

AEB 3450: Intro. to Natural Resource and Environmental Economics Spring 2025

Course Time and Location:

Tuesday 3:00 – 4:55 PM (Little Hall 0237); Thursday 4:05-4:55 PM (Little Hall 0201)

Instructor information:

Dr. Thomas Anderson, Assistant Professor

Email: thomas.anderson@ufl.edu

Office: 1097 McCarty Hall B

Phone Number: (352) 294-7658

Office Hours:

Wednesday 3:00-4:00 PM

Course Description:

Introduces natural resource and environmental economics. Emphasizes understanding economic concepts such as resource scarcity, market failure, externalities, property rights, and common property resources and their application to studies of forest, land, water, energy, and coastal resources. Credit cannot be received for both AEB 3450 and ECP 3302.

Prerequisites:

AEB 3103 or ECO 2023

Undergraduate Advisor:

Mr. Trey Gifford; 1170B McCarty Hall A; (352) 294-7640;

E-mail: agifford1@ufl.edu

Undergraduate Coordinator:

Dr. Misti Sharp; 1189 McCarty Hall A; (352)294-7632;

E-mail: mistisharp@ufl.edu

Teaching Assistant:

Name: Lijun Liu

Email: LL2700@ufl.edu

Office Hours: Tuesday 1:45-2:40 <https://ufl.zoom.us/j/96803032345>

Location: TBD

Student Learning Outcomes:

After the successful completion of AEB 3450, students should be able to:

- Analyze how property rights and other institutions create incentives for the use of natural resources
- Identify positive and negative externalities and describe why externalities are often used a justification for government policy

- Define a public good and explain why markets tend to provide fewer public goods than the public would like
- Illustrate why resources held as common property, such as fisheries, forests, and groundwater, often are overexploited
- Describe policy tools that can help to align private and public interests, within the context of environmental and natural resource management
- Critically evaluate common natural resource and environmental policy designs and identify tradeoffs between them
- Explain how economists estimate the value of goods and services that are not typically exchanged in the marketplace

Course Summary:

How much is an endangered species worth? Are we going to run out of fuel in the next 50 years? Are there ways to prevent deforestation, overfishing, and over-extraction of groundwater? These big challenges center around our relationship with the environment. Economics offers a promising framework for analyzing and predicting human behavior, evaluating the effectiveness of public policy, and designing solutions for emerging environmental problems

AEB 3450 aims to introduce the economics of natural resources and the environment. Students will gain an understanding of how economists approach environmental and natural resource problems from philosophical, methodological, and analytical perspectives.

This course is a core component of the Environmental Science major, designed to equip students with essential economic knowledge for addressing environmental issues. For economics majors, it offers a practical application of economic theories and paradigms to real-world environmental challenges. Additionally, it is valuable for students interested in environmental policy, natural resource management, and sustainable development. By integrating economic principles with environmental concerns, the course fosters a multidisciplinary approach to problem-solving.

Understanding environmental economics is crucial for anyone concerned about the future of the planet as most environmental problems stem from an economic root and require an economic solution. This course empowers students to critically analyze the impact of individual behaviors, social institutions, and government policies on the environment. By the end of the course, students will be better equipped to contribute to discussions and decision-making processes related to sustainable development, environmental conservation, and climate change mitigation.

Class Structure:

This is a lecture-based course, and students are expected to attend each class, in-person. This course will not be recorded or made available for asynchronous viewing.

Course Materials:

Recommended Texts:

The following texts are recommended but are not required for this course. A large proportion of my lectures come from the following two texts and I have listed recommended readings from

them in the lecture schedule. However, all assignments and assessments will be based on material that I will provide in lecture or which I have made available to you on Canvas.

1. Tietenberg, T. and Lewis, L. (2023). *Environmental and Natural Resource Economics*. Routledge, 12th Edition

Tietenberg and Lewis (TL) is a comprehensive textbook with far more material than we will be able to cover in a single semester. My page references will be for the 12th edition, but much of the material is likely available in earlier editions.

2. Keohane, N. and Olmstead, S. (2016). *Markets and the Environment*. Island Press, 2nd Edition.

Keohane and Olmstead (KO) offer a much more succinct treatment, focusing on the intuition of key concepts. The first edition is available in the library.

E-Learning

There is an [E-Learning Canvas webpage](#) for this course where I will post additional readings and course assignments. E-learning can be accessed via <http://elearning.ufl.edu> using your Gatorlink username and password. If you are having difficulties accessing E-learning, please contact the UF Computing Help Desk by calling (352)-392-HELP or via email helpdesk@ufl.edu.

Course Assignments and Composition of Final Score:

Your course grade will be determined by the following assignments. Their weight in your final score is noted as a percent.

1. Problem Sets (25%): There will be a total of 6 problem sets assigned during the semester and I will drop your lowest score. You are welcome to work on these assignments together but each individual must turn in their own assignment, written in their own words.
2. Resource Roundtable (25%): Over the course of the semester, students will be required to participate in one of five resource roundtable discussions concerning a contemporary environmental policy problem. Each student will be required to participate in an in-class discussion and complete a written reflection. More information on this project will be provided during the first week of the course.
3. Midterm Exam (25%): The Midterm Exam will occur during a Tuesday class and will be conducted in the same location as our lectures. This exam will be closed book (see weekly schedule for an approximate week).
4. Final Exam (25%): The Final Exam will occur on Tuesday April 29 from 10:00 am – 12:00 pm, as determined by the University Registrar. The exam will be closed book and students will be responsible for all course material. However, the exam will place more emphasis on concepts covered since the Midterm Exam.

Late Policy

Late assignments will lose 10% for each 24-hour period following the posted deadline. After five days, students may turn in the assignment anytime during the semester for a maximum score of 50%. Students are encouraged to submit their assignments well in advance of the Canvas deadline to avoid technical issues. To be fair to all students, deductions for late assignments are automatically assigned by Canvas based upon the recorded time of submission.

Re-Grades

If you feel that you deserve a different score than what was awarded on an assignment or exam, you may request a regrade. This request must be made in writing directly to Prof. Anderson within seven calendar days of receiving the grade in question. In this request, you must provide a clear, concise argument as to why you feel that you deserve more credit than was awarded. Your assignment may be reviewed in its entirety, and your score may increase or decrease based on Prof. Anderson's evaluation. The new score will be final.

Student Evaluation:

Grade	Percentage	Total points	Grade Points
A	93% or more	≥ 465	4.00
A-	90.0 – 92.9%	450 - 464	3.67
B+	86.0 – 89.9%	430 - 449	3.33
B	83.0 – 85.9%	415 - 429	3.00
B-	80.0 – 82.9%	400 - 414	2.67
C+	76.0 – 79.9%	380 - 399	2.33
C	73.0 – 75.9%	365 - 379	2.00
C-	70.0 – 72.9%	350 - 364	1.67
D+	66.0 – 69.9%	330 - 349	1.33
D	63.0 – 65.9%	315 - 329	1.00
D-	60.0 – 62.9%	300 - 314	0.67
E	59.9% or less	≤ 299	0.00

Grades and Grade Points

For information on current UF policies for assigning grade points, see <https://catalog.ufl.edu/UGRD/academic-regulations/grades-grading-policies/>

Attendance and Make-Up Work

Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at: <https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/>

Course Evaluation

Student assessment of instruction is an important part of efforts to improve teaching and learning. At the end of the semester, students are expected to provide feedback on the quality of

instruction in this course using a standard set of university and college criteria. Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at: <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at: <https://gatorevals.aa.ufl.edu/public-results/>.

Academic Honesty

As a student at the University of Florida, you have committed yourself to uphold the Honor Code, which includes the following pledge: “*We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honesty and integrity.*” You are expected to exhibit behavior consistent with this commitment to the UF academic community, and on all work submitted for credit at the University of Florida, the following pledge is either required or implied: “*On my honor, I have neither given nor received unauthorized aid in doing this assignment.*”

It is assumed that you will complete all work independently in each course unless the instructor provides explicit permission for you to collaborate on course tasks (e.g. assignments, papers, quizzes, exams). Furthermore, as part of your obligation to uphold the Honor Code, you should report any condition that facilitates academic misconduct to appropriate personnel. It is your individual responsibility to know and comply with all university policies and procedures regarding academic integrity and the Student Honor Code. Violations of the Honor Code at the University of Florida will not be tolerated. Violations will be reported to the Dean of Students Office for consideration of disciplinary action. For more information regarding the Student Honor Code, please see: <http://www.dso.ufl.edu/sccr/process/student-conduct-honor-code>

Software Use

All faculty, staff and students of the university are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate.

Services for Students with Disabilities

The Disability Resource Center coordinates the needed accommodations of students with disabilities. This includes registering disabilities, recommending academic accommodations within the classroom, accessing special adaptive computer equipment, providing interpretation services and mediating faculty-student disability related issues. Students requesting classroom accommodation must first register with the Dean of Students Office. The Dean of Students Office will provide documentation to the student who must then provide this documentation to the Instructor when requesting accommodation.

0001 Reid Hall, 352-392-8565, <https://disability.ufl.edu/>

Campus Helping Resources

Students experiencing crises or personal problems that interfere with their general wellbeing are encouraged to utilize the university's counseling resources. The Counseling & Wellness Center provides confidential counseling services at no cost for currently enrolled students. Resources are available on campus for students having personal problems or lacking clear career or academic goals, which interfere with their academic performance.

Health and Wellness

U Matter, We Care: If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit [U Matter, We Care website](#) to refer or report a concern and a team member will reach out to the student in distress.

Counseling and Wellness Center: [Visit the Counseling and Wellness Center website](#) or call 352-392-1575 for information on crisis services as well as non-crisis services. Address: 3190 Radio Road. Services provided:

- Counseling services
- Groups and workshops
- Outreach and consultation
- Self-help library
- Wellness coaching

Student Success Initiative: <https://studentsuccess.ufl.edu/> Services provided:

- Advising
- Peer mentoring
- Coaching
- Peer tutoring

Student Health Care Center: Call 352-392-1161 for 24/7 information to help you find the care you need, or [visit the Student Health Care Center website](#).

Academic Resources

E-learning technical support: Contact the [UF Computing Help Desk](#) at 352-392-4357 or via e-mail at helpdesk@ufl.edu.

Career Connections Center: Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.

Library Support: Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center: Broward Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring.

Writing Studio: 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.

Student Complaints On-Campus: <https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>

On-Line Students Complaints: <https://pfs.tnt.aa.ufl.edu/state-authorization-status/#student-complaint>

Course Schedule and Module Descriptions

Date*	Lecture Topic	Problem Sets and Roundtables	Recommended Reading
14-Jan	Intro: Syllabus, Economic Perspectives		
16-Jan	Principles: Benchmarks for evaluating policy (Efficiency)		TL Ch. 2 pg. 18-23 KO Ch. 2 pg. 11-30
21-Jan	Principles: Externalities		
23-Jan	Principles: Property Rights, Coase, Public Goods, Role of Government		TL Ch. 2 pg. 24-31 KO Ch. 5 pg. 85-94 KO Ch. 8 pg. 139-143
28-Jan	Principles: Property Rights, Coase, Public Goods, Role of Government	PS 1 Due	
30-Jan	Principles: Evaluating Tradeoffs Pt. 1, CBA, Benchmarks for policy (Cost-Eff., Equity)		TL Ch. 3 41-45
4-Feb	Externalities: Costs of Abatement, Pollution as a Motivating Example		TL Ch. 7 pg. 155-164 TL Ch. 8 pg. 189-192
6-Feb	Externalities: Command and Control, Technology and Performance Standards	PS 2 Due	
11-Feb	Externalities: Taxes, Subsidies, Cap and Trade	RT1	TL Ch. 7 pg. 164-169 KO Ch. 8 pg. 143-162 KO Ch. 9 pg. 168-184
13-Feb	Externalities: Taxes, Subsidies, Cap and Trade		
18-Feb	Externalities: Taxes, Subsidies, Cap and Trade		
20-Feb	Externalities: Uncertainty and Policy Choice	PS 3 Due	KO Ch. 8 pg. 162-167
25-Feb	Externalities: Catch Up, *Case Studies	RT2	KO Ch. 10 pg. 199-230
27-Feb	Externalities: Catch Up, *Case Studies		
4-Mar	MIDTERM		
6-Mar	Measuring Benefits and Costs: Non-Market Valuation		TL Ch. 3 pg. 52-60, Ch. 4 pg. 74-95
11-Mar	Measuring Benefits and Costs: Non-Market Valuation	RT3	
13-Mar	Measuring Benefits and Costs: Ecosystem Services	PS 4 Due	TL Ch. 16 pg. 387-390
18-Mar	Spring Break		
20-Mar	Spring Break		
25-Mar	Resources: Wildlife (Guest Lecture: Dr. Caleb Stair)		

27-Mar	Resources: Water (Guest Lecture Dr. Weizhe Weng)		
1-Apr	Resources: Evaluating Tradeoffs (Pt. 2) Discounting, Dynamic Decision Making		TL Ch. 3 pg. 45-50, 61- 67 KO Ch. 6 pg. 99-113
3-Apr	Resources: Property Rights, Natural Capital	PS 5 Due	
8-Apr	Resources: Non-Renewables	RT4	TL Ch. 6 pg. 131-147
10-Apr	Resources: Non-Renewables		
15-Apr	Resources: Renewable Resources, common pool problems, fisheries	RT5	TL Ch. 17 pg. 423-454
17-Apr	Resources: Renewables	PS 6 Due	
22-Apr	Resources and Wrap Up		KO Ch. 11 pg. 231-253
24-Apr	Reading Day		
29-Apr	FINAL EXAM		

*Lecture Topics and Due Dates are tentative and may change as needed