
EV512 Environmental Science: Economics-Management-Law

Course Syllabus and Calendar: As of 20 Apr 2024

Section Information

Section 1

Course Delivery Mode: OLL-Synch

Tue & Thu 08:00-09:20 AM ChST (GMT+10)

Online via MS Teams, with Moodle website via TADEO

Instructor Information

Dr. John W. Jenson

Email: jjenson@triton.uog.edu

Office Location: Remote contact via MS Teams or Zoom

Office Hours – By appointment

Mobile Phone Number: 304 376 6092

COURSE CATALOG DESCRIPTION

This course equips students with the fundamental elements of microeconomic theory, concepts of environmental economics, techniques of environmental management, and elements of environmental law that are essential for efficient and sustainable conservation, allocation, and management of natural resources, as well as the rational evaluation and effective maintenance of environmental safety and quality.

COURSE CONTENT

The course consists of four modules. The first module addresses principles of effective environmental policies, laws, regulations and management practices. The second module examines the fundamental elements of microeconomic theory that apply to environmental economics. The third module addresses the defining concepts of environmental economics. The fourth module addresses management applications.

OVERALL COURSE OBJECTIVE

The principal objective of this course is to equip students with an understanding of the principles of microeconomics, its subdiscipline of environmental economics, and the unique economic properties of natural resources and environmental goods and services that are requisite to the exploration and resolution of environmental problems.

UOG Environmental Science Program Values. The Environmental Science Program faculty is committed to the search for objective truth; impartial, honest, and thorough scientific debate; and excellence in all endeavors. We hold that scientists must have the integrity to not compromise research or other work in response to political, ideological, social, or financial pressures. Scientific integrity also includes a commitment to share data and cooperate with others in their attempts to advance scientific

understanding and replicate or verify the quality of previous work. We seek to instill these values in our students through personal example as well as thoughtful academic instruction.

STUDENT LEARNING OUTCOMES (Course, Program, Institution)

Course Learning Outcomes: Students completing this course will be equipped with the following knowledge and skills:

A. Knowledge-Based Outcomes

- A-1 Explain the fundamental elements of microeconomic theory.
- A-2 Explain the defining concepts of environmental economics.
- A-3 Explain the techniques of environmental management.
- A-4 Critically evaluate elements of environmental policy, law, and regulations ranging in application from local issues of persistent, widespread, and intense public concern, such as municipal water quality and solid waste disposal, to global issues such as current concern over climate change and sea-level rise.

B. Skills-Based Outcomes

- B-1 Critically examine and contribute to productive, objective, evidence-based discussion of complex and difficult aspects of environmental economics, management, and law.
- B-2 Write spontaneously and deliberately in clear and concise prose to critically address selected topics in environmental economics, management, and law.
- B-3 Critically analyze and write rigorous and informed scientific critiques of topics from scientific and popular literature relating to environmental economics, management, and law.
- B-4 Use information resources effectively to locate relevant, accurate, and reliable sources relating to environmental economics, management, and law.

Institutional Learning Outcomes (ILOs): Program Learning Outcomes (PLOs) Alignment Matrix

Program Learning Outcomes (PLOs)	Institutional Learning Outcomes <i>A University of Guam student will demonstrate upon completion of any degree:</i>				
	IGLO 1: Demonstrate a mastery of critical skills, theories, methodologies, and other content knowledge at a level that will enable them to address fundamental questions in their primary area of study	IGLO 2: Plan, conduct, and complete a significant research or creative project, under the guidance and supervision of both internal and external advisors	IGLO 3: Exercise oral and written communication skills sufficient to publish and present work in their field	IGLO4: Adhere to the ethical principles of academia and their respective disciplines in coursework, fieldwork, and other appropriate situations	IGLO 5: Exemplify, through service, the value of their discipline to the academy and the community at large, interacting

PLO A-1: Understand the attributes and limitations of scientific thought, culture, method, and practice—along with acknowledged principles for ethical conduct—in the search for truth and in the effective and humane application of science to the resolution of local, regional, and global environmental problems. [EV508]				V	
PLO A-2: Understand basic principles and components of earth science and engineering, biology and ecology, and economics and management that are requisite to the exploration and resolution of environmental problems. [EV510, EV511, EV512]	V				
PLO B-1: Demonstrate the abilities to frame research questions, make observations and collect data, and—as applicable to her or his discipline—to design and conduct experiments, operate analytical instruments, or employ statistical, numerical, or geospatial tools to test either new hypotheses or prevailing theories. [EV507, EV558, EV695]		V			
PLO B-2: Demonstrate the ability to conceive, critically examine, and systematically develop integral approaches to multidisciplinary research questions and broadly based solutions to public issues and policy problems that span the environmental subdisciplines of earth science, biology, ecology, economics, management, and engineering. [EV508, EV510, EV511, EV512, EV695]					V
PLO B-3: Demonstrate the ability to write rigorous, critical, clear, informative, and concise technical reports and articles. [EV508, BI 503]			V		

COURSE REQUIREMENTS

GRADING. Course grades will be assigned as follows: $\geq 90\%$ A; 80-90% B; 70-80% C; $< 70\%$ F, with + and – grades awarded for scores in the upper and lower thirds within each letter grade.

REQUIRED TEXTS

The following books and video lectures are the texts. Most of the books are available in Kindle as well as paperback, both new and used. The videos are available for a \$12/month subscription to *Wondrium* and at student discounts from *The Great Courses Company*.

Books: Prices for Kindle versions, except where Kindle is unavailable (#3) or paperback is cheaper (#5). Price

- | | |
|-------------------------------------------------------------------------------------------------------------------------|---------|
| • Environmental Law and Policy, 5th ed., 2019, by Salzman, J. and Thompson Jr., B., Foundation Press. | \$42.75 |
| • New Ideas from Dead Economists, 2007, Buchholz, T.G., Plume. | \$13.99 |
| • Microeconomics Made Simple, 2014, Frakt, A. and Piper, M., Simple Subjects LLC. | \$4.99 |
| • Environmental Economics, 8th ed., 2020, Field, B.C. and Field, M.K., McGraw-Hill. (\$33.21 to rent) | \$69.00 |
| • Apocalypse Never, 2020, Shellenberger, M., Harper Collins. | \$12.99 |
| • Microeconomics Quick Study Card from BarCharts, Inc.¹ | \$6.95 |

Videos: Download the Wondrium App, subscribe to their streaming service. * Module

- | | |
|-----------------------------------------------------------------------|---|
| 1) Goldman, S.L., 2004, Science in the 20th Century | 1 |
| 2) Taylor, T., 2011, Unexpected Economics | 1 |
| 3) Bartlett, R., 2010, Thinking Like an Economist | 1 |

*Get Wondrium's 14-day free trial on first day of class, then subscribe to their quarterly plan, \$12/mo. for Feb-Apr.

<https://www.wondrium.com/customer/plans>

DVDs and Transcripts: Available at student rates from The Great Courses Co., 4840 Westfields Blvd, Ste 500, Chantilly, VA 20151. You may order transcripts for any of the above by phone or mail. To order them from the website, you have to buy the course first before the website gives you the option for buying the transcript.

¹ https://www.amazon.com/Microeconomics-Quickstudy-Business-Inc-BarCharts/dp/1423208552/ref=sr_1_4?crid=FBWJHV12MDG9&keywords=barcharts+quick+study+microeconomics&qid=1702082322&sprex=barcharts+quick+study+microeconomics%2Caps%2C82&sr=8-4

- Order online at <https://www.thegreatcourses.com/> or by phone 1-800-832-2412 or Fax: 703-378-3819.
- Hours for phone orders: Mon-Fri 9:00 AM – 10:00 PM EST, Sat & Sun 9:00 AM-5:00 PM EST.
- Student Discount code is 70.
- Attn: **Patrick, Institutional Account Manager**

ACCESS STATEMENT FOR OLL-DELIVERED COURSES

Students need only the basic resources for online instruction, i.e., a personal computer with a camera, microphone, and audio output.

GRADING INFORMATION

The final grading for the will be weighted as follows: (GPA)

A+: 98-100% (4.00)

A: 93-97% (4.00)

A-: 90-92% (3.67)

B+: 87-89% (3.33)

B: 83-86% 3.00)

B-: 80-82% (2.67)

C: 70% or lower (2.00)

UW: Unofficial withdrawal assigned by Registrar. Student stopped attending classes and did not submit required documents to the Admissions & Records office.

W: Withdrawal assigned by Registrar. Student stopped attending classes and submitted required documents to the Admissions & Records office.

GRADE CATEGORIES: ASSIGNMENTS AND PERCENTAGES

Course materials will be weighted as follows: (1) attendance & contributions to discussions, 10%; (2) Homeworks and exercises, 65%; (3) Term paper and final presentation, 25%.

ASSIGNMENT DESCRIPTIONS

ATTENDANCE AND CONTRIBUTIONS TO DISCUSSIONS. A portion of the class time will be devoted to seminar-like discussions. To help facilitate discussion, I will pose a question each week on an on-line forum. For discussions, I will ask you to turn your video on, so that we can see one another's faces. We will also have the option of on-island students assembling in SBPA Room 262.

HOMEWORK EXERCISES. I will give you occasional short homework assignments, and three long-term exercises (with about four weeks to work on each of them). These will give you a good understanding of basic concepts and proficiency with techniques of economic analysis that support planning, policy, and regulations. You are encouraged to work together, but you must do your own work, of course.

TERM PAPER. For the term paper you will read and review Michael Shellenberger's 2020 book, *Apocalypse Never: Why Environmental Alarmism Hurts Us All*. The paper must be 10-12 pages in length, exclusive of figures, tables, and bibliography. The bibliography must include at least five credible

references. The objective will be for you to critically assess some major environmental issue or set of issues of our time in terms of the economic principles and analytical techniques you are learning in the course. Your focus should be the issues and the application of microeconomic and environmental economic theory and principles, with the book as a point of departure. However, if you find aspects of the book, the author's arguments or exposition that you find problematic or otherwise worthy of comment or criticism, by all means mention them. In short, your primary focus is to be an issue addressed in the book, rather than the book itself. Your examination of the issue should reflect the intellectual and analytical tools you have acquired in the course. Pick a specific issue and stay focused. You have only 10 to 12 pages in which to make and defend your assessments and arguments. At the end of the semester, you will give a presentation on your paper. The paper and presentation will be 25% of your course grade.

OTHER COURSE INFORMATION

INSTRUCTION. This is a three-credit-hour course, which meets twice each week. Each meeting begins with a presentation by the instructor, followed by a seminar-type discussion, with an occasional brief video or clips from a video to stimulate the discussion.

- **READINGS AND OTHER ASSIGNMENTS.** This is a graduate science course, with readings and exercises. You are expected to invest several hours each week—prior to the first class meeting—not only in reading and viewing the assigned materials for the first time, but also in studying the materials carefully to identify and grasp important details and “the big picture,” then work assigned problems and exercises. You should set up a reading schedule for yourself and invest whatever time it takes to master the material. Details regarding reading assignments are provided in the *Course Schedule and Assignments*.
- **MISSED COURSE ACTIVITIES AND LATE WORK.** For anticipated and unavoidable absences of modest length, you may request an excused absence, but only if scheduled work is submitted in advance. In other words, for planned absences, course assignments and exams must still be turned in when scheduled, or ahead of schedule. For unplanned absences (i.e., absences due to true emergencies), any course work due on the day of the absence must be made up as soon as possible afterwards, and you must contact the instructor immediately to agree on an appropriate date and time for submission.
- **MOODLE COURSE CODE:** EV-512-01-SP24-Jenson SP24JJ-j9HZjw

COURSE CALENDAR: CLASS MEETINGS AND READING/VIDEO ASSIGNMENTS

Textbooks

Environmental Law and Policy, Salzman, J. and Thompson Jr., B.
New Ideas from Dead Economists, Buchholz, T.G.
Microeconomics Made Simple, Frakt, A. and Piper., M.
Microeconomics Quick Study, by BarCharts, Inc.
Environmental Economics, Field, B.C. and Field, M.K.
Apocalypse Never, Shellenberger, M.

Abbreviations

ELP
NIFDE
MMS
MQS
EE
APONVR

Video Lecture Series (Wondrium)

Bartlett, R., 2010, Thinking Like an Economist
Goldman, S.L., 2004, Science in the Twentieth Century
Taylor, T., 2011, Unexpected Economics

Bartlett, TLAE
Goldman, SITTC
Taylor, UE

Selected Readings (provided)

The Age of Uncertainty, Galbraith, J.K.

Galbraith, TAOU

Part I: ENVIRONMENTAL LAW AND POLICY

Week 1: The Big Picture: What Are We Protecting and Why? [CLOs A-1. B-1]

No class on 16 Jan

Lecture 1: Course Introduction, 18 Jan

Readings and Videos

- Essential (18 p. technical, 30 p. easy reading)
 - ELP, Preface; Ch. 1, An Introduction to Environmental Law and Policy, pp. v-vi, 3-16.
 - APONVR, Intro. (4 p.); Ch. 1: It's Not the End of the World (26 p.)

Spreadsheet tutorial posted

Exercise 1 posted Monday, 22 Jan, due 5 PM, Friday, 1 Mar

Week 2: Managing Our Environment: Environmental Law and Policy [CLOs A-1. 2, 3, 4; B-1, 2, 3, 4]

Lecture 1: Perspectives on Environmental Law and Policy, 23 Jan

Lecture 2: The Four Analytical Frameworks, 25 Jan

Readings and Videos

- Essential (33 p. technical, 18 p. easy reading; 30 min. video)
 - ELP, Ch. 2, Perspectives in Environmental Law and Policy, pp. 17-50.
 - APONVR, Ch. 2: Earth's Lungs Aren't Burning (18 p.)
 - Goldman, SITTC, Lecture 32: Society-Economics

Homework 1 posted by Monday, 29 Jan; due 5 PM, Friday, 9 Feb

Week 3: The Practice of Environmental Protection [CLOs A-1. 2, 3, 4; B-1, 2, 3, 4]

Lecture 1: Protection and Enforcement, 30 Jan

Lecture 2: Application of Environmental Law and Policy, 1 Feb

Readings and Videos

- Essential (64 technical)
 - ELP, Ch. 3, The Practice of Environmental Protection, pp. 51-90.
 - ELP, Ch. 4, Enforcement, pp. 91-114.

Part II: RESOURCE MANAGEMENT: PRINCIPLES OF MICROECONOMICS

Week 4: Founders and Foundations of the Dismal Science [CLOs A-1. B-1]

Lecture 1: Founders and Foundations of the Dismal Science, 6 Feb

Lecture 2: Tools and Techniques: Online lab session: Spreadsheet Basics, 8 Feb

Readings and Videos

- Essential (5 p. technical; 53 p. easy reading; 60 min. video)
 - MMS, Intro., Ch 1 Maximizing Utility, pp. 1-5
 - MQS: Utility Theory
 - NIFDE, Forward; Preface; Ch 1: The Plight of the Economist (20 p.)
 - NIFDE, Ch 2: The Second Coming of Adam Smith (33 p.)
 - Bartlett, TLAE, Lecture 01, The Economist's Tool Kit—6 Principles
 - Taylor, UE, Lecture 01, The World of Choices

Homework 1 due, 5 PM, Friday, 9 Feb

Week 5: Free Market Economics

Lecture 1: The Production Possibilities Model & Comparative Advantage, 13 Feb

Lecture 2: Living with the Laws of Nature: Production Possibilities, continued 15 Feb

Readings and Videos

- Essential (11 p. technical; 26 p. easy reading; 30 min. video)
 - MMS, Ch 2 Evaluating Production Possibilities, pp. 6-16
 - MQS: Production Theory
 - NIFDE, Ch 3: Malthus: Prophet of Doom and Population Boom (26 p.)
 - NIFDE, Ch 4: David Ricardo and the Cry for Free Trade (23 p.)
 - Bartlett, TLAE, Lecture 02, The Economist's Tool Kit—3 Core Concepts

Exercise 1 posted 5 PM, Friday, 16 Feb, due 5 PM, Friday, 15 Mar

Week 6: The Not-So-Dismal Science—Making a Living by Taming Nature [CLOs A-1. B-1]

Lecture 1: Self-organizing markets and The Invisible Hand, "I, Pencil," 20 Feb

Lecture 2: Tools and Techniques: Online lab session, 22 Feb

Readings and Videos

- Essential (10 p. technical; 48 p. easy reading. 60 min. video)
 - MMS, Ch 3 Demand, pp. 17-26
 - MQS: Supply and Demand
 - NIFDE, Ch 7 – Alfred Marshall and the Marginalist Mind (28 p.)
 - APONVR, Ch. 3, Enough with the Plastic Straws (20 p.)
 - Bartlett, TLAE, Lecture 03, The Myth of "True Value"
 - Bartlett, TLAE, Lecture 04, Incentives and Optimal Choice

- "I, Pencil," by Leonard Reed (website)
- **Exercise 2 posted Friday, 23 Feb, due Friday, 5 Apr**

Week 7: The Power and Productivity of the Free Market System [CLOs A-1. B-1]

Lecture 1: The Factors of Production & the Production Function, 27 Feb

Lecture 2: Discussion: *Apocalypse Never* and the course term paper, 29 Feb

Readings and Videos

- Essential (10 p. technical: 20 p. easy)
 - MMS, Ch 4 Supply, pp. 27-36
 - MQS: Supply and Demand
 - APONVR, Ch. 4, The Sixth Extinction is Cancelled (20 p.)

Week 8: Market Structure: Efficiency and Equilibrium [CLOs A-1. B-1]

Lecture 1: Supply and demand, Part II: The driving forces, 5 Mar

Lecture 2: Charter Day – no class meeting, 7 Mar

Readings and Videos

- Essential (26 p. technical: 22 p. easy; 30 min. video)
 - MMS, Ch 5 Market Equilibrium, pp. 37-43
 - MQS: Market Equilibrium
 - EE, Ch. 3, Benefits and Costs, Supply and Demand, pp. 40-59
 - APONVR, Ch. 5, Sweatshops Save the Planet (22 p.)
 - Bartlett, TLAE, Lecture 07, Playing the Odds—Reason in a Risky World
- Supplemental
 - Bartlett, TLAE, Lecture 08, The Economics of Information

Term paper topic and initial outline due 5 PM, Friday, 8 Mar

Week 9: Market Structure: The Theory of the Firm: Perfect Competition

Lecture 1: Costs of Production: Online lab session—Exercise #2, 12 Mar

Lecture 2: Perfect Competition, 14 Mar

Readings and Videos

- Essential (22 p. technical: 19 p. easy)
 - MMS, Ch 7 Cost of Production, Ch 8 Perfect Competition, pp. 54-76
 - MQS: Production Theory, Costs in the Short Run
 - APONVR, Ch. 6, Greed Saved the Whales, Not Greenpeace (19 p.)
- Supplemental
 - NIFDE, Ch 8: Old and New Institutionalists (30 p.)
 - Bartlett, TLAE, Lecture 08, The Economics of Information
 - Bartlett, TLAE, Lecture 10, Think Again—Evaluating Risk in Purchasing
 - Bartlett, TLAE, Lecture 11, Behavioral Economics—What Are We Thinking?
 - NIFDE, Ch 9: Keynes: Bon Vivant as Savior (19 p.)

Exercise 1 due 5 PM, Friday, 15 Mar

Spring break: 18-22 March

Week 10: Theory of the Firm: Less-Than-Perfect Competition [CLOs A-1. B-1]

Lecture 1: Monopoly, 26 Mar

Lecture 2: Oligopoly and Monopolistic Competition, 28 Mar

Readings and Videos

- Essential (23 p. technical; 19 p. easy)
 - MMS, Ch. 9 Monopoly; Ch. 10 Oligopoly; Ch. 11 Monopolistic Competition; Conclusion, (pp. 77-86, 87-90, 91-95, 96-100.)
 - MQS: same topics as above
 - APONVR, Ch. 7: Have Your Steak and Eat It, Too (19 p.)
- Supplemental
 - NIFDE, Ch 10: Milton Friedman and the Monetarists Battle Against Keynes (24 p.)
 - Bartlett, TLAE, Lecture 12, Acting Like an Economist

Part III: PRINCIPLES OF ENVIRONMENTAL ECONOMICS

Week 11: Market System Blemishes: Beauty is Only Skin Deep [CLOs A-1. 2, 3, 4; B-1, 4]

Lecture 1: Market Shortcomings: Externalities and Public Goods, 2 Apr

Lecture 2: Discussion of Apocalypse Never, 4 Apr

Readings and Videos

- Essential (18 p. technical; 62 p. easy)
 - EE, Ch. 4 Markets, Externalities, and Public Goods, pp. 60-77 (technical)
 - APONVR, Ch. 8: Saving Nature is Bomb (30 p.)
 - Galbraith, TAOU. Ch 2, pp. 43-75- The Manners and Morals of High Capitalism (32 p.)
- Recommended
 - Galbraith, TAOU. Ch 1, pp. 11-42 – The Prophets and Promise of Classical Capitalism
- Supplemental
 - Galbraith, 1977, The Age of Uncertainty, episodes 1 and 2, on YouTube
 - NIFDE, Ch 5: The Stormy Mind of John Stuart Mill (24 p.)
 - NIFDE, Ch 6: The Angry Oracle Called Karl Marx (32 p.)

Exercise 2 due Friday, 5 Apr

Exercise 3 posted Friday, 5 Apr, due Friday, 3 May

Week 12: Natural Resource Economics: Making a Living...and Thriving [CLOs A-1. 2, 3, 4; B-1, 4]

Lecture 1: The Unregulated Free Market, 9 Apr

Lecture 2: Discussion: The West Virginia Coal War of 1921, 11 Apr

Readings and Videos

- Essential (38 technical; 25 easy; 30 min. video)
 - EE, Ch. 1 What is Environmental Economics? pp. 1-18 (light technical)
 - EE, Ch. 2 The Economy and the Environment, pp. 20-38 (technical)
 - APONVR, Ch. 9: Destroying the Environment to Save It (25 p.)
 - The Battle of Blair Mountain (Moodle site)
 - Bartlett, TLAE, Lecture 05, False Incentives, Real Harm

Term paper detailed outline due Fri, 12 Apr

Part IV: ENVIRONMENTAL MANAGEMENT

Week 13: Economics of Environmental Quality: Preserving the Nice Stuff

Lecture 1: Managing Environmental Quality, 16 Apr

Lecture 2: Managing Environmental Quality (presentations and discussion), 18 Apr

Guests: CAPT Brian Bearden, USPHS, CNMI BECQ; Mr. Paul Kemp, GWA Asst. GM for Compliance and Safety, Ms. Maurnyn McDonald, GWA Wastewater CIP Supervisor.

Readings and Videos

- Essential (40 p. technical; 25 p. easy)
 - EE, Ch. 5, Economics of Environmental Quality, pp. 78-102
 - EE, Ch. 17, State and Local Environmental Issues, pp. 322-338
 - APONVR, Ch. 10: All About the Green (25 p.)
- Supplemental
 - NIFDE, Ch. 11: Public Choice School: Politics as a Business

Week 14: Analysis of Environmental Quality [CLOs A-1, 2, 3, 4; B-1, 2, 3, 4]

Lecture 1: Approaches to Environmental Assessment, 23 Apr

Lecture 2: Online lab: Review of EX3 Sections A and B, 25 Apr

Readings and Videos

- Essential (21 p. technical; 28 p. easy; 60 min. video)
 - EE, Ch. 6, Frameworks of Analysis, pp. 104-125
 - APONVR, Ch. 11: The Denial of Power (28 p.)
 - Bartlett, TLAE, Lecture 09, *A Matter of Time—Predicting Future Values*
 - Bartlett, TLAE, Lecture 10, *Think Again—Evaluating Risk*
- Supplemental
 - Taylor, UE, Lecture 17, Risk and Uncertainty

Week 15: Management: Economics and Politics [CLOs A-1, 2, 3, 4; B-1, 2, 3, 4]

Lecture 1: Online lab: Review of EX3, Section C, 30 Apr

Lecture 2: Discussion of "The Big Picture:" Ch 9-12, APONVR, 2 May

Readings and Videos

- Essential (10 p. technical; 35 p. easy; 30 min. video)
 - EE, Ch. 9, Criteria for Evaluating Environmental Policies, pp. 166-176.
 - APONVR, Ch. 12: False Gods for Lost Souls (33 p.); Epilogue (3 p.)
 - Taylor, UE, Lecture 18, *Human Herds and Information Cascades*
- Supplemental
 - NIFDE, Ch. 12: The Wild World of Rational Expectations and Behavioral Economics

Exercise 3 due Friday, 3 May

Week 16: Dead Week - No class meetings or new assignments

Term Paper due 5 PM, Friday, 10 May

Week 17: Finals Week, 13-15 May

Term paper presentations, 1000-1200 ChST

- Final exam: 15-min presentation of each term paper, Wednesday, 15 May