

**AEB 2451: Economics of Natural Resource Use**  
Fall 2023

**Instructor Information:**

Kelly Grogan  
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352-794-7633

**Office Hours:**

Mondays, 4:00 – 5:00PM  
Wednesdays, 12:30 – 1:30PM

**Course Logistics:**

MWF 3:00 – 3:50PM  
Classroom: Florida Gym 0220  
Final Exam: Monday, Dec. 11, 10AM – 12PM

**Teaching Assistant**

Victor Contreras  
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Office hours: TBD

**Course Description:**

This course explores the economics underlying a variety of environmental and natural resource issues as well as how economic policies can be used to address these issues.

**Course Objectives:**

1. Students will be able to identify externalities in a variety of environmental contexts and propose policy instruments to correct these externalities.
2. Students will be able to undertake cost-benefit analysis to determine whether a given environmental policy should be implemented.
3. Students will be able to consider intergenerational equity and allocations in a variety of environmental contexts.
4. Students will be able to propose management options for common pool resources.

**Required Knowledge:**

There are no prerequisites for this course. However, we will making extensive use of graphs and algebra. If this knowledge has gotten rusty, it is the student's responsibility to re-learn these skills.

**Required Textbook:**

Field, Barry C. Natural Resource Economics, An Introduction. Any edition. Waveland Press, Inc.

### **Suggested “Tools”**

This class includes many graphs that may benefit from using color. Purchasing colored pencils or pens is suggested.

### **UF Grading Policy:**

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

### **Course Grade and Assignments:**

Your grade will be determined by

- Four problem sets (15% in total, 5% each, lowest score dropped)
- Two exams (30% total, 15% each)
- Resource Roundtable Project (20%)
- Artificial Intelligence Assignment (15%)
- Participation (20%)
- Wellness bonus points (up to 6 per exam)

Letter grades will be assigned as follows:

A = 93 and higher

A- = 90 – 92

B+ = 87 – 89

B = 83 – 86

B- = 80 – 82

C+ = 77 – 79

C = 73 – 76

C- = 70 – 72

D+ = 67 – 69

D = 63 – 66

D- = 60 – 62

E = less than 60

#### *Problem Sets:*

There will be a total of 4 problem sets. Students are encouraged to discuss problems with others, but they are expected to write up their own assignments. Please write on your assignment the names of students with whom you discussed the assignment. Writing up assignments individually implies that assignments or any portion of the assignments will not be identical. Late problem sets will not be accepted. Make-up work for missed problem sets will not be given. If a student is absent when an assignment is due, they are still responsible for submitting it either through email or delivered by a friend before the start of class. The student’s lowest problem set score will be dropped.

#### *Exams:*

There will be two exams covering portions of the course material. All exams will be open-

note, open-book exams. The third exam will occur during the final exam period for the course, which is scheduled for Monday, Dec. 11, 10AM – 12PM. The final exam is not cumulative. There will be no make-up exams. If a serious, unforeseen, and documentable situation arises that prevents a student from taking any of the exams, the average of the other 2 exams will be entered for the missed exam.

#### *Resource Roundtables:*

To allow students to explore a natural resource topic of interest in greater depth, class will include 6 Resource Roundtables on topics that include: energy, water use, agriculture, fisheries management, and climate change. During the week of Aug. 28, students will choose one roundtable and one stakeholder role for that roundtable. In the class directly preceding that topic's coverage, all stakeholders for that roundtable will participate in an in-class roundtable discussion of a specific issue (to be determined based on feedback from students' "About You" handouts). All stakeholders will be given a set amount of time for an opening statement on their position on the issue. After opening statements, all stakeholders will be given a set amount of time to address other stakeholders' statements. Then we will open the floor for open discussion and questions from the rest of the class. All stakeholders will receive peer evaluations from their classmates. Completion of these peer evaluations will make up students' participation grade on those days. Peer evaluations will make up 50% of the stakeholder's grade, with the instructor's evaluation making up the other 50%.

#### *Artificial Intelligence Assignment*

ChatGPT and other tools are quickly changing how people work, and in particular, how people write. For this assignment, you are to pick one natural resource issue of your choosing and ask ChatGPT (<https://chat.openai.com/>) to write you a 5-page paper. I then want you to critique how it did. You should discuss: whether or not it missed any critical issues, whether there seem to be any errors in the document, if you would have come to the same conclusions as AI did, does the writing sound like you (if not, is it better or worse and how). AI can pull commonly cited sources and recognize common patterns that appear on the internet, but it cannot think critically (at least not yet). Only humans can do that. Show me that!

#### *Participation:*

Throughout the semester, we will be utilizing in-class activities and games to demonstrate course concepts. Your participation in these games, and in some instances, the points earned in the game, will earn you participation grade(s) for that day. Classes may include no games, one game, or several games. They may occur at any time during the class, including the very start of class. Every individual game will be weighted equally in your overall participation score. You will be allowed to drop 3 (and only 3) of your lowest participation grades without question or documentation needed in the case of absences. Use these drops wisely. If you become ill or another documentable emergency arises, please provide documentation (doctor's note, a note from U Matter, We Care, etc.) of the issue, including class dates impacted, to be excused from participation grades on those days.

### *Bonus Points:*

College can be challenging for students' mental health and well-being. The COVID-19 pandemic has exacerbated this effect. To incentivize activities to support well-being, students will be able to accumulate bonus points, to be applied to each exam, by exploring activities proven to support well-being. Students can earn one point per week by trying one of the practices provided by the University of Berkeley's Greater Good in Action Program (<https://ggia.berkeley.edu/>). To document the activity, the student should complete all sections in the wellness log (included at the end of this syllabus). Students should undertake a new activity each time. (You are welcome to repeat activities that you found beneficial; they just will not count again for your wellness bonus points). The student's wellness log should be submitted with its corresponding exam.

### **Lecture Resources**

Lectures are recorded and will be made available through e-learning. When applicable, handouts will be used to disseminate clear pictures of graphs and figures. Powerpoint slides will be made available as well, but these slides may not contain all material covered in class or included on exams.

### **Feedback**

I welcome feedback on lecture style, course content, and assignments. Periodically throughout the semester, I will email out a link to an anonymous survey to gather any feedback you may have. You are also always welcome to provide feedback directly to me. I want this course to be the best possible learning experience for all students.

### **Academic Honesty:**

Any student found to be in violation of the Student Honor Code will receive, as a minimum penalty, a grade of "0" on the assignment or exam. Students may also be asked to attend seminars on ethical decision making and/or avoiding plagiarism.

### **Attendance:**

Attendance counts towards your participation grade, so students are strongly encouraged to attend class (in person or online). If circumstances cause an extended absence from class, please talk to me in advance.

## **Course Outline:**

### I. Environmental and Natural Resource Economics Concepts & Tools

1. Demand and supply of environmental amenities (Ch. 2)
2. Non-market valuation methods (Ch. 3)
3. Property rights, externalities, public goods (Ch. 4)
4. Sustainable development and intergenerational equity (Ch. 5)
5. Allocations across time and space (Ch. 7)

### II. Specific Environmental and Natural Resource Issues

1. \*Energy (Ch. 8)
2. \*Water Allocation (Ch. 9)
3. \*Agriculture (Ch. 11)
4. \*Fisheries (Ch. 13)
5. Air Pollution (Ch. 15)
6. \*Climate Change (Ch. 15)
7. \*Forests (Ch. 12)
8. Transportation (Ch. 17)
9. Water Pollution (Ch. 18)
10. Waste (Ch. 19)

\*Indicates topic for which we will hold a Resource Roundtable

We will not have pre-specified days for topics in order to allow us to move at a pace most appropriate for this specific class and its students.

Tentative Schedule of Assignments and Exams

**\*\*Dates subject to change based on progression through material.\*\***

	Week	Mon	Tues	Wed	Thurs	Fri
Aug	1	21	22	23 First Day of Class	24	25
	2	28	29	30	21	1
Sept	3	4 No Class	5	6	7	8 PS 1 Given
	4	11	12	13	14	15 PS 1 Due
	5	18	19	20	21	22
	6	25 PS 2 Given	26	27	28	29
Oct	7	2 PS 2 Due	3	4	5	6 No Class
	8	9	10	11	12	13 Exam 1
	9	16	17	18	19	20
	10	23	24	25	26	27 PS 3 Given
	11	30	31	1	2	3 PS 3 Due
Nov	12	6	7	8	9	10 No Class
	13	13	14	15	16	17
	14	20 PS 4 Given	21	22 No Class	23	24 No Class
	15	27	28	29 PS 4 Due	30	1
Dec	16	4 AI Project Due	5	6 Last day of class	7	8

Final Exam: Monday, Dec. 11, 10AM – 12PM

PS: Problem Set

Resource Roundtables will be scheduled based on progression through course material.

## University 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](mailto: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](mailto: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>

**Lauren’s Promise: I will listen and believe you if someone is threatening you.**

Lauren McCluskey, a 21-year old honors student athlete, was murdered on October 22, 2018, by a man she briefly dated on the University of Utah Campus. We must all take actions to ensure this never happens again. Any form of sexual harassment or violence will not be excused or tolerated at the University of Florida.

If you are experiencing sexual assault, relationship violence, or stalking, you can take the following actions:

- If you are in immediate danger, call 911.
- Report it to me, and I will connect you to resources.
- Seek confidential sources of support and help:
  - [UFPD Office of Victim Services](#): 51 Museum Road, 352-392-5648
  - [Sexual Assault Recovery Services \(SARS\)](#): Infirmary Building, 352-392-1161
  - Alachua County Rape Crisis Center (confidential): 352-264-6760

**Diversity, Equity, and Inclusion:** The University of Florida’s College of Agricultural and Life Sciences (CALs) supports the University of Florida’s commitment to diversity, equity, and inclusion. By fostering a sense of belonging for students, staff, and faculty, while leveraging the uniqueness of the people who study and work at the university, we believe our campus community is enriched and enhanced by diversity, including but not limited to, race, ethnicity, national origin, gender, gender identity, sexuality, class, and religion. This course will support an understanding of the diversity of our distance and campus communities as well as our agricultural and natural resource communities, locally and globally.

This course will strive to create a learning environment for students that supports a diversity of thoughts, perspectives, and experiences while honoring your identities. In this class we will take the following approaches to help achieve this:

- All course participants will use the names and pronouns provided by students for use in class. If these differ from those that appear in official university records, you can change your Display Name at One.UF (see [Student Help FAQs - eLearning - University of Florida \(ufl.edu\)](#)).
- If your performance in this course is being impacted by your experiences inside and/or outside the classroom, do not hesitate to contact the instructor and/or teaching assistant (TA). Instructors in CALs are a great resource for you and you may provide feedback anonymously. Feedback may result in general announcements to the class, if necessary, or reporting to appropriate UF personnel to address your concerns.

- CALS instructors and TAs like many people, are still in the process of learning about diverse perspectives and identities. If something was said in class (by anyone) that makes you feel uncomfortable, please discuss with your instructor or TA or contact the CALS Dean's Office ([cals-dean@ufl.edu](mailto:cals-dean@ufl.edu)).

Wellness Activity Log, Exam 1

Week	Date Range	Date of Activity	Activity Chosen	Things I liked	Things I disliked	Other Observations	I would like to do this again (Y/N)
2	8/27 – 9/2						
3	9/3 - 9/9						
4	9/10 - 9/16						
5	9/17 - 9/23						
6	9/24 - 9/30						
7	10/1 – 10/7						
8	10/8 – 10/13						

Week	Date Range	Date of Activity	Activity Chosen	Things I liked	Things I disliked	Other Observations	I would like to do this again (Y/N)
9	10/15 – 10/21						
10	10/22 – 10/28						
11	10/29 – 11/4						
12	11/5 – 11/11						
13	11/12 – 11/18						
14	11/19 – 11/25						
15	11/26 – 12/2						