Term Information

Effective Term	Autumn 2014

General Information

Course Bulletin Listing/Subject Area	International Studies
Fiscal Unit/Academic Org	UG International Studies Prog - D0709
College/Academic Group	Arts and Sciences
Level/Career	Undergraduate
Course Number/Catalog	4320E
Course Title	Energy, the Environment, and the Economy
Transcript Abbreviation	Energy, Env, Econ
Course Description	Understand the role of energy in the economy and the environment. Explore the economics of clean, renewable energy, and understand the different policies for pollution control.
Semester Credit Hours/Units	Fixed: 3

Offering Information

Length Of Course	14 Week, 7 Week, 4 Week (May Session), 12 Week (May + Summer)
Flexibly Scheduled Course	Never
Does any section of this course have a distance education component?	No
Grading Basis	Letter Grade
Repeatable	No
Course Components	Lecture
Grade Roster Component	Lecture
Credit Available by Exam	No
Admission Condition Course	No
Off Campus	Never
Campus of Offering	Columbus

Prerequisites and Exclusions

Prerequisites/Corequisites	Prereq: AEDEcon 2001 (200) or Econ 2001.01, 2001.02 or 2001.03H (200)
Exclusions	Not open to students with credit for 4320 (565), AEDEcon 4320 (565), or AEDEcon 4320E

Cross-Listings

Cross-Listings	Cross-listed with AEDEcon

Subject/CIP Code

Subject/CIP Code	03.0103
Subsidy Level	Baccalaureate Course
Intended Rank	Sophomore, Junior, Senior

Quarters to Semesters

Quarters to Semesters	New course
Give a rationale statement explaining the purpose of the new course	Professor Sohngen has found honors students to be an outstanding addition to this class. He has learned some honors students have declined taking the class, and they desire more advanced content. He wishes to accommodate them. See attached letter
Sought concurrence from the following Fiscal Units or College	

Requirement/Elective Designation

The course is an elective (for this or other units) or is a service course for other units

Course Details

Course goals or learning objectives/outcomes

- Understand role of energy in the economy
- Understand externalities, like cabon dioxide and oil spills
- Explore the economics of clean and renewable energy
- Understand policies for pollution control, e.g., cap and trade, pollution taxes, subsidies

Content Topic List

- Description of global energy sector
- Economics of exploration and exhaustion of non-renewable energy
- Analysis of clean/renewable energy
- Carbon dioxide and climate change

  Review of environmental policy
- Review of environmental policy

Attachments

- AEDEIS_4320_honors_coverletter.doc: Cover Letter

  (Cover Letter. Owner: Meltz,Richard Lee)
- AEDEIS_4320_honors_proposal.doc: Honors Proposal

  (Statement of Qualitative Difference. Owner: Meltz,Richard Lee)
- AEDEIS_4320_Syllabus_fall2013 Non Honors.docx: For Non-Honors Students

  (Syllabus. Owner: Meltz,Richard Lee)
- AEDEIS_4320E_Syllabus_fall2013 Honors.docx: For Embedded Honors

  (Syllabus. Owner: Meltz,Richard Lee)

Comments

- Contact Info for Professor Brent Sohngen

  sohngen.1@osu.edu.

  The effective term has been updated to AU14 semester. Thank you very much for your consideration.

  10/4/13 Revise Course Description to match AEDECON 4320E. Revise ECON Dept prerequisites to match decimalized course numbers. Revise Subsidy Level to Baccalaureate Course. Thank you for your suggestions for these revisions. *(by Meltz,Richard Lee on 10/04/2013 03:56 PM)*
- -The course description for the International Studies version of this course should be the same as for the AEDE version. Please agree on common course description.

  -For prereq, there is no Econ 2001. Do you mean all 3 decimalized versions: 2001.01, 2001.02, and 2001.03H. If so, please specify.

  -Subsidy: undergraduate course cannot be doctoral. Should probably be "baccalaureate." *(by Vankeerbergen,Bernadette Chantal on 10/04/2013 10:56 AM)*
- Change effective term to SP14. *(by Haddad,Deborah Moore on 02/25/2013 05:30 PM)*

Workflow Information

Status	User(s)	Date/Time	Step
Submitted	Mughan,Anthony	02/25/2013 04:27 PM	Submitted for Approval
Approved	Mughan,Anthony	02/25/2013 04:37 PM	Unit Approval
Revision Requested	Haddad,Deborah Moore	02/25/2013 05:30 PM	College Approval
Submitted	Mughan,Anthony	09/26/2013 02:12 PM	Submitted for Approval
Approved	Mughan,Anthony	09/26/2013 02:13 PM	Unit Approval
Approved	Haddad,Deborah Moore	09/27/2013 10:18 AM	College Approval
Revision Requested	Vankeerbergen,Bernadette Chantal	10/04/2013 10:57 AM	ASCCAO Approval
Submitted	Mughan,Anthony	10/09/2013 02:17 PM	Submitted for Approval
Approved	Mughan,Anthony	10/09/2013 02:17 PM	Unit Approval
Approved	Haddad,Deborah Moore	10/09/2013 02:40 PM	College Approval
Pending Approval	Vankeerbergen,Bernadette Chantal Nolen,Dawn Jenkins,Mary Ellen Bigler Hogle,Danielle Nicole Hanlin,Deborah Kay	10/09/2013 02:40 PM	ASCCAO Approval

Department of Agricultural, Environmental, and Development Economics
2120 Fyffe Road
Columbus, Ohio 43201
Phone: 614-292-7911
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October 28, 2013

TO: OSU Honors Program
FROM: Brent Sohngen
RE: Request for embedded section for AEDE 4320 "Energy, the Environment, and the Economy"

To Whom it May Concern,

I would like to request permission to offer an embedded honors section with my AEDE 4320 course taught each fall. This course is titled "Energy, the Environment, and the Economy". The rationale for this is to offer honors students with an enriched policy and economic research experience. This past term, there were 6 honors students enrolled in the class (out of 50 total). These students substantially enhanced the class room experience for all students by providing numerous insights throughout the term. My concern is that these students were not challenged enough. An honors section would allow students who are interested in gaining more in-depth insights to work harder, and to learn more about economic and policy analysis of energy and environmental issues.

In addition, I believe that there are a number of additional honors students who would take the embedded honors section because it will provide a bigger challenge. I have met with a number of honor's students about this class in the past year, and several of them have elected not to take the course because it will not be taught at a high enough level to challenge them.

Specifically for the honors section, I propose to add an additional weekly recitation section, and to add a written research paper. Neither of these will be required for the regular section. The additional section will provide an opportunity for students and the instructor to discuss concepts in more depth than is possible in the full class. The additional section will also be used as an opportunity for students to work on their research paper, facilitating direct interaction and discussion among students and the instructor.

Through the research paper students are expected to analyze an energy and environmental policy issue, and to use economic methods discussed in class to conduct their analysis. The use of the methods developed in homework in an actual policy setting will encourage honor's students to start to think independently about how to conduct economic and policy research. The process of developing the research paper will occur in part during the recitation section. In addition to providing an opportunity to discuss topics in more depth, during the honor's recitation, the instructor will work with students to formulate appropriate hypotheses for conducting economic and policy analysis; to conduct some literature review; to choose the appropriate data and methods; and to write their final reports.

Sincerely,

Brent Sohngen, Professor and Graduate Studies Leader
AED Economics
Sohngen.1@osu.edu, 614-688-4640

Proposal for AEDE 4320E, Embedded Honors Section for "Energy, the Environment, and the Economy"

This section illustrates the enhanced faculty/student interaction and the enhanced expectations and experiences for the honors section.

The proposed honors section of AEDE 4320 would have the same course requirements as the regular section, plus two additional components: a weekly recitation section with the instructor for honors students enrolled in the honors section, and a written research paper. The additional recitation will provide an opportunity for students and the instructor to discuss concepts in more depth than is possible in the full class. Many of the concepts discussed are covered at a fairly general level in lecture. During the honor's recitation, we will be able to address these concepts in substantially more detail. For example, the concept of discounting is discussed in general in class, with presentation of fairly simple methods for analysis. During the honor's recitation, I would illustrate discounting analysis in much more details, with more in-depth examples, using tools in MS Excel. Students then could apply this tool to their research paper.

In addition to illustrating the use of tools used by economists in more detail, we will also discuss the reading by D. Yergin more thoroughly in recitation. We have little time to discuss this reading in class. The recitation will be used to tie concepts discussed in class more closely to the real world examples described in the Yergin text.

The recitation section will also be used as an opportunity for students to work with the instructor on their research paper. Some of the recitation sections will be devoted directly to work on the research paper, such that the students can interact with the instructor and get feedback on their ideas. Specifically, the instructor will work with students to formulate appropriate hypotheses for conducting economic and policy analysis; to conduct literature review; to choose the appropriate data and methods; and to write their final reports.

The research paper will constitute a major output for the honors section. Through the research paper students are expected to analyze an energy and environmental policy issue, and to use economic methods discussed in class to conduct their analysis. The homework that all students do for this class focuses on exposing students to a number of the methods used by economists who study environmental policy issues. Through the research paper, honors students will be required to use of the methods developed in homework in an actual policy setting. This will encourage honor's students to think independently about how to conduct economic and policy research.

Estimate of enhanced faculty-student interaction: The honors students will meet with the instructor once per week for 80 minutes (an additional class period). As noted above, some of this time will be used for discussion, some for learning material in more depth, and some for direct work on research component.

Estimate of increased student work load: In addition to the recitation described above, I estimate that students enrolled in the honors section will work an additional 1 to 1.5 hours per week on their research project, or an additional 14 to 19 hours over the semester.

Grading: Honors students will be graded on a different point distribution than students in the regular section of the class. The point distribution for honors students includes 25% of the grade derived on the output of the research project. The other components of the grade will be re-weighted proportionally, as shown in the syllabus.

AEDE/INTSTDS 4320E (Non Honors Syllabus)
Energy, the Environment, and the Economy
Autumn 2013

Instructor
Brent Sohngen
322 Agr Admin Bldg
Phone: 688-4640
E-mail: Sohngen.1@osu.edu

Time: TR 2:20-3:40
Room: Ramseyer 0065
Office Hours: Wednesday, 1:00 – 3:00
or by appointment.

Teaching Assistant
TBA

Reading Materials:
Yergin, Daniel. 2011. The Quest: Energy Security, and the Remaking of the Modern World. New York: Penguin Press.

Tietenberg, Tom and Lynne Lewis. 2012. Environmental and Natural Resource Economics. Boston: Pearson Education.

Both texts are required. We will be using some chapters of the Tietenberg and Lewis text. It can be purchased via the OSU bookstore, or online. It can also be purchased electronically and used online.

Objectives: At the completion of the course, the student will be able to:
- Analyze market trends that influence energy consumption and production, and the demographic, institutional, and economic factors that influence these trends.
- Understand the economics of non-renewable resources and energy exploration.
- Explain economic and policy drivers that enable the transition to renewable energy.
- Recognize externalities associated with energy production, and analyze the benefits and costs of different sources of energy.
- Assess the influence of alternative energy policies on businesses and trade.

Honors Section: An embedded honors section of this course is available. Please check with instructor if you would like take this option.

Prerequisites: AEDEcon or Econ 2001 or equivalent or permission of the instructor

Course Requirements for Embedded Honors Section

Homework: There are 5 homework assignments during the term.

Exams: There will be one midterm exam and one final exam for this class.

Case Studies: There will be three case studies during the term. The case studies will be used to spur class discussion. Case studies will require written answers to be submitted after the class during which the discussion occurs.

Quizzes: There will be up to 14 quizzes during class. Students who attend and take a quiz will get full credit for that quiz. Quizzes may be given at any time during class. Students must submit 7 quizzes, or they will lose 10% from their final grade.

Course Grades:

Homework (5)	35% (7% each)
Midterm	20%
Case Studies (3)	21% (7% each)
Final Exam	24%
Total	100%

Grading Scale:

A	96-100	C+	77-79	E	<60
A-	90-95	C	73-76		
B+	87-89	C-	70-72		
B	83-86	D+	67-69		
B-	80-82	D	60-65		

Documented illness, death in the family, or other extreme circumstances are the only excused absences.

Make-up exams will be given only in the event of excused absences.

Disability Statement

Students with disabilities that have been certified by the Office for Disability Services will be appropriately accommodated, and should inform the instructor as soon as possible of their needs. The Office for Disability Services is located in 150 Pomerene Hall, 1760 Neil Avenue; telephone 292-3307, TDD 292-0901; http://www.ods.ohio-state.edu/.

Academic Misconduct Statement

It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term “academic misconduct” includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct

Topics and Readings
(Note: "T" stands for the Tietenberg and Lewis text; "Y" stands for the Yergin text)

Weeks 1- 3

Introduction (T: Ch 1; Y:1,2)

Demand for energy resources (T: Ch 2; Y: 3-5)

- Demand curve, population trends, income trends, income elasticity, compounding growth.

HW 1: Trends in energy use and demand.

Measuring the benefits of markets: Equilibrium and surplus (Y: 6-10)

- Supply curves, equilibrium, measuring CS/PS/NS, shocks

HW 2: Market equilibrium and the effect of demand or supply shocks.

Weeks 4 - 6

The time dimension: Discounting and the extraction of non-renewable resources (T: 5, 6; Y: 17-20)

Energy Transition: From depletable to renewable resources (T: 7; Y: 27-32)

- Hubbert's Peak, backstop technologies, the role of cartels, economics of renewable energy.

HW 3: Assessing the energy transition

Case Study: Energy Independence

Midterm Exam

Weeks 7-11

Market failures: Economics of externalities and public goods (Y: 11-16).

Benefit Cost Analysis (T: 3,4)

- Externalities, public goods, techniques for measuring value, discounting, BCA

HW 4: Benefits Cost Analysis

Economics of pollution control (T:14, 15, 17)

- Command and control, cost effective policies, cap and trade, pollution taxes, the role of uncertainty (prices vs. cost), RPS, CAFE standards.

Case Study: Market based pollution control

Weeks 12-14

Economics of climate change (T: 16; Y: 21-26)

- Stock pollutants, dynamic efficiency, application of BCA

Case Study: Climate Change

HW 5: Economic assessment of alternative policies

AEDE/INTSTDS 4320E (Embedded Honors Syllabus)
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Autumn 2013

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322 Agr Admin Bldg
Phone: 688-4640
E-mail: Sohngen.1@osu.edu

Time: TR 2:20-3:40
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Reading Materials:
Yergin, Daniel. 2011. The Quest: Energy Security, and the Remaking of the Modern World. New York: Penguin Press.

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Both texts are required. We will be using some chapters of the Tietenberg and Lewis text. It can be purchased via the OSU bookstore, or online. It can also be purchased electronically and used online.

Objectives: At the completion of the course, the student will be able to:

- Analyze market trends that influence energy consumption and production, and the demographic, institutional, and economic factors that influence these trends.
- Understand the economics of non-renewable resources and energy exploration.
- Explain economic and policy drivers that enable the transition to renewable energy.
- Recognize externalities associated with energy production, and analyze the benefits and costs of different sources of energy.
- Assess the influence of alternative energy policies on businesses and trade.

Honors Section: The honors section of this course will provide honors students with an opportunity to study energy policy in-depth via a separate recitation section with fellow honors students and a research paper. The recitation will provide students with an opportunity to discuss economic concepts used in analyzing energy markets in more depth. The research paper will expose students to the use of economic methods to analyze energy and environmental policy issues. Students will also use the recitation section to work directly with the instructor and other honors students on developing their project problem statement, and the methods, data, and analysis they will use. Students will also have an opportunity to present their paper to their fellow honors students during the recitation section in the last week of classes.

Prerequisites: AEDEcon or Econ 2001 or equivalent or permission of the instructor

Course Requirements for Embedded Honors Section

Class: Honors students are expected to attend all lectures for AEDE 4320.

Honors Recitation: Students taking honors embedded course will attend a weekly 80 minute recitation section every week. We will do two things during the recitation section. First, we will discuss economic concepts described during the lectures in substantially more detail, using examples from the Yergin reading. Second, students will work with the instructor and their fellow students on their research papers. During the recitation period, we thus will discuss the development of an appropriate policy oriented problem statement; the type of data that can be used to answer the question; appropriate analysis to use; and style issues related to writing their final paper.

Homework: Honors students will submit the same 5 homework assignments as submitted for the regular section.

Case Studies: There will be three case studies during the term. The case studies will be used to spur class discussion. Case studies will require written answers to be submitted after the class during which the discussion occurs.

Exams: There will be one midterm exam and one final exam for this class.

Quizzes: There will be up to 14 quizzes during class. Students who attend and take a quiz will get full credit for that quiz. Quizzes may be given at any time during class. Students must submit 7 quizzes, or they will lose 10% from their final grade.

Honors Research Paper: Honors students will design and implement an analysis of a contemporary energy and environmental policy issue using methods learned in the course. The project output will be a written analysis of a current policy issue using one of economic methods discussed in class (demand analysis, supply analysis, dynamic resource allocation, benefit cost analysis, etc.). Students also will present their analysis to their peers in the honors section during the last two weeks of the term.

Course Grades:

Homework (5)	25% (5% each)
Midterm	15%
Case Studies (3)	15% (5% each)
Honors Project	25%
Final Exam	20%
Total	100%

Grading Scale:

A	96-100	C+	77-79	E	<60
A-	90-95	C	73-76		
B+	87-89	C-	70-72		
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HW 3: Assessing the energy transition

Case Study: Energy Independence

Midterm Exam

Weeks 7-11

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HW 4: Benefits Cost Analysis

Economics of pollution control (T:14, 15, 17)

- Command and control, cost effective policies, cap and trade, pollution taxes, the role of uncertainty (prices vs. cost), RPS, CAFE standards.

Case Study: Market based pollution control

Weeks 12-14

Economics of climate change (T: 16; Y: 21-26)

- Stock pollutants, dynamic efficiency, application of BCA

Case Study: Climate Change

HW 5: Economic assessment of alternative policies