

ECON 3213-002
ENVIRONMENTAL ECONOMICS
FALL 2022

| | |
|-----------------------------|--|
| Location and time | Tues/Thurs, 9:00 a.m. – 10:15 a.m. in Adams Hall 100 |
| Duration | August 22, 2022 – December 9, 2022 |
| Instructor | Dr. Jayash Paudel 308 Cate Center One, Room # 422 jayash.paudel@ou.edu |
| Student hours | Tuesdays and Thursdays (Room # 422), 10:30 a.m. – 11:30 a.m. |
| Teaching assistant | Sushant Singh sushant.singh@ou.edu |
| Course description | Environmental and natural resource economics is a rapidly growing and changing field as many environmental issues become global in nature. The course tackles such complex issues that face our globe and explores both the nature of the problems and how economics can provide potential solutions. The class focuses on the economics of public policy toward natural resources and the environment, with a special emphasis on problems of market failure. These include externalities, public goods, non-market goods, uncertainty, income distribution, and policies to correct for imperfect markets. Note: a solid understanding of algebra is needed for this course. |
| Course prerequisites | Grade of C or higher in: ECON 1123 (Principles of Microeconomics) |
| Course goals | After taking this course, students will be able to apply the tools of environmental economics, including some mathematical and graphical analysis, to think critically about the environmental implications of economic behavior. Students will also learn how to identify and critically evaluate appropriate policy responses by local, regional, or national governments—possibly coordinated with other governments or intergovernmental organizations. Students will further hone their skills in presenting clear, concise and compelling arguments to examine individual decisions, business environment(s) and policy issues. |
| Course topics | Among other subjects, this course will delve into the following: <ul style="list-style-type: none">• Overview of the economics of the environment• Property rights, market failures, and externalities• Benefit-cost analysis• Valuing non-market goods and services (the environment, more broadly)• Pollution control• Environmental justice• Energy and recyclable resources• Water pollution• Climate change• Sustainable development |

Textbook (required) *Environmental & Natural Resource Economics*, by Tom Tietenberg and Lynne Lewis (11th edition, ISBN-13: 978-1138632295, ISBN-10: 1138632295)

The lectures and course materials are consistent with the book. Required readings from peer-reviewed journal articles will be available for download on canvas.

Course website Canvas

Important dates These are university holidays and dates for Exams 1 & 2, and final exam time:

| | |
|------------------------|--------------------------------|
| Labor Day Holiday | Mon, 9/5 |
| Exam 1: | Thurs, 9/29 |
| Exam 2: | Thurs, 11/17 |
| Thanksgiving vacation: | Wed – Sun, 11/23 – 11/27 |
| Final Exam: | Mon, 12/12, 8:00 am – 10:00 am |

Grading Assignments and exams in the course have these weights:

| | |
|----------------------|-----|
| Class participation: | 5% |
| Discussion posts: | 10% |
| Homework: | 10% |
| Exam 1: | 15% |
| Exam 2: | 15% |
| Final exam: | 20% |
| Group paper: | 15% |
| Group presentation: | 10% |

There is no set “curve” for this course or designated number of certain grades. No other extra credit opportunities are allowed.

Course grades are A: 90 or above, B: 80-89, C: 70-79, D:60-69, F: lower than 60.

Class format

Readings

Upcoming reading assignments will be announced in lecture. Please come to class prepared.

Discussion posts

You will be asked to write discussion posts on Canvas in response to assigned readings. In addition to your post based on the assigned reading, you will have to comment on two other posts written by your classmates. If you write a post and do not respond to your classmate’s posts, you will not get full credit.

Homeworks

There will be roughly ten homework sets assigned throughout the semester. Please turn them in-person or online in Canvas. The only acceptable file formats during online submissions are Word and PDF. Late homework assignments will be heavily discounted. You are free to work on them with others, but you must turn in your own solutions. Your solutions need to be complete and presented in a neat and orderly fashion. Solutions for numerical problems will be provided on canvas.

Group paper

You will write a short, 6-page policy brief for an audience that includes policymakers, legislators, or other non-academics. To do so, you should choose an environmental or natural resource issue that is of interest to you. In your brief, you will introduce the issue, analyze it, and make a recommendation based on the economic theories and method used in this course. You should support your position with papers, studies, and other references. The text should have 12pt font, double spaced (not including references, figures and tables). Please put all figures and tables at the end of the report, so that the text limit is clear. As with the homework, please submit the papers through Canvas. The only acceptable file formats are Word and PDF. Late submissions will be heavily discounted.

Group presentation

Your group will distill your findings from the writing assignment into compelling 6-8 minutes long oral presentations at the end of the semester. More details will be provided later in the semester.

Exams

There will be a total of three exams. Exams are comprehensive (all material from previous lectures is fair game). These exams are closed book and you will not be permitted access to any outside materials. You should not miss any exams. If for any reason you will miss the exam you **MUST** inform me **BEFORE** the exam is given; only then can arrangements be made for you to take the exam at another time.

Make-up exams will only be given for legitimate reasons (e.g., illness, family emergency, student athletics, religious holiday) with verifiable documentation (e.g., letter from physician). Unless you have a legitimate reason with third-party, verifiable documents for your absence during an exam, you will not be allowed to take a make-up exam. Notification in advance, if possible, is appreciated.

Class protocol

Class attendance is expected and critical to success in this course. You will be responsible for learning a lot of unfamiliar material in a short amount of time and the worst thing you can do is fall behind. If you miss class, it is your responsibility to find out about announcements made in class and go over the material that was covered. Students who consistently fail to attend class cannot expect individual tutoring from me.

If you choose to come to class, I expect you to engage in class – or at the very least, you should not be a distraction by being rude. You should turn off your cell phone. You may not receive or make phone calls, text messages, or otherwise play with your phone. Thoughtful contributions to classroom discussions will positively affect your grade, as will helping other students. Please recognize that your classmates are a helpful collaborative resource if you have questions about the material.

Email policy

During the semester, I will be sending emails to your ou.edu email account and it is **YOUR** responsibility to make sure that you have a working ou.edu email. If you would like to schedule an appointment or ask a question, please send me an email from your OU email account. Please note that I will only respond to emails originating from your OU email account for security.

College is preparation for your professional life and career. Therefore, it is necessary to start using professional etiquette in your communications with others. Texting language and acronyms are not acceptable in emails addressed to your professors. Email messages need to be respectful (beginning with a proper address, such as “Prof.” or “Dr.”), concise, and clear. For most of your course-related questions refer to the syllabus first for answers. If you do not get an email response from your professor, it is likely that your email message did not meet the above guidelines. For a few guiding rules on how to email your professor, please review the link [here](#).

Tentative outline

Note that these dates may change over the semester, depending on how much class time is devoted to the topics.

| Date | Week | Topic | Reading | Dates |
|-------------|-------------|--|----------------|---------------|
| 8/23 | W1 Tues | Syllabus and Overview | -- | -- |
| 8/25 | W1 Thurs | Visions of the Future | Chapter 1 | HW1 assigned |
| 8/30 | W2 Tues | Property Rights, Market Failures, Externalities | Chapter 2 | |
| 9/1 | W2 Thurs | Property Rights, Market Failures, Externalities | Chapter 2 | HW1 due |
| 9/6 | W3 Tues | Property Rights, Market Failures, Externalities | Chapter 2 | HW2 assigned |
| 9/8 | W3 Thurs | Valuation of the Environment | Chapter 4 | |
| 9/13 | W4 Tues | Valuation of the Environment | Chapter 4 | HW2 due |
| 9/15 | W4 Thurs | Valuation of the Environment | Chapter 4 | HW3 assigned |
| 9/20 | W5 Tues | Trade-offs: Benefit-Cost Analysis | Chapter 3 | HW4 assigned |
| 9/22 | W5 Thurs | Trade-offs: Benefit-Cost Analysis | Chapter 3 | HW3 due |
| 9/27 | W6 Tues | Review Class | -- | HW4 due |
| 9/29 | W6 Thurs | Exam 1 | -- | -- |
| 10/4 | W7 Tues | Final Group Writing Assignment-related Tasks: Details will be provided | | |
| 10/6 | W7 Thurs | | | |
| 10/11 | W8 Tues | Dynamic Efficiency | Chapter 5 | HW5 assigned |
| 10/13 | W8 Thurs | Dynamic Efficiency | Chapter 5 | HW6 assigned |
| 10/18 | W9 Tues | Economics of Energy | Chapter 7 | HW5 due |
| 10/20 | W9 Thurs | Economics of Energy | Chapter 7 | |
| 10/25 | W10 Tues | Recyclable Resources | Chapter 8 | HW6 due |
| 10/27 | W10 Thurs | Recyclable Resources | Chapter 8 | HW7 assigned |
| 11/1 | W11 Tues | Locationally Fixed Resource: Land | Chapter 10 | HW8 assigned |
| 11/3 | W11 Thurs | Locationally Fixed Resource: Land | Chapter 10 | HW7 due |
| 11/8 | W12 Tues | Review Class | -- | HW8 due |
| 11/10 | W12 Thurs | Exam 2 | -- | -- |
| 11/15 | W13 Tues | Economics of Pollution Control | Chapter 14 | HW9 assigned |
| 11/17 | W13 Thurs | Environmental Justice | Reading | HW10 assigned |
| 11/22 | W14 Tues | Climate Change | Reading | HW9 due |
| 11/29 | W15 Tues | Sustainability | Reading | HW10 due |
| 12/1 | W15 Thurs | Group Presentations | -- | -- |
| 12/6 | W16 Tues | Group Presentations | -- | -- |
| 12/8 | W16 Thurs | Group Paper Due Final Exam Review | -- | -- |
| 12/12 | W17 Mon | Final Exam: 8:00-10:00 am | -- | -- |

Required readings

In addition to the textbook, I require you to read the following three academic articles that will be uploaded on Canvas:

Banzhaf, Spencer, Lala Ma, and Christopher Timmins. "Environmental justice: The economics of race, place, and pollution." *Journal of Economic Perspectives* 33, no. 1 (2019): 185-208.

Carleton, Tamma A., and Solomon M. Hsiang. "Social and economic impacts of climate." *Science* 353, no. 6304 (2016): aad9837.

Heal, Geoffrey. "Reflections—defining and measuring sustainability." *Review of Environmental Economics and Policy* (2020).

Additional recommended materials

In certain economics classes, especially those with a significant emphasis on theory, it can be challenging to translate potentially abstract concepts learned in lecture to the “real world.” To some extent, this situation is less likely for those taking environmental economics courses. You are likely to see a wide coverage of environmental topics (e.g., air quality, water pollution, climate change, environmental justice) in the news and on social media.

See the links below to (relatively) recent podcasts, blogs, short policy briefs, and books related to our class content. This is a very short list, and I encourage you all to seek out similar material based on your interests.

Property Rights, Market Failures, and Externalities

Planet Money: [Summer School 4: Scarcity & Pistachios](#), 28-minute listen

Planet Money: [The Bees Go To California](#), 22-minute listen

Econ Talk: [Coase on Externalities, the Firm, and Economics](#). 1-hour listen

Benefit-Cost Analysis

RFF site: [Benefit-Cost Analysis](#), various links

Planet Money: [Lives Vs. The Economy](#), 25-minute listen

Cass Sunstein, [The Cost-Benefit Revolution](#), interesting non-technical book

Nonmarket Valuation and Other Valuation Techniques

Planet Money: [What's It Worth To You?](#), 18-minute listen

Smithsonian: [What's the Ocean Worth...In Dollars?](#) 10-minute read

Local and Regional Air Pollution + Energy + Utilities

Freakonomics: [This is Your Brain on Pollution](#), 46-minute listen

The Indicator: [The War on Coal](#), 4-minute listen

RFF: [Reducing Coal Plant Emissions by Cofiring with Natural Gas](#), policy brief

Resources Radio: [Highs and Lows of Fracking in Rural America](#), 32-minutes

Mobile Air Pollution

The Indicator: [Gas Power To Electric Power To...Foot Power?](#), 9-minute listen

EPA: [What You Can Do To Reduce Pollution from Vehicles and Engines](#), read

MIT Energy Initiative: [Mobility of the Future](#), 22-minute listen

Water Quality and Pollution

RFF site: [Water Quality](#), various links

WRI Podcast: [A Sustainable Ocean Economy](#), 32-minute listen
Resources Radio: [Market Solutions for Water Pollution](#), 29-minute listen

Climate Change (far too many to list here)
Last Week Tonight with John Oliver: [Carbon Offsets](#) 24-minute watch
RFF: [Federal Climate Policy 101: Reduce Emissions](#), 20-minute read
Resources Radio: [Managing Wildfires to Combat Climate Change](#), 29 minutes
Planet Money: [Emission Impossible](#), 23-minute listen
Econ Talk: [Martin Weitzman on Climate Change](#), 68-minute listen

University Policies

| | |
|---------------------------------------|--|
| Academic integrity | Cheating is strictly prohibited at the University of Oklahoma. Academic misconduct inhibits learning, erodes educational value, and damages the professional reputations of those affiliated with the University. Violations have serious consequences and will be referred to the Office of Academic Integrity Programs. For specific definitions on what constitutes cheating, review the Student's Guide to Academic Integrity . |
| Reasonable accommodation | Students in this course who have a disability that may prevent them from fully demonstrating their abilities should contact me personally as soon as possible so we can discuss accommodations necessary to ensure full participation and facilitate educational opportunities. The Accessibility and Disability Resource Center is committed to supporting students with disabilities to ensure that they are able to enjoy equal access to all components of their education. This includes your academics, housing, and community events. If you are experiencing a disability, a mental/medical health condition that has a significant impact on one or more life functions, you can receive accommodations to provide equal access. Possible disabilities include, but are not limited to, learning disabilities, AD(H)D, mental health, and chronic health. To discuss potential accommodations, please contact the ADRC at 730 College Avenue, (ph.) 405.325.3852, or adrc@ou.edu . |
| Title IX resources | For any concerns regarding gender-based discrimination, sexual harassment, sexual misconduct, stalking, or intimate partner violence, the University offers a variety of resources, including advocates on-call 24/7, counseling services, mutual no contact orders, scheduling adjustments and disciplinary sanctions against the perpetrator. Please contact OU Advocates (available 24/7 at 405-615-0013) to learn more or to report an incident. For more information, please visit the Institutional Equity Office . |
| Mental health support services | If you are experiencing any mental health issues that are impacting your academic performance, counseling is available at the University Counseling Center (UCC). The Center is located on the second floor of the Goddard Health Center, at 620 Elm Rm. 201, Norman, OK 73019. To schedule an appointment call (405) 325-2911. For more information, please visit University Counseling Center . |
| Adjustments for pregnancy or | Should you need modifications or adjustments to course requirements because of documented pregnancy-related or childbirth-related issues, please contact me or |

| | |
|-------------------------------|---|
| childbirth issues | the Accessibility and Disability Resource Center at 405/325-3852 as soon as possible. Please see FAQ on Pregnant and Parenting Students' Rights for answers to commonly asked questions. |
| Religious observances | It is the policy of the University to excuse student absences that result from religious observances and reschedule examinations and additional required classwork that may fall on religious holidays, without penalty. |
| Final Exam Preparation | Pre-finals week will be defined as the seven calendar days before the first day of finals. Faculty may cover new course material throughout this week. For specific provisions of the policy, please refer to OU's Final Exam Preparation Period policy . |
| Emergency Protocol | During an emergency, there are official university procedures that will maximize your safety. Please review the link to understand emergency protocol for severe weather, armed subject/campus intruder and fire alarm/general emergency. |

Careers in Economics

Economics majors succeed in a wide variety of areas including business, finance, education, law, medicine, international relations, banking, insurance, non-profits, consulting, government agencies, and countless other areas. Economists analyze data, run models (including projections/forecasts), write, report, explain, think, argue, solve problems, and generally help facilitate the private and public sectors in countless ways. The BLS currently reports median salaries for economists around \$109,000. Later career economists rise significantly from this level.

Economics is also a fun and exciting field to work in! Specializations include Health Economics, Public Finance, Education, International Trade, Environmental Economics, Industrial Organization, Labor Economics, Statistics & Econometrics, Discrimination, Development Economics, Financial Economics, Game Theory, Housing Economics, Agricultural Economics, and Sports Economics. Most all of these are all offered regularly by the OU Department of Economics. You should take these classes! For more information please visit: <https://www.aeaweb.org/resources/students/careers>

Anyone interested in an OU Economics degree, or even just in taking more classes in Econ should visit with the team of advisers and staff in the Economics Department – mainly Ms. Corey Quiett (cquiett@ou.edu) or with the team of Price College of Business advisors. If you are interested in pursuing a Ph.D. in Economics or a related field later down the line – please reach out to Dr. Pallab Ghosh (pallab.ghosh@ou.edu), the current Director of Graduate Studies in OU Economics.