

**AEC 445 – RESOURCE AND ENVIRONMENTAL ECONOMICS**  
**Texas A&M University-Commerce**  
**School of Agriculture**  
**Spring 2015**

**Instructor:** Dr. Jose Lopez

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**Class Time:** TR 9:30 a.m. - 10:45 a.m., AGIT Room 238

**Office Hours:** For immediate consultation I will be available Mondays and Wednesdays from 10:30 a.m. - 11:30 p.m., and Tuesdays and Thursdays from 2:00 p.m. – 5:00 p.m. or by appointment. You are also welcome to stop by my office at any other time. If I am unable to meet with you at that time, we will schedule an appointment. The best way to contact me is via email at [Jose.Lopez@tamuc.edu](mailto:Jose.Lopez@tamuc.edu). You can also email me from eCollege (<http://www.online.tamuc.org/>).

**Required Text:** *Environmental & Resource Economics* by Tom Tietenberg and Lynne Lewis. Addison-Wesley, New York, 8<sup>th</sup> Ed., 2008. (ISBN 9780321485717 or ISBN 0321485718)

**Prerequisites:** None.

**Teaching Philosophy:**

1. A course must deliver information, concepts and methods that will be useful in the student's professional life. However, learning analytical reasoning skills and improving the ability to process and use information efficiently is more important than memorizing facts and formulas and performing procedures repeatedly.
2. Students learn best when theories, concepts and procedures are explained in plain language as well as formally, and are complemented with examples or applications that are relevant to the students.

**Character Formation:** It is important during your college education to learn the values and rewards of hard work, responsibility, honesty and striving for excellence at all times. The professor will promote character formation while teaching the course.

**Course Description:** This course explores approaches agricultural economists take to solve environmental and/or natural resource economic problems. It examines both the economic roots of environmental problems and the alternative solutions that may be implemented. The course introduces fundamental questions a policymaker must answer to analyze policy scenarios and determine environmental regulations, including issues related to efficiency and distribution.

**Student Learning Outcome:** To provide students with economic concepts that can be applied to the solution of current environmental problems. Upon completion of the course the student will have an understanding of the economic tools employed in the management and protection of natural and environmental resources. This student learning outcome will be measured by demonstrating understanding of following natural resource economics topics.

## **Topics:**

### **Part I: Introduction to Environmental Problems and Comparison of Ideology**

#### **Chapter 1: Vision of the Future**

- Has society chosen a path that can only lead to its destruction? Chapter 1 examines two different views to this question: the pessimistic view and the optimistic view.

#### **Chapter 2: Valuing the Environment: Concepts**

- The general conceptual framework to approach environmental problems. A discussion about human actions, their relationships, consequences, and criteria for judging the outcomes. The basis for identifying the nature and severity of environmental problems, and designing effective policies to deal with them.

### **Part II: Evaluation Criteria to Current Environmental Problems**

#### **Chapter 3: Valuing the Environment: Methods**

- The implementation of benefit/cost analysis in an environmental context. Identification and discussion of the various valuation techniques for environmental resources in both ex ante and ex post settings. A discussion of the strategies that exist for using economics to protect the environment.

#### **Chapter 4: Property Rights, Externalities, and Environmental Problems**

- The concept of property right and how it can be used to understand why the environment can be undervalued by both the market and governmental policy. A discussion on how the government and the market can use knowledge of property rights to resolve difficulties emerging from diverse interests between an individual or group and those of society at large.

#### **Chapter 5: Dynamic Efficiency and Sustainable Development**

- The treatment of future generations. The allocation of a depletable resource over time. The temporal allocation of a depletable resource using a dynamic efficiency criterion. A discussion of intertemporal fairness, dynamic efficiency, and intergenerational fairness.

### **Part III: Natural Resource Economics**

#### **Chapter 6: The Population Problem**

- How population affects and is affected by the development process. Microeconomic issues dealing with economic determinants of fertility. The causes and consequences of population growth and approaches for controlling population growth.

#### **Chapter 7: The Allocation of Depletable and Renewable Resources: An Overview**

- A simple but useful resource taxonomy. An explanation of the danger of ignoring the distinctions made by this taxonomy. The allocation of an exhaustible resource over time when no renewable substitute is available. The conditions any efficient allocation must satisfy. Examples illustrating the meaning of these conditions.

#### **Chapter 8: Energy: The Transition from Depletable to Renewable Resources**

- Issues associated with the allocation of energy resources over time and how economic analysis can clarify our understanding of both the sources of the problems and their solutions.

#### **Chapter 9: Recyclable Resources: Minerals, Paper, Bottles, and E-Waste**

- What is an efficient amount of recycling? Will the market automatically generate this amount in the absence of government intervention? How does the efficient allocation over time differ between recyclable and nonrecyclable resources?

**Grading:**

Exam 1.....	25.00%
Exam 2.....	25.00%
Exam 3.....	25.00%
Student presentations.....	5.00%
Quizzes.....	10.00%
Attendance + Participation.....	10.00%
	<hr/>
	100.00%

Note: There would be an optional final comprehensive exam (Exam 4). The optional final comprehensive exam will replace one (the lowest) exam grade (if you decide to take it).

**Grading Scale:**

<u>Range</u>	<u>Grade</u>
90-100.00	A
80-89.99	B
70-79.99	C
60-69.99	D
Less than 60	F

**Exams:** No makeup exams will be offered. A grade of zero will be assigned to any missed exam. Make sure you arrive in time.

**Quizzes:** Quizzes will be graded and should be considered very important material course material for your exam preparation. Students are welcome to ask questions during office hours. Quizzes involve economic concepts, principles, methods and procedures that are applied to environmental problems. The students will take the quizzes via eCollege. The instructor will announce the deadlines in class.

**Review Questions:** Review Questions will not be graded. Students are welcome to ask questions during office hours. Review Questions summarize and assist students understanding the materials covered by the instructor and should also assist students in preparing for quizzes and exams. Consider the Review Questions as a Study Guide for the exams. The students are NOT required to submit their answers.

**Student Presentations:** Students will form teams of 2 or 3 students depending on the number of students enrolled in the course. Each team will then prepare one PowerPoint presentation from relevant articles, topics discussed in the textbook, and/or topics provided by the instructor. For example, students can visit *The International Society for Ecological Economics* (<http://www.ecoeco.org/content/>), the *Online Encyclopedia of Ecological Economics* ([http://www.ecoeco.org/education\\_encyclopedia.php](http://www.ecoeco.org/education_encyclopedia.php)), and/or the *Association of Environmental and Resource Economics* (<http://www.aere.org/>) and browse for articles, references, websites, or web data sources of the team's interest.

**Class Attendance:** A maximum of two unexcused absences will be allowed. Each additional unexcused absence will reduce your earned attendance grade by 3.33 points (30 meetings \* 3.33 ≈ 100 points). The student is expected to use the unexcused absences for the days he/she gets sick or cannot attend to class because of a non-serious foreseeable or unforeseeable cause (e.g.,

flat tires, car problems, not feeling well, doctor appointments, visits to health clinics, field trips, sport activities and events, etc.). Excused absences must be for serious and unforeseeable causes, and fully documented. The instructor will pass attendance every class day during the first 5 minutes. If you are late, but arrive during the first 15 minutes of class, you should contact the instructor at the end of the class and you will earn ½ of a regular class attendance. It is your responsibility to contact the instructor in these cases. Similarly, if you come to class, you are required to stay until the end of the class period; otherwise, you will earn ½ of a regular class attendance.

**Class Participation:** Students should come to class prepared by reading and completing course assignments prior to class. It is the students' responsibility to be familiar with and understand all previously covered material prior to each new lecture. Class participation is about answering the instructor's questions and/or providing your constructive comments, ideas, or opinion when discussing examples, homework, and exercises. Students are encouraged to ask questions when they do not understand the class material; however, asking questions regarding material students do not understand is not considered class participation.

**Students with Disabilities:** The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

**Office of Student Disability Resources and Services**  
**Texas A&M University-Commerce**  
**Gee Library**  
**Room 132**  
**Phone (903) 886-5150 or (903) 886-5835**  
**Fax (903) 468-8148**  
[StudentDisabilityServices@tamuc.edu](mailto:StudentDisabilityServices@tamuc.edu)

**Counseling Center:** A student that faces a crisis or a serious and unforeseeable event that affects his/her class performance must contact the Counseling Center, Student Services Building, Room 204, Phone (903) 886-5145. If important class material or course assignments are missed because of such crisis or event, the student must contact the instructor as soon as possible.

**General Policies for Classes:** All students enrolled at the University will follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. See Student's Guide Handbook, Rules and Procedures, Code of Student Conduct (<http://www.tamuc.edu/CampusLife/documents/studentGuidebook.pdf>).

**Academic Integrity:** Students must follow the *Code of Student Conduct* in the *Student Guidebook* (<http://web.tamuc.edu/admissions/studentGuidebook.aspx>). Any form of plagiarism or academic dishonesty will not be tolerated. Academic honesty is defined on *Chapter 13 Students (Academic)* of the *TAMUC Rules and Procedures* (<http://web.tamuc.edu/aboutus/policiesproceduresstandardsstatements/rulesprocedures/>):

“Academic dishonesty” includes, but is not limited to, plagiarism (the appropriation or stealing of the ideas or words of another and passing them off as one's own), cheating, collusion (the

unauthorized collaboration with others), and abuse (destruction, defacing, or removal) of resource material.

**Course Design:** A separate sheet containing the course outline and class schedule as well as tentative scheduled activities and exams is provided at the end of this syllabus. Make sure you regularly check this page so that you come to class prepared.

**eCollege:** This course will be enhanced using eCollege. Students are required to download PowerPoint presentations and other important class material from the eCollege website for the course (<http://www.online.tamuc.org/>). You will need your CWID and password to log in to the course. Make sure you visit eCollege when preparing for class.

If you do not know your CWID or have forgotten your password, contact Technology Services at 903.468.6000 or [helpdesk@online.tamuc.org](mailto:helpdesk@online.tamuc.org)

**Technology Requirements:** The following information has been provided to assist you in preparing to use technology successfully in this course.

- Internet access/connection – high speed recommended (not dial-up)
- Word and Spreadsheet Processor (i.e. MS Word or Word Perfect and MS Excel or a spreadsheet processor)

Additionally, the following hardware and software are necessary to use eCollege:

Our campus is optimized to work in a Microsoft Windows environment. This means our courses work best if you are using a Windows operating system (XP or newer) and a recent version of Microsoft Internet Explorer (6.0, 7.0, or 8.0).

Your courses will also work with Macintosh OS X along with a recent version of Safari 2.0 or better. Along with Internet Explorer and Safari, eCollege also supports the Firefox browser (3.0) on both Windows and Mac operating systems.

It is strongly recommended that you perform a “Browser Test” prior to the start of your course. To launch a browser test, login in to eCollege, click on the ‘myCourses’ tab, and then select the “Browser Test” link under Support Services.

**Important Dates:**

January 19, Monday	Martin Luther King Jr. Day (No Class)
January 20, Tuesday	First day of classes.
February 5, Thursday	Last day to drop a 16 week course with 100% refund and no grade.
March 16 – March 20	Spring Break (No Class)
May 8, Friday	Last day of classes.
May 14, Thursday	Optional Final Comprehensive Exam, 8:00 - 10:00 a.m.

*The instructor reserves the right to make modifications to this syllabus during the semester.*

**AEC 445 – Resource and Environmental Economics**  
**Class Schedule, Spring 2015**  
**TR 9:30 - 10:45 a.m.**

<b>January</b>			
Tuesday	Jan 20	<b>Intro</b>	<b>Syllabus</b>
Thursday	Jan 22	<b>Part I</b>	<b>Introduction to Environmental Problems and Comparison of Ideology</b>
		Chapter 1	Vision of the Future
Tuesday	Jan 27	Chapter 1	(continued)
		Chapter 2	Valuing the Environment: Concepts
Thursday	Jan 29	Chapter 2	(continued)
Tuesday	Feb 3	Chapter 2	(continued)
		<b>Part II</b>	<b>Evaluation Criteria to Current Environmental Problems</b>
		Chapter 3	Valuing the Environment: Methods
Thursday	Feb 5	Chapter 3	(continued)
<b>February</b>			
Tuesday	Feb 10	Chapter 3	(continued)
Thursday	Feb 12	Chapter 3	(continued)
			<b>2 Student Presentations (20-25 minutes each presentation)</b>
Tuesday	Feb 17	Chapter 3	(continued)
Thursday	Feb 19	<b>Exam I</b>	
Tuesday	Feb 24	Chapter 4	Property Rights, Externalities, and Environmental Problems
Thursday	Feb 26	Chapter 4	(continued)
Tuesday	Mar 3	Chapter 4	(continued)
			<b>Submit via eCollege your Term Project Memorandum</b>
Thursday	Mar 5	Chapter 4	(continued)
		Chapter 5	Dynamic Efficiency and Sustainable Development
<b>March</b>			
Tuesday	Mar 10	Chapter 5	(continued)
			<b>2 Student Presentations (20-25 minutes each presentation)</b>

Thursday	Mar 12	<b>Part III</b>	<b>Natural Resource Economics</b>
		Chapter 6	The Population Problem
Tuesday	Mar 17	<i>Spring Break (No Class)</i>	
Thursday	Mar 19	<i>Spring Break (No Class)</i>	
Tuesday	Mar 24	Chapter 6	(continued)
Thursday	Mar 26	Chapter 6	(continued)
Tuesday	Mar 31	<b>Exam II</b>	
Thursday	Apr 2	Chapter 7	The Allocation of Depletable and Renewable Resources: An Overview
<b>April</b>			
Tuesday	Apr 7	Chapter 7	(continued) <b>2 Student Presentations (20-25 minutes each presentation)</b>
Thursday	Apr 9	Chapter 7 Chapter 8	(continued) Energy: The Transition from Depletable to Renewable Resources
Tuesday	Apr 14	Chapter 8	(continued)
Thursday	Apr 16	Chapter 8	(continued)
Tuesday	Apr 21	Chapter 8	(continued)
Thursday	Apr 23	Chapter 8	(continued)
Tuesday	Apr 28	Chapter 8	(continued)
Thursday	Apr 30	Chapter 9	Recyclable Resources: Minerals, Paper, Bottles, and E-Waste
Tuesday	May 5	Chapter 9	(continued)
<b>May</b>			
Thursday	May 7	Chapter 9	(continued)
Thursday	May 14	<b>Final Exam (8:00 -10:00 a.m.)</b>	

*This is a tentative class schedule. The instructor reserves the right to make any modification.*