PRINCIPLES OF ENVIRONMENTAL ECONOMICS

AGEC 3413 (H) and ENSC 3413 (H) Spring Semester 2020
Meets: MWF 12:55-1:45p.m. Room: Plant Science 9

Please read over this syllabus completely because the information will help you succeed in this class. The syllabus can be downloaded from Blackboard under the Syllabus folder. Good to have you in the class!

Instructor Information:
Dr. Kent F. Kovacs
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Teaching assistant (TA) Information:
Mr. Dalton Craig
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Description in Course Catalog:
An issues-oriented course in the economics of the environment. What is involved in society making decisions about environmental quality will be studied. Environmental issues important to the state of Arkansas and the United States will be emphasized. *The syllabus is subject to change.*

Course Prerequisites: AGEC 1103 or ECON 2023. Students are responsible to know all prerequisite materials.

Course Objectives:
Each student who successfully completes this course will have developed the skills to apply microeconomic tools and concepts to sustainable resource use, management, and policy. Students will apply the tools learned to case studies during the semester. Each student who successfully completes this course will be able to:

- explain why optimal pollution levels are usually not zero
- define and explain market and social equilibriums
- understand concepts of willingness to pay
- understand market & non-market valuation techniques
- calculate present values of benefits and costs
- explain concepts of standards and market means for pollution control and know when to apply each
- apply environmental economic theory to issues related to land, water, air, agriculture and sustainable development
- explain the important connections between environmental policy and the economy

Honors Section:
This is a great way to get honors credit. Please consider enrolling in honors even if you are not an honors student. Honors students will be given additional coursework (and will meet occasionally outside of class) in order to qualify for honors credit. Talk to Dr. Kovacs to make sure you are enrolled for Honors credit.

Office Hours:
Regular office hours for Dr. Kovacs held in AGRI 216 are scheduled for Tuesdays and Thursdays from: 1:30-3:00p.m. I welcome any questions that you may have. I encourage you to stop by and ask questions. Office hours for Mr. Craig held in the Agricultural Building, Room 230 are on Mondays and Wednesdays from: 10:30-12:00p.m. You can call or e-mail to schedule an appointment for another time. The better means of contact for both of us is *e-mail*.

Contacting Dr. Kovacs and Mr. Craig
Dr. Kovacs and Mr. Craig will attempt to answer calls/emails within 24-48 hours if they are received Monday 8:00am to Friday 4:00pm. Email is not regularly reviewed over the weekends. When emailing Dr. Kovacs and Mr. Craig, please make the subject title of the email AGEC 3413 if you want it to be seen in a timely manner. Please send ALL emails to BOTH instructors. This will help ensure we see your email quickly and it provides proof (if we both receive it) that you indeed sent the message, in the event that one of us cannot locate it. Do not send email through Blackboard. It disappears down a black hole never to be found again.

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Check Your Email Daily
Email is the official primary form of communication for this course, outside of what is said in class. Be sure to check your email daily for any announcements regarding course assignments, potential quizzes, etc. This will help you do the best possible in class!

Course Home Page and Blackboard:
Material for this course, including syllabus, lecture notes, and homeworks, can be found on Blackboard. You can reach Blackboard at http://learn.uark.edu. Login with your uark email username (do not use the "@uark.edu") and password. Once enrolled in AGEC/ENSC 3413/H, the course will appear in your My Courses listing. Once in the course, click on the item of interest like "Assignment" and then the menu under that item will come up and you click on the item of interest.

Textbooks:
Our primary textbook will be *Environmental Economics and Management: Theory, Policy and Applications* by Scott Callan and Janet Thomas. Southwestern Cengage Learning. This book is available from the bookstore. However, I have placed multiple copies of older editions of the text in Mullins library. This will work for most assignments. These copies are available for short-term check out. These older copies were also found online used for under $10 a copy.

Another good source for help is Field's *Environmental Economics: an introduction*, 5th Edition. McGraw Hill Irwin. Additional materials are suggested during lectures and found on the "Resources" page on Blackboard.

Students may want to use the following free documents as references and for some assignments:

- "Guidelines for Preparing Economic Analyses" available at https://www.epa.gov/environmental-economics/guidelines-preparing-economic-analyses.
- "Sustainability and the US EPA" also available by free download at https://www.epa.gov/sustainability/sustainability-and-us-epa.

Grading:

Exam 1, 2 & 3	75%	Assignments and Final Exam	15%
Daily Quiz	10%	Total	100%

Grades will be assigned as follows: A: > 90% B: 80 - 89 % C: 70 - 79 % D: 60 - 69 % F: < 60 %

The instructor reserves the right to round up on borderline cases as a function of participation. You are not allowed to drop any grades throughout the semester. No grades can be dropped.

Calculating Your Grades:
Students are responsible for keeping track of their grades throughout the semester. All grades will be placed on Blackboard within a week of being earned (barring unforeseen circumstances). The lag time is included in case of the need for grade changes.

Fixing a Grading Error on Blackboard:
Please verify immediately that the grade listed on Blackboard is the grade you earned. If not, please make Mr. Craig aware of the error immediately by turning back in the assignment/quiz/exam that shows the correct grade. Corrections must be made within one week of being returned in class. All errors must be brought to our attention in person because we need the assignment.

Exams:
Please remove all hats before a quiz or an exam. Please bring a #2 pencil to all exams. You must use the calculator provided by the AEAB dept. There will be three (3) exams during the regular semester. Students cannot drop any of the three exams given this semester. Make up exams may be permitted and taken outside of class hours and must be

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arranged prior to the exam unless it is a medical emergency (personal or close family). Dr. Kovacs may randomly reassign seats on exam and quiz days. The final exam will take place at the scheduled final time.

Take Home Assignments:
Take home assignments are posted on blackboard. They must be turned in at the start of class on the day they're due to get points. Answers are provided in class after assignments are turned in. If you would like assistance, please visit Dr. Kovacs or our TA during our office hours. All students must turn in their own work.

Daily Quizzes:
A daily quiz is given at the start of nearly every class. Quiz questions will be based on text and class material as well as guest lecturers, student presentations and/or project materials. Daily quizzes are the easy way to improve your grade. You get extra point opportunities every day (so if you miss class no need to make them up!). Here is how it works. Students must earn an average of 2 points (out of a possible 5 points) each quiz day in order to get a perfect score. Students are given an opportunity to earn three bonus points on each quiz (so if you miss a class or two, you're covered).

Daily quiz points will not be awarded to a student who leaves class early without a valid confirmed reason even if he/she was there to take the quiz. Daily quiz grades cannot be dropped.

Seating:
Students will have the opportunity to explore the classrooms during the first week of class. However, the seat you choose on January 22nd will be yours for the rest of the semester. This is necessary for the distribution of daily quiz and returned assignments/quizzes/tests in a timely manner. Further it helps the two of us get to know you! Choose your seat wisely. Anyone not in attendance that day will have their seat chosen for them (likely in the front row). If you have any special circumstances (e.g, visual, hearing) that require you to sit in a particular area, please let Dr. Kovacs know, and we will do our best to accommodate.

Class Notes and Reading of the Textbook:
An effort will be made to place class notes on Blackboard by 5:00 PM the Friday before the start of the new lecture week. Even when available, these notes will not be complete, they will not include notes relevant to some in-class discussions or other non-text readings and thus cannot replace note taking in class. Students are strongly encouraged to read all materials before the class as this course moves at a good pace. Powerpoints may include a list of required readings; others will be announced in class. Be prepared to take notes in class, it will help for the quizzes/exams!

Use of Computers and Cell Phones During Class:
In general, computers may not be used during class. If you have special circumstances that require you to use a computer, you must have it approved by Dr. Kovacs at least one class period in advance of using the computer. Dr. Kovacs reserves the right to choose the seats of anyone needing computer usage (most likely front row). In general, cell phones are not allowed to be used in class.

Students using a cell phone or computers for <u>any</u> purpose in class (other than a designated emergency as described below or another use pre-approved by Dr. Kovacs) will be considered in violation of academic honesty rules and will be reported for sanctions. These computer and cell phone policies have been developed on the recommendations of students who found the inappropriate behavior distracting. We want to minimize distractions so everyone can learn.

Emergency Procedures:
The following information has been provided to us from the Provost's office. *Many types of emergencies can occur on campus; instructions for specific emergencies such as severe weather, active shooter, or fire can be found at* ***<u>emergency.uark.edu</u>***.

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Severe Weather (Tornado Warning):

- *Follow the directions of the instructor or emergency personnel*
- *Seek shelter in the basement or interior room or hallway on the lowest floor, putting as many walls as possible between you and the outside*
- *If you are in a multi-story building, and you cannot get to the lowest floor, pick a hallway in the center of the building*
- *Stay in the center of the room, away from exterior walls, windows, and doors*

Violence / Active Shooter (CADD):

- ***CALL-*** *9-1-1*
- ***AVOID-*** *If possible, self-evacuate to a safe area outside the building. Follow directions of police officers.*
- ***DENY-*** *Barricade the door with desk, chairs, bookcases or any items. Move to a place inside the room where you are not visible. Turn off the lights and remain quiet. Remain there until told by police its safe.*
- ***DEFEND-*** *Use chairs, desks, cell phones or whatever is immediately available to distract and/or defend yourself and others from attack.*

In case of a tornado, our classroom and the hallway/stairwell outside of our classroom can serve as shelter. For other scenarios, if we need to vacate the classroom quickly, please be aware that exits include the door to the Plant Science building hallway (the main classroom entry/exit way) as well as the emergency exit by the instructor lectern in the front of the classroom. Please let Dr. Kovacs know if you have any questions or concerns.

Center for Educational Access:
Students who have received official university approval for alternate accommodations must present the official paperwork to Dr. Kovacs during the first week of class. *If part of your accommodation includes a different setting for the exam, please inform me at least one week before the exam so I can guarantee that your request can be met.* We have limited access to viable locations so time is needed to guarantee the space. Thank you!

Student Travel:
If you participate in a UA sponsored organization that requires you to travel, you will be excused from class but not from completing the material or from daily quiz. Be sure to earn those extra points each day! Apart from daily quiz, assignments/quizzes deadlines that overlap with scheduled travel (e.g., conferences, competitions, sporting events) must be completed before leaving for your trip. Travel made for personal reasons can also be approved but same rules for completing assignments holds here as well.

Extra Credit:
There are plenty of opportunities to earn lots of points as the course is structured. Please be sure to do your best on all assignments, quizzes and exams. No other credit opportunities will be given.

Academic Dishonesty:
All UA faculty have been encouraged to include the following statement in the syllabus.
As a core part of its mission, the University of Arkansas provides students with the opportunity to further their educational goals through programs of study and research in an environment that promotes freedom of inquiry and academic responsibility. Accomplishing this mission is only possible when intellectual honesty and individual integrity prevail. Each University of Arkansas student is required to be familiar with and abide by the University's 'Academic Integrity Policy' which may be found at http://provost.uark.edu/. Students with questions about how these policies apply to a particular course or assignment should immediately contact their instructor.
In particular, please visit http://provost.uark.edu/246.php for sanctions. This is serious stuff. Please do not place yourself or other students in a position to have to face such consequences.

Inappropriate Sharing of Course Materials:
All notes/problem sets/quizzes/exams provided to you this semester are for the expressed usage of this course only. According to UA rules, students found sharing these materials (with individuals/websites/etc.) without written consent from Dr. Kovacs will be subject to both legal and academic disciplinary action. Let's avoid this! If you have any questions, please check with Dr. Kovacs before you share.

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Severe Weather:
If both the University and Fayetteville school district are open by our class time, class will be held as scheduled. If UA is open but Fayetteville is closed, please check your email regarding attendance. Please use your best judgment before getting on the road – we want you to be safe! *Students who live off campus will have the opportunity to make up a missed exam in the case of inclement weather. However, to receive full credit on any assignments due that day, the assignment must be posted on blackboard by its due date/time.*

Dropping this Class:
Valid situations can arise that warrant dropping a class. However, please see Dr. Kovacs before you drop the class so we can properly assess whether this is in your best interest.

Managing Our Scarce Resources:
As environmental economists, we value our scarce resources. There are some on campus who have moved their classes to a complete electronic format. In this class, I will provide to you the syllabus, notes and other handouts in electronic format with the hopes you will use the double sided printers on campus to print them as needed only once. In order to best grade your assignments and exams, most will need to be turned in as a hard copy. When things are required to be turned in in a hard copy, please optimize the use of the paper by writing/printing on both sides and minimizing your margin widths. Shred and recycle all papers at the end of the semester.

We Look Forward to Working with You This Semester!
Students taking this course come from a variety of backgrounds. Some have a strong understanding of economics; others have strengths in other sciences, engineering, 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.

Our goal is to make this class a practical, challenging and rewarding experience for everyone.

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Course Outline. (*Dates/materials are subject to change. Please attend class for updates!*)

Week	Week of	Topic	Readings and Announced Assignments (See end of Syllabus for more information.)
1	Jan 13	Introduction and Review of Economics	• Chapters 1 and 2 Callan and Thomas (6th edition) Elasticity and econ reviews placed on blackboard
2	Jan 20	Review of Economics con't	Same course materials as previous week
3	Jan 25	Market Failure	• Chapter 3 Callan and Thomas (6th edition)
		LAST DAY TO DROP A COURSE WITHOUT A MARK OF A W	
4	Feb 3	Market Failure con't	• **Assignment 1&2 due Feb 5th at start of class**
5	Feb 10	Conventional Solutions to Environmental Problems	• Chapter 4 Callan and Thomas (6th edition)
6	Feb 17	Economic Solutions to Environmental Problems	• Chapter 5 Callan and Thomas (6th edition)
7	Feb 24	Economic Solutions to Environmental Problems con't	• Chapter 7 Callan and Thomas (6th edition) • **Assignment 3 due Feb 24 at start of class**
	Feb 26	**Exam 1**	Exam material announced in class
8	Mar 2	Assessing Benefits	• Chapter 7 Callan and Thomas (6th edition) • Chapter 8 Callan and Thomas (6th edition)
9	Mar 9	Assessing Benefits con't Assessing Costs	• Same course materials as previous week • Chapter 9 Callan and Thomas (6th edition)
10	Mar 16	Benefit Cost Analysis	• Chapters 10-13 Callan and Thomas (6th Edition) • **Assignment 4 due Mar 16 at start of class**
11	Mar 23	***SPRING BREAK (No classes)***	
12	Mar 30	Case of Air	• Chapters 10-13 Callan and Thomas (6th Edition) • **Assignment 5 due April 3 at the start of class**
13	Apr 6	Case of Water	• Chapters 10-13 Callan and Thomas (6th Edition) • Chapters 14-16 Callan and Thomas (6th Edition)
	Apr 6	**Exam 2**	Exam material announced in class
14	Apr 13	Case of Water Con't	• Chapters 14-16 Callan and Thomas (6th Edition)
	Apr 17	*LAST DAY TO DROP A COURSE WITH A MARK OF A "W"*	
15	Apr 20	Honors Presentations	• Same course materials as previous week • **Assignment Bonus due April 22 at the start of class**
16	Apr 27	**Exam 3**	Exam material announced in class
	Apr 29	Wrap Up, Prep for Final	
	May 1	**Dead Day**	
	May 4	**Final Exam** 12:45pm to 2:45pm in Plant Science 9	Comprehensive

Exam review sessions are tentatively scheduled for:
Feb 25 from 5:30-7:30pm in Plant Science 9.
Apr 5 and Apr 26 from 4-6pm in Plant Science 9.
Updates to these dates and times, if needed, will be presented in class.

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