

Semester at Sea, Course Syllabus
Colorado State University, Academic Partner

Voyage: Spring 2017
Discipline: Economics / Agriculture and Resource Economics
Course Number and Title: ECON 240 / AREC 240 Issues in Environmental Economics
Division: Lower
Faculty Name: Tisha Emerson
Semester Credit Hours: 3

Prerequisites: None

COURSE DESCRIPTION

This course examines economic issues in the consumption, allocation, and management of environmental resources. Students will learn the economic principles behind the management of the environment. In particular, we will apply the economic way of thinking to environmental issues in order to identify ways to improve upon market outcomes and to create effective mechanisms to regulate economic activity to better balance economic and environmental goals. This course will explore the theories, methodologies, and application of environmental economics to real-world environmental issues (with special attention to issues in countries on the Semester at Sea S2017 itinerary). The course includes critical discussions of some of the more controversial issues in environmental economics: environmental valuation, international environmental conflict, and regulation.

LEARNING OBJECTIVES

- Students will master basic economic models of the environment.
- Students develop an understanding of environmental issues and the various mechanisms used to improve upon market outcomes.
- Students will be able to use benefit-cost analysis to examine environmental issues.
- Students will learn to apply economic thinking to environmental problems and policies.
- Students will learn about environmental issues at both local and international scales.
- Students experience working with economic theory as well as real-world data.

REQUIRED TEXTBOOKS

AUTHOR: Scott J. Callan and Janet M. Thomas
TITLE: Environmental Economics and Management: Theory, Policy, and Applications
PUBLISHER: Cengage Learning
ISBN #: 10: 1111826676 or 13: 9781111826673
DATE/EDITION: 2013, 6th Edition

TOPICAL OUTLINE OF COURSE

Depart Ensenada — January 5

A1 – January 7: Introduction to Environmental Economics

Topic: Introduction to the course and Environmental Economics; review of syllabus

Reading: Chapter 1; “How Economists See the Environment”

A2 – January 9: Economics and Environmental Management

Topic: Environmental Problems and Policy for the 21st Century

Reading: “Environmental Problems and Policy: 2000-2050”; “Environmental Policy Since Earth Day I: What have we Gained?”

A3 – January 11: Modeling the Market Process I

Topic: Fundamentals of Economic Models

Reading: Chapter 2

Honolulu – January 12

A4 – January 14: Modeling the Market Process II

Topic: Welfare Measures and the Market Model

Reading: Chapter 2

A5 – January 17: Modeling Market Failures I

Topic: Externalities

Reading: Chapter 3

Assignment: Problem Set 1 due

No class January 19

A6 – January 20: Modeling Market Failures II

Topic: Property Rights

Reading: Chapter 3

Activity: Common Property Experiment

A7 – January 22: Conventional Solutions to Environmental Problems I

Topic: Environmental Standards and Policy Implementation

Reading: Chapter 4

Assignment: Problem Set 2 due

Kobe – January 24 - 28

A8 – January 29: Conventional Solutions to Environmental Problems II

Topic: Is Command-and-Control Cost Effective?

Reading: Chapter 4

Shanghai – January 31 – February 5

A9 – February 6: Economic Solutions to Environmental Problems I

Topic: Types of Market Instruments – Taxes and Subsidies

Reading: Chapter 5; “Issues in the Design of Environmental Excise Taxes”
Activity: Pollution Tax Experiment

A10 — February 8: Economic Solutions to Environmental Problems II

Topic: Tradeable Permits and Deposit-Refund Systems

Reading: Chapter 5

Activity: Tradeable Permit Experiment

Ho Chi Minh City — February 10-14

A11 — February 15: Tradeable Permit Readings

Topic: Tradeable Permits for Air and Water with Evidence from Allowance Systems

Reading: “Markets for Pollution Allowances: What Are the (New) Lessons?”; “The SO₂ Allowance Trading System: The Ironic History of a Grand Policy Experiment”; “Moving Pollution Trading from Air to Water: Potential, Problems, and Prognosis”

Assignment: Problem Set 3 due

No Class February 17

A12 — February 18: Review

Assignment: Field Class Assignment – due

Yangon — February 20-24

A13 — February 25: Environmental Risk Analysis

Topic: Risk, Risk Assessment, and Risk Management

Reading: Chapter 6

A14 — February 27: Midterm (Chapters 1-5)

Cochin – March 1-6

A15 — March 7: Measuring Benefits I

Topic: Measuring Environmental Benefits with the Physical Linkage Approach

Reading: Chapter 7

No Class March 9

A16 — March 10: Measuring Benefits II

Topic: Measuring Environmental Benefits with the Behavioral Linkage Approach

Reading: Chapter 7

Mauritius — March 12

A17 — March 13: Contingent Valuation Readings

Topic: Issues in the Contingent Valuation Debate

Reading: “Valuing the Environment Through Contingent Valuation”; “From Exxon to BP: Has Some Number Become Better than No Number?”; “The Contingent Valuation Debate: Why Economists Should Care”

Assignment: Problem Set 4 due

No Class March 15

A18 – March 16: Measuring Costs I

Topic: Conceptual Issues of Environmental Costs

Reading: Chapter 8

A19 – March 18: Measuring Costs II

Topic: Estimation Methods for Measuring Environmental Costs

Reading: Chapter 8

Cape Town – March 19-24

A20 – March 26: Benefit-Cost Analysis

Topic: Time Adjustments, Reservations, and Use of Benefit-Cost Analysis

Reading: Chapter 9; “Tightening Environmental Standards: The Benefit-Cost or the No-Cost Paradigm?”

A21 – March 28: Global Environmental Management I

Topic: Sustainable Development

Reading: Chapter 20; “Confronting the Environmental Kuznets Curve”

Assignment: Problem Set 5 due

No Class March 29

Tema – March 31-April 3

A22 – April 4: Global Environmental Management II

Topic: International Agreements, International Trade, and Environmental Protection

Reading: Chapter 20

A23 – April 6: International Agreements Readings

Topic: International Agreements, International Trade, and Environmental Protection

Reading: “The Role of Economics in Climate Change Policy”; “Should Trade Agreements Include Environmental Policy?”; “The WTO as a Mechanism for Securing Market Access Property Rights: Implications for Global Labor and Environmental Issues”

A24 – April 8: Summary of Course and Review

Assignment: Problem Set 6 due

Study Day April 10

Assignment: Photo Essay – due

Casablanca – April 11-April 14

A25 Finals – April 15: Final Exam

Arrive Hamburg – April 19

FIELD WORK

Field Class attendance is mandatory for all students enrolled in this course. Do not book individual travel plans or a Semester at Sea sponsored trip on the day of your field class. Field Classes constitute at least 20% of the contact hours for each course.

Field Class and Assignment

The Field Class for this course will take place on Thursday, January 12, 2017 in Honolulu, HI.

Environmental Economics in Hawaii

The class will visit State of Hawaii Office of Environmental Quality Control and US EPA related sites and hear a speaker at the University of Hawaii or East-West Center, observe environmental issues, and dialogue with experts and practitioners in the field of environmental economics.

Learning Objectives:

- Students will learn about the work of the US EPA and Hawaii's Office of Environmental Quality Control with respect to environmental issues and the extent to which economic costs and benefits are considered in policy and other decision making.
- Students will visit local sites of environmental concern.
- Students will hear from economic researchers at the University of Hawaii and/or the East-West Center about current economic research on a variety of environmental topics. In particular, students will learn about environmental economic research drawing upon data and experiences from upcoming ports in Asia.

Field Class Assignment

Students will observe a variety of challenges and issues related to the environment in Hawaii. They will also hear about research on environmental issues in Hawaii and Asia. After the field class, a subset of the issues observed will be identified and students will be asked to select one issue from the identified list, to describe the challenge, analyze the relevant issues, and to propose an innovative solution to the problem. Field assignments are to be 3-5 pages in length and will be due by 5pm on Saturday, February 18.

Independent Field Assignments

During the entirety of the voyage, students will compile a photo and written journal.

Written Journal: Journal entries should record experiences or observations in the field as they relate to topics addressed in class. Students should note environmental issues in the ports that we visit. The journal entry for each of the eight major ports (not including Honolulu and Mauritius) should be $\frac{1}{2}$ to 1 page in length, typed, double spaced. After each port, students should electronically submit their journal entry for that port by the start of the next class day post port. Each journal entry will be graded on a pass/fail basis.

Photo Essay: The port journal entries will be used in conjunction with the photos students compile during the voyage to create a photo essay. Students will select 1-3 photos from each port (not including Honolulu and Mauritius) that illustrate topics related to class concepts. Each photo should have a 1-3 sentence caption explaining the relevance of the photo to environmental economics. Students should identify a major theme for their photo essay. An example might be water quality on the SAS Spring 2017 itinerary where the photo essay would contain photos illustrating water quality (or lack thereof) in each of the ports and any differences in water quality across the Spring 2017 SAS itinerary. Another example would be where students select a particular topic, perhaps sources of air emissions (e.g., vehicles, factories, agricultural production, natural sources – fire or volcanic activity), and select photos from each port that illustrate different examples of that topic. Photo essays will be graded on relevance and consistency of photos to the chosen theme, quality of photo captions, and originality. The photo essay will be due by 5pm on Saturday, April 15.

METHODS OF EVALUATION / GRADING SCALE

Grades are based on a midterm, final, six problem sets, a presentation of a journal article, the field class assignment, the photo essay, and the field journal. There are a total of 500 points possible throughout the semester distributed as follows: midterm (100), final (100), problem sets (60), journal article presentation (50), field class assignment (100), photo essay (50), and field journal (40).

Problem Sets: There are a total of six problem sets that provide students the opportunity to practice and apply concepts discussed in class. The problem sets are worth 10 points apiece for a total of 60 points.

Journal Article Presentation: Students will present and lead a discussion on one of the journal articles assigned as reading throughout the course. Depending on enrollment, students will either present articles in small groups of 2 or individually. Students will be graded both on the quality of their presentation and the quality of the handout they create to summarize the article. More details about the presentation and handout will be provided in class.

Field Class Assignment: More information is provided in the Field Work section of the syllabus and additional description of the assignment will be provided in class.

Photo Essay: The photo essay should include an entry for each of the eight major ports (not including Honolulu and Mauritius). More information is provided in the Field Work section of the syllabus.

Field Journal: A minimum of eight, ½ to 1 page entries should be contained in the journal (one for each port, not including Honolulu and Mauritius). More information is provided in the Field Work section of the syllabus.

Exams: There will be a midterm and a cumulative final exam. Each exam will contain a mixture of multiple choice and short answer questions.

The following Grading Scale is utilized for student evaluation. Pass/Fail is not an option for Semester at Sea coursework. Note that C-, D+ and D- grades are also not assigned on Semester at Sea in accordance with the grading system at Colorado State University (the SAS partner institution).

Pluses and minuses are awarded as follows on a 100% scale:

<u>Excellent</u>	<u>Good</u>	<u>Satisfactory/Poor</u>	<u>Failing</u>
97-100%: A+	87-89%: B+	77-79%: C+	Less than 60%: F
94-96%: A	84-86%: B	70-76%: C	
90-93%: A-	80-83%: B-	60-69%: D	

ATTENDANCE/ENGAGEMENT IN THE ACADEMIC PROGRAM

Attendance in all Semester at Sea classes is mandatory, but it is at the instructor's discretion to assign a grade to the participation and attendance requirement. Remember to include information concerning the evaluation of Field Assignments and the Field Classes, which must constitute at least 20% of the total grade in a course.

Students must inform their instructors prior to any unanticipated absence and take the initiative to make up missed work in a timely fashion. Instructors must make reasonable efforts to enable students to make up work which must be accomplished under the instructor's supervision (e.g., examinations, laboratories). In the event of a conflict in regard to this policy, individuals may appeal using established CSU procedures.

LEARNING ACCOMMODATIONS

Semester at Sea provides academic accommodations for students with diagnosed learning disabilities, in accordance with ADA guidelines. Students who will need accommodations in a class, should contact ISE to discuss their individual needs. Any accommodation must be discussed in a timely manner prior to implementation. A memo from the student's home institution verifying the accommodations received on their home campus is required before any accommodation is provided on the ship. Students must submit this verification of accommodations pre-voyage as soon as possible, but no later than November 19, 2016 to academic@isevoyages.org.

STUDENT CONDUCT CODE

The foundation of a university is truth and knowledge, each of which relies in a fundamental manner upon academic integrity and is diminished significantly by academic misconduct. Academic integrity is conceptualized as doing and taking credit for one's own work. A pervasive attitude promoting academic integrity enhances the sense of community and adds value to the educational process. All within the University are affected by the cooperative commitment to academic integrity. All Semester at Sea courses adhere to this Academic Integrity Policy and Student Conduct Code.

Depending on the nature of the assignment or exam, the faculty member may require a written declaration of the following honor pledge: "I have not given, received, or used any unauthorized assistance on this exam/assignment."

RESERVE BOOKS AND FILMS FOR THE LIBRARY

AUTHOR: Klein, Naomi
TITLE: This Changes Everything: Capitalism vs. The Climate
PUBLISHER: Simon & Schuster
ISBN #: 978-1451697391
DATE/EDITION: Reprint edition; August 4, 2015

AUTHOR: Wangari Maathai
TITLE: The Challenge for Africa
PUBLISHER: Anchor (sold by Random House)
ISBN #: B0024NP5HO
DATE/EDITION: April 7, 2009

AUTHOR: Wangari Maathai
TITLE: The Green Belt Movement
PUBLISHER: Lantern Books
ISBN #: 978-1590560402
DATE/EDITION: Revised edition; March 1, 2003

AUTHOR: Paul Hawken
TITLE: The Ecology of Commerce Revised Edition: A Declaration of Sustainability
PUBLISHER: HarperBusiness;
ISBN #: 978-0061252792
DATE/EDITION: Revised edition; March 25, 2010

DOCUMENTARY: Switch
DIRECTOR: Harry Lynch and Scott Tinker
DATE: 2012

DOCUMENTARY: Who Killed the Electric Car?
DIRECTOR: Chris Paine
DATE: 2006

DOCUMENTARY: Mountaintop Removal
DIRECTOR: Michael O'Connell
DATE: 2007

FILM: A Civil Action
DIRECTOR: Steven Zaillian
DATE: 1995

FILM: Erin Brockovich
DIRECTOR: Steven Soderbergh
DATE: 2000

ELECTRONIC COURSE MATERIALS

AUTHOR: Bagwell, Kyle and Staiger, Robert W.
ARTICLE/CHAPTER TITLE: The WTO as a Mechanism for Securing Market Access Property Rights: Implications for Global Labor and Environmental Issues
JOURNAL/BOOK TITLE: Journal of Economic Perspectives
VOLUME: 15(3)
DATE: Summer 2001
PAGES: 69-88

AUTHOR: Barthold, Thomas A.
ARTICLE/CHAPTER TITLE: Issues in the Design of Environmental Excise Taxes
JOURNAL/BOOK TITLE: Journal of Economic Perspectives
VOLUME: 8(1)
DATE: Winter 1994
PAGES: 133-151

AUTHOR: Ederington, Josh
ARTICLE/CHAPTER TITLE: Should Trade Agreements Include Environmental Policy?
JOURNAL/BOOK TITLE: Review of Environmental Economics and Policy
VOLUME: 4(1)
DATE: Winter 2010
PAGES: 84-102

AUTHOR: Fisher-Vanden, Karen and Olmstead, Sheila
ARTICLE/CHAPTER TITLE: Moving Pollution Trading from Air to Water: Potential, Problems, and Prognosis
JOURNAL/BOOK TITLE: Journal of Economic Perspectives
VOLUME: 27(1)
DATE: Winter 2013
PAGES: 147-172

AUTHOR: Freeman, A. Myrick

ARTICLE/CHAPTER TITLE: Environmental Policy Since Earth Day I: What have we Gained?
JOURNAL/BOOK TITLE: Journal of Economic Perspectives
VOLUME: 16(1)
DATE: Winter 2002
PAGES:125-146

AUTHOR: Goulder, Lawrence H.
ARTICLE/CHAPTER TITLE: Markets for Pollution Allowances: What Are the (New) Lessons?
JOURNAL/BOOK TITLE: Journal of Economic Perspectives
VOLUME: 27(1)
DATE: Winter 2013
PAGES: 87-102

AUTHOR: Hanemann, W. Michael
ARTICLE/CHAPTER TITLE: Valuing the Environment Through Contingent Valuation
JOURNAL/BOOK TITLE: Journal of Economic Perspectives
VOLUME: 8(4)
DATE: Fall 1994
PAGES: 19-43

AUTHOR: Kling, Catherine L., Phaneuf, Daniel J., and Zhao, Jinhua
ARTICLE/CHAPTER TITLE: From Exxon to BP: Has Some Number Become Better than No Number?
JOURNAL/BOOK TITLE: Journal of Economic Perspectives
VOLUME: 26(4)
DATE: Fall 2012
PAGES: 3-26

AUTHOR: McKibbin, Warwick J. and Wilcoxon, Peter J.
ARTICLE/CHAPTER TITLE: The Role of Economics in Climate Change Policy
JOURNAL/BOOK TITLE: Journal of Economic Perspectives
VOLUME: 16(2)
DATE: Spring 2002
PAGES: 107-129

AUTHOR: Palmer, Karen, Oates, Wallace E. and Portney, Paul R.
ARTICLE/CHAPTER TITLE: Tightening Environmental Standards: The Benefit-Cost or the No-Cost Paradigm?
JOURNAL/BOOK TITLE: Journal of Economic Perspectives
VOLUME: 9(4)
DATE: Fall 1995
PAGES: 119-132

AUTHOR: Portney, Paul R.
ARTICLE/CHAPTER TITLE: The Contingent Valuation Debate: Why Economists Should Care
JOURNAL/BOOK TITLE: Journal of Economic Perspectives
VOLUME: 8(4)

DATE: Fall 1994
PAGES: 3-17

AUTHOR: Portney, Paul R.
ARTICLE/CHAPTER TITLE: Environmental Problems and Policy: 2000-2050
JOURNAL/BOOK TITLE: Journal of Economic Perspectives
VOLUME: 14(1)
DATE: Winter 2000
PAGES: 199-206

AUTHOR: Schmalensee, Richard and Stavins, Robert N.
ARTICLE/CHAPTER TITLE: The SO₂ Allowance Trading System: The Ironic History of a Grand Policy Experiment
JOURNAL/BOOK TITLE: Journal of Economic Perspectives
VOLUME: 27(1)
DATE: Winter 2013
PAGES: 103-122

AUTHOR: Fullerton, Don and Stavins, Robert
ARTICLE/CHAPTER TITLE: How Economists see the Environment
JOURNAL/BOOK TITLE: Nature
VOLUME: 395
DATE: October 1998
PAGES: 433-434

AUTHOR: Dasgupta, Susmita; Laplante, Benoit; Wang, Hua; and Wheeler, David
ARTICLE/CHAPTER TITLE: Confronting the Environmental Kuznets Curve
JOURNAL/BOOK TITLE: Journal of Economic Perspectives
VOLUME: 16(1)
DATE: Winter 2002
PAGES: 147-68

ADDITIONAL RESOURCES

It would be incredibly helpful for the students to have access to the data from the World Bank (<http://data.worldbank.org/>), in particular <http://data.worldbank.org/topic/environment>), OECD Environmental data (<http://www.oecd.org/env/indicators-modelling-outlooks/data-and-indicators.htm>), CIA Factbook (<https://www.cia.gov/library/publications/the-world-factbook/fields/2032.html>), United Nations Environment Programme database (<http://geodata.grid.unep.ch/>), and the US EPA (<https://developer.epa.gov/category/data/>; <https://www3.epa.gov/enviro/>). The data from the World Bank is downloadable in its entirety. My students will need to have access to this data for their various course projects.