| | | |
|------------------------------------|------------|---------------------------------|
| Probable date of midterm exam | | Thur., March 1 |
| Term papers due: | undergrads | Thur., Apr. 12 |
| | grads | Tue., Apr. 17 |
| Probable date of second major exam | | Thur., Apr. 26 |
| Final (short) exam | | Tue., May 8 (4:00-5:40 p.m.) |

EXAMINATIONS AND GRADES:

Grades will be determined primarily on the basis of total point accumulation from examinations, assigned exercises, class participation, and oral presentations (for graduate students). Some questions on exams may be different for graduate students.

| <u>Exams and Projects</u> | <u>Points</u> | <u>Grade Breaks</u> |
|---|----------------|-----------------------------|
| First exam | 100 | A (Exceptional) = 90 – 100% |
| Second exam | 100 | B (Above Ave.) = 80 – 89% |
| Final (short) exam, quizzes, class participation, exercises, & attendance | <u>40-80</u> | C (Average) = 70 – 79% |
| Subtotal = | 240-280 | D (Passing) = 60 – 69% |
| Term paper for undergraduate students | <u>80</u> | F (Failure) = Below 60% |
| Total for undergraduates | 320-360 | |
| Term paper for graduate students | 100 | |
| Possible oral presentation (based on paper) for graduate students | <u>25</u> | |
| Total for graduate students | 340-405 | |

There will be two major exams—one at midterm time and the other late in the course. Some questions on these exams may differ for grads and undergrads. A very short final exam will be worth 20 points. There will also be a few quizzes and/or exercises during the semester, each worth 20 points. The low score of these (final, quizzes, and exercises) will be thrown out; therefore, the final is optional if the student wishes to use that as the ‘throw-out’ score. There will be no make-ups allowed for the final or these quizzes and exercises; therefore, if you miss one, that is your ‘throw-out’. Separate handouts describe the term paper requirements and procedures for graduates and undergraduates.

MAKE-UP EXAMS:

Make-ups for the two major exams will be allowed only for absences excused by the instructor. Except in legitimate and serious emergencies, all requests for excused absences must be submitted and approved in advance. Requests must be submitted in writing by the student, showing the signature and phone number or email number of a responsible authority (e.g., faculty advisors for university-sponsored trips). In those cases where a make-up is allowed, the exam normally will be different than the one missed.

ATTENDANCE:

Attendance at university classes is considered a professional responsibility. Attendance will be recorded, by sign-up sheet, most of the time. Students are expected to arrive in class on time (except in extenuating circumstances) and to stay until the end of the class period. Students are expected to read the assignments prior to class and to actively engage in class discussions.

Students missing more than five class periods (for any reason) may have their grades lowered – and may even be given failing grades – at the discretion of the instructor. Students anticipating the possibility of missing more than five class periods may request additional assigned work from the instructor. The instructor will have the latitude to decide whether and what kind of compensatory work will be allowed.

ACADEMIC DISHONESTY:

Cheating or plagiarizing on tests and written assignments is strictly prohibited! The penalty for academic dishonesty may be one or more of the following, at the discretion of the instructor:

- a. A grade of zero on the test or paper for the student(s) involved;
- b. A grade of F for the course;
- c. Referral of the matter to the Student Conduct Committee for disciplinary action.

DISABILITY SERVICES:

If you are a person with a disability and anticipate needing any type of accommodation in order to participate in this class, please inform the instructor at the beginning of the semester and make the appropriate arrangements with the Office of Disability Services (ODS), located in SBN 145. To schedule an appointment, call (605) 688-4986 and request to speak with the Coordinator of Disability Services.

BOR POLICY 1:11, ACADEMIC FREEDOM AND RESPONSIBILITY

The South Dakota Board of Regents requires the following statement to appear on each syllabus: *Freedom is learning. Students are responsible for learning the content of any course of study in which they are enrolled. Under Board of regents and University policy, student academic performance shall be evaluated solely on an academic basis and students should be free to take reasoned exception to the data or views offered in any course of study. Students who believe that an academic evaluation is unrelated to academic standards but is related instead to judgment of their personal opinion or conduct should first contact the instructor of the course. If the student remains unsatisfied, the student may contact the department head and/or dean of the college which offers the class to initiate a review of the evaluation.*