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STATE UNIVERSITY
Advanced Environmental Economics [ECO – 5621]

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Economics Department
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Course Description and Objective: Natural resources and the environment are used both as inputs into production (e.g., timber used to build homes) and final consumption goods (e.g, visits to national parks). Unlike other factors of production and\or goods and services, markets for natural resources and the environment are incomplete. As a result economic agents do not receive the usual price signals that guide the market to an efficient outcome. Thus the market fails. The objective of this course is to use economic analysis to understand the reasons for market failure and evaluate government policies used to correct market failure.

Course Website (AsULearn): The course website can be accessed by logging into AsULearn with your user name and password. Here is the link: http://asulearn.appstate.edu/

Required Text and Materials: The required text is: *Environmental Economics* (2nd Edition, 2010) by Charles Kolstad. You will also need a calculator. Any simple calculator will suffice. I will be posting a lot of supplementary material (academic and news articles) on the course website and I recommend using a binder/folder to keep your materials and notes organized.

Prerequisite: *The prerequisite for this course is the first course in Price Theory - ECO 2030. If you have not met the prerequisites for this course, you are subject to being dropped even if you were able to register for the class initially.*

Exams: There will be (2) semester exams and (1) final exam, each out of 100 points. The final exam will be comprehensive. The average of your (3) exam scores will account for 35% of your course grade.

Problem Sets: (4) problem sets will be assigned throughout the semester. The problem sets will be assigned during lecture and will be posted on the course website. Because many of the questions require you to draw graphs and/or solve equations, many of you will prefer to submit hand-written problem sets. That is fine provided that your writing is legible. You may also submit an electronic copy before the announced due date. The problem sets will be out of 100 points. The average of your (4) problem sets will account for 35% of your course grade.

Essays: Roughly every other week I will assign journal articles for you to read. You will be given an essay question in tandem with the assigned articles. Your essay must be brief (2 pages or less, double spaced, 12 point Times Roman font, 1 inch margins - not including graphs or figures). Essays will be graded out of 100 points. There will be between 5 and 7 assigned essays throughout the semester. The average of your essays will count for 20% of your course grade.

Participation/Attendance: You are required to come to class and to participate. Throughout the semester we will have in-class exercises (e.g., economics experiments) so it is compulsory that you attend class. Your participation/attendance grade will be from 0 to 100 and will account for 10% of your grade.

Grading: Your course grade (as percentage) will be determined by the following equation:

$$\left[\frac{\sum Exam\ grades}{3}*(0.35)+\frac{\sum Pr\ oblem\ set\ grades}{4}*(0.35)+\frac{\sum Essays}{(\#\ of\ Essays)}*(0.20)+Participation*(0.10)\right]*100 = x$$

Grading Scale: Use the chart below to convert your percentage grade to letter grade.

Grade	Percentage	Grade	Percentage
A	$x \geq 93$	**C**	$77 > x \geq 73$
A-	$93 > x \geq 90$	**C-**	$73 > x \geq 70$
B+	$90 > x \geq 87$	**D+**	$70 > x \geq 67$
B	$87 > x \geq 83$	**D**	$67 > x \geq 63$
B-	$83 > x \geq 80$	**D-**	$63 > x \geq 60$
C+	$80 > x \geq 77$	**F**	$60 > x$

Conduct: I expect all students to behave in a respectful manner during lecture and to adhere to the University's *Code of Student Conduct* and *Academic Integrity Code* (both found online on the ASU website). This includes coming to lecture on time and not leaving early. If you must leave early, please notify me in advance.

Tentative Timeline: Exam 1 will be given in late February; Exam 2 sometime in April and the comprehensive Final Exam will be given during finals week. I reserve the right to change any of these times as the semester progresses.

Topics Covered:

1. Introduction to Environmental Economics
  a. What is Environmental Economics and why do we need it?
  b. Topics covered and overarching goals

2. Environmental Problems and Types of Regulations
  a. Air pollution
  b. Water pollution
  c. Toxic chemicals
  d. Approaches to regulation (U.S., E.U., developing world)

3. The Optimal Amount of Environmental Protection
  a. Individual-level preferences
  b. Social choice from individual-level preferences
  c. Utility and indifference curves
  d. Social choice mechanisms
  e. Social welfare functions

4. Efficiency and Competitive Markets
        a. Supply and demand
        b. Consumer and producer surplus
        c. Benefit-cost analysis

5. Market Failure: Public Goods, Bads and Externalities
        a. Public goods
        b. Externalities

6. Property Rights and the Coase Theorem
        a. Property rights
        b. Coase Theorem
        c. Policy implications of the Coase Theorem

7. Taxes and Subsidies
        a. Taxes
        b. Equi-marginal conditions
        b. Subsidies vs. Taxes

8. Regulation
        a. Command and control
        b. Emissions Taxes
        c. Tradeable Permits (i.e., cap-and-trade)
        d. Taxes vs. Permits
        e. Waxman-Markey Bill in the United States

9. Regulation under Uncertainty
        a. Relaxing the information assumptions
        b. Prices vs. quantities under uncertainty
        c. Enforcing compliance with environmental regulation
        d. Waxman-Markey Bill (revisited)

10. Transboundary Environmental Problems
        a. Global environmental problems
        b. Economics of International Environmental Agreements
        c. Participation and compliance with International Environmental Agreements

11. Renewable Resources – The Fishery
        a. The open-access problem
        b. Command-and-control policies
        c. Individual Transferable Quotas

Special Topics: Valuation of Non-Market Resources