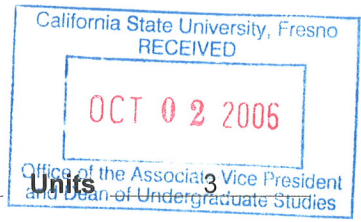


General Education Course Proposal



Proposed Course: AGEC 155 Environmental and Natural Resource Policy
Prefix No. Title

Department: Agricultural Economics **College/School:** CAST

GE Category (Indicate one category only):

Foundation: A1 ___ A2 ___ A3 ___ B4 ___
 Breadth: B1 ___ B2 ___ C1 ___ C2 ___ D ___ E ___
 Integration: B ___ C ___ D International/Multicultural ___

Existing Course **Revised Course** ___ **New Course** ___

Course Included in Current GE Program ___

New courses require the Undergraduate Course Proposal form in addition to this form.
 Revised courses require the Undergraduate Course Change Request in addition to this form.

Proposed catalog description: Limit course description to 40 words using succinct phrases. Include prerequisites, limitations, lecture/lab hours. Indicate former course number, e.g., (Former Biol 105)

Economic analysis of public policies governing land use, water management, energy generation, mineral exploitation and forest administration; review of population pressures and resource conservation; examination of externalities, property rights issues, resource use planning, agricultural zoning, environmental regulations, and reclamation law. GE Integration I.D.

Enrollment limit per section: 40 (Lecture/Discussion C2 classification)

Expected number of sections per semester - Year 1 1 **Year 3** 2

Attachments:

1. A statement presenting the ways in which this course meets the Specifications provided in the appropriate section of the General Education Policy as well as in the Policies for Inclusion and Evaluation of General Education Courses.
2. A statement of elements common to all sections of this course, identifying content, objectives, required student activities, grading policy, representative texts, and an approximate schedule for the course. Required student activities include such things as papers, research projects, homework, laboratory and/or studio performance, recitations, participation, attendance, and exams.
3. A typical syllabus for a particular offering of the course.
4. Any special cost factors associated with this course.

Approval for Inclusion in General Education

Bonnie 9-27-06
 Department Chair Date

W. R. Fane 9-29-06
 College/School Dean Date

Annus Lopez 3-7-2007
 Dean of Undergraduate Studies Date

Kathleen 9/29/06
 College/School Curriculum Committee Date

[Signature] 3-7-2007
 General Education Subcommittee Date

**Forward Original and TWELVE copies to:
 Dean of Undergraduate Studies Office, M/S TA 54**

Attachment #2: General Syllabus [Elements common to all sections of course]

Proposed Course: AG EC 155: Environmental and Natural Resource Policy

California State University, Fresno
College of Agricultural Sciences and Technology
Department of Agricultural Economics

Course: AG EC 155. Environmental and Natural Resource Policy 3 units

Description: Economic analysis of public policies governing land use, water management, energy generation, mineral exploitation, and forest administration; review of population pressures and resource conservation; examination of externalities, property rights issues, resource use planning, agricultural zoning, environmental regulations, and reclamation law.

Prerequisites: No Prerequisites

Course Status: General Education upper division Integrative Area D [See attached (insert) information sheet on G.E. Guidelines to be included in the syllabus here]

Required Text: Tietenberg, Tom. *Environmental and Natural Resource Economics*, 7th edition, Addison-Wesley publisher

Place/Time:

Professor:

Office: Peters Building (PB)

Office Hours:

Phone:

e-mail:

Work: Examinations
Homework Assignments
Writing Assignment(s) [including research/essay topic(s)]
[NOTE: The G.E. Writing Requirements will be adhered to and be described for students where the writing task is explained in the syllabus.]

Weighting: Per individual instructors (% value of exams and assignments)

Grading: Per individual instructors (standards)

Missed Examinations/Assignments: Per individual instructors (instructor's policy)

Attendance: Per individual instructors (instructor's policy)

UNIVERSITY POLICIES

Students with Disabilities: Upon identifying themselves to the instructor and the university, students with disabilities will receive reasonable accommodation for learning and evaluation. For information, contact Services to Students with Disabilities in Madden Library 1049 (278-2811).

Cheating and Plagiarism: "Cheating is the actual or attempted practice of fraudulent or deceptive acts for the purpose of improving ones grade or obtaining course credit; such acts also include assisting another student to do so. Typically, such acts occur in relation to examinations. However, it is the intent of this definition that the term 'cheating' not be limited to examination situations only, but that it include any and all actions by a student that are intended to gain an unearned academic advantage by fraudulent or deceptive means. Plagiarism is a specific form of cheating which consists of the misuse of the published and/or unpublished works of others by misrepresenting the material (i.e., their intellectual property) so used as one's own work." Penalties for cheating and plagiarism range from a 0 or F on a particular assignment, through an F for the course, to expulsion from the university. For more information on the University's policy regarding cheating and plagiarism, refer to the Schedule of Courses (Legal Notices on Cheating and Plagiarism) or the University Catalog (Policies and Regulations)

Computers: "At California State University, Fresno, computers and communications links to remote resources are recognized as being integral to the education and research experience. Every student is required to have his/her own computer or have other personal access to a workstation (including a modem and a printer) with all the recommended software. The minimum and recommended standards for the workstations and software, which may vary by academic major, are updated periodically and are available from Information Technology Services (<http://www/csufresno.edu/ITS/>) or the University Bookstore. In the curriculum and class assignments, students are presumed to have 24-hour access to a computer workstation and the necessary communication links to the University's information resources."

Disruptive Classroom Behavior: "The classroom is a special environment in which students and faculty come together to promote learning and growth. It is essential to this learning environment that respect for the rights of others seeking to learn, respect for the professionalism of the instructor, and the general goals of academic freedom are maintained. ...Differences of viewpoint or concerns should be expressed in terms which are supportive of the learning process, creating an environment in which students and faculty may learn to reason with clarity and compassion, to share of themselves without losing their identities, and to develop and understanding of the community in which they live ... Student conduct which disrupts the learning process shall not be tolerated and may lead to disciplinary action and/or removal from class."

Electronic Devices in the Classroom: All electronic devices, including but not limited to beepers and cell phones, must be turned off before the start of class. **ALL** exceptions must be cleared with me prior to their occurrence. Failure to comply with this policy will result in removal from the lecture/examination.

COURSE STRUCTURE

- I. **Introduction to Economic Concepts and Methods:** Includes at least all of the following:
 - A. Concepts and Methods in Natural Resource Valuation
 - 1. Normative versus Positive Economic Analysis
 - 2. Willingness to Pay, Demand, and Consumers' Surplus
 - 3. Marginal Cost, Supply, and Producers' Surplus
 - B. Optimal Outcomes
 - 1. Static & Dynamic Efficiency
 - 2. Pareto Optimality
 - 3. Social Welfare Function
 - a. Samuelson-Bergson
 - b. Maximum Value of Social Product
- II. **Benefit and Cost Estimation**
 - A. Direct Estimation
 - 1. Market Prices
 - 2. Simulated Markets
 - B. Indirect Estimation
 - 1. Travel Cost
 - 2. Hedonic Values
 - 3. Survey Methods, Engineering Approach, and Combined
 - C. Risk Analysis
 - 1. Sensitivity Analysis
 - 2. Discount Rate Selection
- III. **Property Rights and Market Failure**
 - A. Efficient Property Rights Structures
 - B. Common Property Resources, Externalities, Public Goods, and Imperfect Markets
 - C. Divergence between Social and Private Discount Rates
- IV. **Sustainable Development**
 - A. Two Period Model
 - 1. Fairness
 - 2. Sustainability Criterion
 - B. Policy Implications
- V. **Population Problem**
 - A. Historical Perspective
 - B. Effects of Population Growth on Economic Development
 - C. Effects of Economic Development on Population Growth

- D. Economic Approach to Population Control
 - 1. Value
 - 2. Fertility
 - 3. Income

- VI. **Allocation of Depletable and Renewable Resources:** Includes at least all of the following:
 - A. Resource Taxonomy
 - B. Two Period Model Revisited
 - 1. Constant Marginal Extraction Cost Case
 - 2. Transition Case
 - 3. Increasing Marginal Extraction Cost
 - 4. New Discoveries and Technological Progress

- VII. **Depletable, Non-recyclable Energy Resources:** Includes at least all of the following:
 - A. Natural Gas and Price Controls
 - B. Oil and OPEC
 - C. Oil: National Security Issue
 - D. Electricity and Transition Fuels
 - E. Hydroelectric Power

- VIII. **Recyclable Resources:** Includes at least all of the following:
 - A. Efficient Allocations
 - B. Strategic Materials
 - C. Waste Disposal
 - D. Taxes

- IX. **Water Resources:** Includes at least all of the following:
 - A. Water Scarcity
 - B. Efficient Allocations
 - 1. Groundwater
 - 2. Surface Water
 - C. Current Allocative Mechanisms
 - 1. Riparian versus Prior Appropriations Rights
 - 2. Sources of Inefficiency
 - 3. Water Transfers
 - 4. Federal Projects
 - 5. Water Pricing

X. **Agriculture:** Includes at least all of the following:

- A. Global Scarcity
 - 1. Hypothesis Formulation
 - 2. Testing the Hypothesis
 - a. Technological Progress
 - b. Land Use
 - 3. Agricultural Policy
 - a. Input and Output Prices I, Trade
 - 4. Distribution of Food Resources
 - a. Feast & Famine
 - b. The Poor

XI. **Forests:** Includes at least all of the following:

- A. Efficient Management
 - 1. Harvest
 - 2. Extension to the Basic Model
- B. Sources of Inefficiency
 - 1. Biodiversity
 - 2. Global Warming
- C. Implementing Efficient Management
 - 1. Debt-Nature Swaps
 - 2. Conservation Easements

XII. **Fisheries:** Includes at least all of the following:

- A. Efficient Allocations
 - 1. Static Sustainable Yield
 - 2. Dynamic Sustainable Yield
- B. Market Solutions
 - 1. Property Rights
 - 2. Free Access
- C. Public Policy
 - 1. Aquaculture
 - 2. Taxes, Quotas, and the 200-mile Limit

XIII. **Global Resource Scarcity:** Includes at least all of the following:

- A. Mitigation
 - 1. Exploration and Discovery
 - 2. Technological Progress and Substitution
- B. Detection
 - 1. Scarcity Indicators and Physical Resources
 - 2. Resource Prices and Scarcity Rent
 - 3. Marginal Discovery Cost and Marginal Extraction Cost

- C. Evidence
 - 1. Physical and Economic Indicators
 - 2. Extraction Cost and Price Trends

XIV. Overview of Pollution Economics: Includes at least all of the following:

- A. Efficient Allocation
- B. Market Allocations
- C. Cost Effective Policies

XV. Air Pollution: Includes at least all of the following:

- A. Local
 - 1. Conventional Pollutants
 - 2. Innovative Approaches
- B. Mobile-Source Air Pollution
 - 1. Policies
 - 2. Economic and Political Assessment
- C. Regional and Global
 - 1. Acid Rain
 - 2. Ozone Depletion/Global Warming

XVI. Water Quality Issues

- A. Nature of the Problem
 - 1. Sources
 - 2. Types
- B. Traditional Control Policies
 - 1. Legislation
 - 2. Point Sources and Non-point Sources
 - 3. Citizen Suits
- C. Efficiency and Cost Effectiveness
 - 1. Ambient and National Effluent Standards
 - 2. Operation, Maintenance, and Capital Costs

XVII. Toxic Substances

- A. Market Allocations
- B. Current Policy
- C. Criminal Law
- D. Assessment of Legal Remedies

XVIII. Environmental Justice

- A. Incidence of Hazardous Waste Siting Decisions
 - 1. Economics
 - 2. Policy Responses

- B. Incidence of Pollution Control Costs: Individual Industries
 - 1. Competitive Industries
 - 2. Incidence
- C. Incidence on Households
 - 1. Controls
 - 2. Point and Non-point Sources

XIX. Development, Poverty, and the Environment

- A. Growth Process
 - 1. Technological Progress and its limits
 - 2. Sources of Reduced Growth
 - 3. Environmental Policy
- B. Growth and Poverty: Industrialized Nations
 - 1. Average Citizen Concept
 - 2. Income Inequality
- C. Growth and Poverty: Less Industrialized Nations
 - 1. Forms of and Barriers to Development
 - 2. Population Growth

XX. Sustainability and Visions for the Future: Includes at least all of the following:

- A. Market Allocations
- B. Opportunities for Cooperation
- C. Can we Sustain development?

NOTE: The order and emphasis in covering these topics may vary according to the discretion of the instructor and with respect to contemporary issues.

TOPIC SCHEDULE

A week by week "Tentative Course Schedule" identifying topics and related reading assignments will be included in each instructor's syllabus reflecting their preferred sequencing of subject matter coverage. The sample from the University's "Course Syllabus Template" will be the model.

Subject to Change

This syllabus and schedule are subject to change in the event of extenuating circumstances. If you are absent from class, it is your responsibility to check on announcements made while you were absent

STUDENT LEARNING OBJECTIVES

The Students' major aims, upon completion of course, should be to have the ability to:

- A. Regarding Subject Matter
- 1) Define and apply natural resource economics concepts and principles for specific case examples.
 - 2) Evaluate proper role and extent of government intervention in the market to facilitate efficiency of operation and to enable market to be more effective in dealing with natural resource problems.
 - 3) Explore values conflict regarding preservation versus utilization of natural resources involving opposing interest groups with stakes in the decision and outcome.
 - 4) Understand the tradeoffs between economic growth and environmental degradation.
- B. Regarding Technical Skills
- 1) Perform a public *policy analysis* about economic problems and issues involving the functioning of markets and the effects of government intervention.
 - 2) Evaluate proposed solution to natural resource or environmental problem using Benefit/Cost Analysis method.
 - 3) Use Coase Theorem to assign individual property rights to natural resources that allow for market exchanges that lower transaction costs.
 - 4) Identify negative externalities as by-products of a production enterprise that pollute the environment and formulate ways in which they can be internalized to the business firm generating them as costs to others.
- C. Regarding Cognitive Processes
- 1) Think critically (analytically), by relying principally on established precepts and primarily invoking deductive (theory based) reasoning, to visualize familiar problems with great clarity in established ways.
 - 2) Think creatively (synthetically), by mainly developing new perspectives and invoking inductive (observation/experienced based) reasoning, to insightfully conceptualize old and new problems in alternative ways--thereby generating different types of solutions.
- D. Regarding Written Communication
- 1) Demonstrate organization of thought and logical reasoning in defining a problem and show ability to synthesize information efficiently, integrate ideas effectively, articulate the pros and cons of alternative solutions, evaluate evidence objectively, and argue a conclusion persuasively.
 - 2) Construct reports that conform to manual of style requirements (title page, table of contents, headings in text, bibliography, footnotes, etc.) and reflect clear organization through use of a multi-level outline.
 - 3) Write English with proper grammar, correct punctuation, right mechanics, accurate spelling, appropriate words, suitable style, acceptable phraseology, logical paragraphing--avoiding the most common errors.

COURSE STATUS

General Education: Ag Ec 155 is a social science course that qualifies as a General Education offering (Area D Social, Economic, and Political Systems). This particular course is designed to qualify for upper division Integration Area ID.

Purpose: To understand and analyze the basic principles underlying human social behavior.

Specifications: [Student Learning Outcomes]: (1) Study human social, political, and economic institutions and behavior and their historical background; (2) Examine problems and issues in contemporary as well as historical settings...; (3) Acquire knowledge enabling them to better live in a culturally diverse, international, and changing society; (4) Apply the methodologies and analytical concepts necessary to evaluate society today and promote more effective participation in the human community; (5) Explain the influence of major social, cultural, economic, and political forces on societal behavior and institutions;..." [Source: General Education Program Policies]

Integration Area ID: Social, Political, and Economic Institutions and Behavior, Historical Background. This area integrates material from lower-division Breadth Area D, particularly social, economic, and political disciplines.

Students completing courses in Area ID will be able to:

- 1) Deal with human social, political, and economic institutions and behavior and their historical background;
- 2) Reflect the fact that human social, political, and economic institutions and behavior are inextricably interwoven;
- 3) Examine problems and issues in these areas in their contemporary as well as historical setting, including both Western and non-Western contexts;
- 4) Learn to live in a culturally diverse and changing society; and/or
- 5) Prepare to function in an international, multicultural society.

G.E. Program Objectives: California State University, Fresno's General Education Program is an introduction to the breadth and depth of the dynamics of human experience. It provides students with a foundation in the liberal arts and sciences and prepares them for specialized study in a particular discipline or program.

The *overall objective* of General Education is to create a context wherein basic skills are developed and strengthened, scholarship and disciplined thinking emerge, awareness and reflection occur, and ultimately – the integration of knowledge begins.

The General Education Program is an integrated curriculum of courses organized into three phases: Foundation (Area A and Subarea B4) is the basic foundation of a student's university education and consists of courses in fundamental skills and knowledge. Breadth (Subareas B1, B2, B3, C1, and C2, and Areas D and E) exposes students to a variety of disciplines within a structured framework that develops knowledge and skills representative of all areas of human endeavor. Integration (Upper division courses in Areas B, C, and D) concludes the General Education Program by providing an integrative or interdisciplinary experience at the upper-division level in which the skills and knowledge developed in Foundation and Breadth are integrated, bringing their interrelationships into focus.

revised

FACULTY INFORMATION

Office: Peters Building (PB) 309
Office Hours: M-W: 1100-1150, T-TH: 0930-1100; by appointment
Phone: Office: (559) 278-2464 or Main Office: (559) 278-2949 or Cell: (559) 999-5140
e~mail: lynnw@csufresno.edu

COURSE INFORMATION

AG EC 155 **Environmental and Natural Resource Policy** **3.0 Units**
Place/Time: **AG 224** **0800-0915** **T-TH**

Economic analysis of public policies governing land use, water management, energy generation, mineral exploitation, and forest administration; review of population pressures and resource conservation; examination of externalities, property rights issues, resource use planning, agricultural zoning, environmental regulations, and reclamation law.

Required Text: *Environmental and Natural Resource Economics*, 7th edition, Tietenberg; Addison-Wesley

Assignments:

There will be five assignments during the semester. Each assignment will constitute five percent of the course grade. Assignments will vary depending on the understanding of the class in each section of the course. Typical assignments may include short essays, calculations and interpretations, and graphing.

Writing Requirement:

This course has a 2000 iterative word writing requirement. The topic of the assignment will be a natural resource or environmental issue proposed by you and approved by me. Specific requirements for the paper concerning spacing, style, and grading rubric will be provided later. The writing assignment will make up fifteen percent of your course grade.

Examinations:

There will be four major examinations during the semester. Examinations will include essays, graphing, and calculations. Each examination will constitute fifteen percent of the course grade.

Grading:

Each examination will have equal weight in computing course grades. Grades for individual examinations, assignments and the over-all course will be computed as in the following table.

<u>GRADE</u>	<u>PERCENT</u>
A	89.50 or Greater
B	79.50 to 89.49
C	69.50 to 79.49
D	59.50 to 69.49
F	Less Than 59.50

MY POLICIES

Missed Examinations

1. If you must miss an examination, I must be notified *PRIOR* to the missed examination.
2. All medical, funeral, and university-related excuses **MUST** be accompanied by a signed note, notice, obituary or letter/memorandum.
3. University-related activities are **NOT** an automatic excuse for missing examinations.
4. Failure to notify me before missing an examination will result in a **score of zero** for that particular examination.

Attendance:

Being in class is the surest way to help yourself perform well in this course. If you are late to class create as little disturbance as possible by sitting near the entrance of the classroom rather than your typical seat. Roll will not be taken. All students must take all examinations.

Electronic Devices in the Classroom:

All electronic devices, including but not limited to beepers and cell phones, must be turned off before the start of class. **ALL** exceptions must be cleared with me prior to their occurrence. Failure to comply with this policy will result in removal from the lecture/examination.

Other Points:

1. I will not be available for academic advising during the faculty consultation days (December 14 & 15).
2. Final grades will not be available until Friday, December 22.
3. Respect each other! Laugh often but, not at each other.
4. Ask questions! "I'm so lost I don't know what to ask."
5. Keep messages short!
6. I will not "re-grade", "take another look at", or anything else - to see if I can "find you some more points".
7. No whining!
8. Be supportive of your fellow students.

UNIVERSITY POLICIES

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INSTRUCTOR COURSE GOALS

1. Have students develop an appreciation for the uniqueness of environmental and resource policy.
2. Expand student's time horizons.
3. Develop in students an understanding of the complexities of environmental and resource policy issues based in part on the social and cultural aspects of problem definition and proposed solutions.
4. Engage students in discussions about environmental and resource policy initiatives.
5. Enable students to analyze the interface between the environment, natural resources and agriculture.

PRIMARY STUDENT LEARNING OUTCOMES

A. Regarding Subject Matter

- 1) Define and apply natural resource economics concepts and principles for specific case examples.
- 2) Evaluate proper role and extent of government intervention in the market to facilitate efficiency of operation and to enable market to be more effective in dealing with natural resource problems.
- 3) Explore values conflict regarding preservation versus utilization of natural resources involving opposing interest groups with stakes in the decision and outcome.
- 4) Understand the tradeoffs between economic growth and environmental degradation.

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DISCLAIMER

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TENTATIVE COURSE SCHEDULE (T-TH) - Topics will vary depending upon current issues

Topics covered or emphasized in this course will vary depending upon current events surrounding natural resource and environmental issues.

Date	Topic	Reading	Assignment
August 29, 2006	Introduction	Syllabus	Find the Room
August 31, 2006	Economic Theory	Chapters 1 -3	Read
September 5, 2006	Valuation Methods	Chapter 3	Read
September 7, 2006	Property Rights & Externalities	Chapter 4	
September 12, 2006	Property Rights & Externalities	Chapter 4	Assignment 1
September 14, 2006	Discount Rates	Chapter 4	
September 19, 2006	Dynamic Efficiency	Chapter 5	
September 21, 2006	Dynamic Efficiency	Chapter 5	Assignment 2
September 26, 2006	Examination I		Propose Paper Topic
September 28, 2006	Population	Chapter 6	
October 3, 2006	Depletable & Renewable Resources	Chapter 7	
October 5, 2006	Depletable & Renewable Resources	Chapter 7	Assignment 3
October 10, 2006	Depletable & Renewable Resources	Chapter 7	
October 12, 2006	Depletable & Renewable Resources	Chapter 7	
October 17, 2006	Examination II		
October 19, 2006	Energy	Chapter 8	
October 24, 2006	Energy	Chapter 8	
October 26, 2006	Energy	Chapter 8	Assignment 4
October 31, 2006	Water	Chapter 10	
November 2, 2006	Water	Chapter 10	
November 7, 2006	Water	Chapter 10	
November 9, 2006	Water	Chapter 10	
November 14, 2006	Examination III		
November 16, 2006	Pollution	Chapter 15	Paper Due
November 21, 2006	Pollution	Chapter 15	
November 28, 2006	Pollution	Chapter 16	
November 30, 2006	Pollution	Chapter 18	
December 5, 2006	Pollution	Chapter 19	Assignment 5
December 7, 2006	Agriculture	Chapter 11	
December 12, 2006	Agriculture	Chapter 11	
December 14 & 15	Faculty Consultation		
December 21 - Thursday	Examination IV: 0845-1045		

SUMMARY COURSE OUTLINE

- I. Valuing the Environment, Property Rights, and Dynamic Efficiency
 - A. Basic Economic Theory
 - B. Basis for Valuation
 - C. Efficient Property Rights Structures
 - D. Externalities
 - E. Dynamic Efficiency

- II. Population and Depletable Resources
 - A. Population Structures and Age Distributions
 - B. Externalities in Population Policies
 - C. Theoretical Basis for allocating Depletable Resources

- II. Energy and Water
 - A. Basis for Energy Policy
 - B. Energy and National Security
 - C. Energy and Agricultural Policy
 - D. The economics of water allocation
 - E. California Water Policy

- IV. Pollution and Agriculture
 - A. Water Quality and Policy Implications
 - B. Air Quality and Policy Implications
 - C. Agricultural and Environmental and Natural Resource Policy Interface