

University of Colorado at Boulder  
Spring Semester, 2025

## ECON 3535: Natural Resource Economics

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<b>Lecture:</b>	BESC 185, MWF, 2:30-3:20 PM
<b>Instructor:</b>	Alec Truax
<b>Office:</b>	ECON 401
<b>Office Hours:</b>	M & W 1:00-2:00 PM and by appointment
<b>Email:</b>	alec.truax@colorado.edu
<b>Website:</b>	Canvas

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### Course Description and Objective

This course in natural resource economics will introduce students to the interlinkages between natural resources and the economic system. Classic allocation problems for renewable and non-renewable resources will be examined. This course will also consider the fundamental role of institutions in shaping natural resource use. Understanding the incentives faced by users of natural resources will allow us to consider market failures and the important question of whether or not market interventions are justified on economic grounds. Because natural resources play a central role in many current energy and environmental policy debates, this course will also address policy issues related to climate change, renewable energy, transportation, and sustainability. The aim of this course is to teach you to think about incentives and trade-offs like an economist.

### Textbook

The required textbook is Tom Tietenberg & Lynne Lewis *Environmental and Natural Resource Economics* 12th ed Prentice Hall, 2023. This textbook is provided automatically by CU's Select Digital Access program. **You are not required to purchase this textbook and may opt of this program by 1/29.** A pdf of the 11th edition of this textbook is available on Canvas.

### Course Organization:

Class periods for this course will be a mix of lecture and discussion. Students are expected to attend class and contribute. The first half of the class will focus on the theory of natural resource economics with a midterm covering this material midway through the course. The second half of the class will focus on applications to natural resource, energy, and environmental policy. The final will cover material from the second half of the course. In addition to lectures and exams, this course will include readings from the text and graded unit summaries.

### Office Hours

I will hold in-person office hours every week, Monday and Wednesday, from 1:00 until 2:00 PM in ECON401. ECON401 is on the top-level of the Economics Building on the north side. Office hours may also be held on request subject to scheduling constraints, this applies to online meetings as well.

## Grading

Grades in this course will be determined by class participation, unit summaries, the midterm exam, and the final exam.

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### Course Grading Scheme:

<b>Class Participation:</b>	10%
<b>Unit Summaries</b>	30%
<b>Midterm Exam</b>	30%
<b>Final Exam:</b>	30%

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<b>Total:</b>	100%
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### Grading Scale

Grade	Percentage	Grade	Percentage
A	> 94	C	73 – 76
A-	90 – 93	C-	70 – 72
B+	87 – 89	D+	67 – 69
B	83 – 86	D	63 – 66
B-	80 – 82	D-	60 – 62
C+	77 – 79	F	< 60

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I will *round* according to standard conventions to the nearest digit. For example, an 89.5 will round to 90 and count as A- while an 89.4 rounds to 89 and is a B+.

- **Class Participation:** Discussion will comprise a significant component of our in-class time and students are expected to attend class and contribute regularly
- **Unit Summaries:** At the end of each of the six units, you will submit a 2-3 page review of the material covered in class. These are expected to be substantive treatments of the unit's material and include discussion on open or unresolved questions or debates related to the unit. Each unit will also include mathematical problems to be solved similar to those covered in lecture. Summaries will be graded for on-time submission and effort while math questions will be graded on correctness. Students are encouraged to work in groups of 2-3, however each student must submit their own summary individually. Submissions will be submitted on Canvas as .pdf files. Late summaries will be accepted up to three days late with a 20% penalty each day. No submissions will be accepted after this window.
- **Midterm Exam:** The midterm exam will cover units 1-3. The exam will have multiple choice and short answer questions. Expect to solve mathematical questions similar to the ones covered in lecture. The exam will be held in-class and closed book in the first week of March. The exact date will be finalized two weeks ahead of the exam.
- **Final Exam:** The final exam will cover units 4-6.<sup>1</sup> The exam will have multiple choice and short answer questions. Expect to solve mathematical questions similar to the ones covered in lectures. The final exam will be in-person and closed book. The university assigned date for the final exam is *Sunday May 4<sup>th</sup>, 1:30 - 4:00pm*, the exam will be held in our usually classroom.

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<sup>1</sup>i.e., the final exam is *not cumulative*

## Course Topics

The course will cover six units as listed below. For each unit, tentative topics are also listed.

1. Extraction of non-renewable resources:

- Mineral Products
- Oil and Gas
- Groundwater

2. Extraction of renewable resources:

- Fisheries
- Forestry
- Agriculture

3. Property rights and institutions:

- Open-access
- Common property
- The resource curse

### Midterm Exam

4. Natural resource policy

- Regulating externalities
- Property rights approaches

5. Climate change

- Costs of climate change
- Climate policies
- Technological innovation

6. Renewable Energy

- Power sector
- Transportation sector

**Final Exam (Sunday May 4<sup>th</sup>, 1:30 - 4:00pm)**

## Courses Policies

- **Attendance:** Attendance will be recorded to help visualize patterns and trends in the class but attendance is *not strictly mandatory*. However, *regular attendance is strongly recommended*, as it will be difficult to succeed in this course without actively participating in lectures. Lecture slides will be posted to Canvas but note that these are a study resource and neither a replacement for attendance nor a complete representation of the course material.
- **Make-up Work:** There will be no makeup tests or assignments, even if your reason for missing the deadline is very good. If a test conflicts with a mandatory CU event, arrangements can be made for you to take the test before the scheduled test day, but not afterwards.
- **Email Policy:** When contacting me via email, use your official colorado.edu address, include your full name, and use *ECON3535* as the subject line. Prior to emailing questions about the course, please review the syllabus to make sure the answer is not here. Please allow up to 24 hours for a response during the week before sending a follow-up email. I do not regularly check emails on weekends; these messages will be answered on Monday. Additionally, please start a new email instead of replying to any class-wide emails. This ensures I see all individual emails and avoids “reply-all” issues.
- **Technology:** The use of ChatGPT or other generative text models is not permitted for any part of the course. Assignments will be checked for plagiarism and evaluated using AI detection tools. If your work raises concerns, I will schedule a meeting with you to review it. To prevent any issues, I strongly recommend tracking all edits in your text processor (e.g., Word or Sheets) to maintain a clear record of your work.

The use of other technology in class is permitted. However, if your use of technology becomes disruptive to others, I reserve the right to restrict it.

- **Accommodation for Disabilities, Temporary Medical Conditions, and Medical Isolation:** If you qualify for accommodations because of a disability, please submit your accommodation letter from Disability Services to your faculty member in a timely manner so that your needs can be addressed. Disability Services determines accommodations based on documented disabilities in the academic environment. Information on requesting accommodations is located on the Disability Services website. Contact Disability Services at 303-492-8671 or DSinfo@colorado.edu for further assistance. If you have a temporary medical condition, see Temporary Medical Conditions on the Disability Services website.

If you have a temporary medical condition or required medical isolation for which you require accommodation, please contact me immediately so proper arrangements can be made.

- **Preferred Names and Pronouns:** CU Boulder recognizes that students’ legal information doesn’t always align with how they identify. Students may update their preferred names and pronouns via the student portal; those preferred names and pronouns are listed on instructors’ class rosters. In the absence of such updates, the name that appears on the class roster is the student’s legal name.
- **Honor Code:** All students enrolled in a University of Colorado Boulder course are responsible for knowing and adhering to the Honor Code. Violations of the Honor Code may include but are not limited to: plagiarism (including use of paper writing services or technology) [such

as essay bots]), cheating, fabrication, lying, bribery, threat, unauthorized access to academic materials, clicker fraud, submitting the same or similar work in more than one course without permission from all course instructors involved, and aiding academic dishonesty. Understanding the course's syllabus is a vital part in adhering to the Honor Code.

All incidents of academic misconduct will be reported to Student Conduct & Conflict Resolution: [StudentConduct@colorado.edu](mailto:StudentConduct@colorado.edu). Students found responsible for violating the Honor Code will be assigned resolution outcomes from the Student Conduct & Conflict Resolution as well as be subject to academic sanctions from the faculty member. Visit Honor Code for more information on the academic integrity policy.

- **Sexual Misconduct, Discrimination, Harassment and/or Related Retaliation:** CU Boulder is committed to fostering an inclusive and welcoming learning, working, and living environment. University policy prohibits protected-class discrimination and harassment, sexual misconduct (harassment, exploitation, and assault), intimate partner abuse (dating or domestic violence), stalking, and related retaliation by or against members of our community on- and off-campus. The Office of Institutional Equity and Compliance (OIEC) addresses these concerns, and individuals who have been subjected to misconduct can contact OIEC at 303-492-2127 or email [CUreport@colorado.edu](mailto:CUreport@colorado.edu). Information about university policies, reporting options, and support resources including confidential services can be found on the OIEC website.

Please know that faculty and graduate instructors must inform OIEC when they are made aware of incidents related to these policies regardless of when or where something occurred. This is to ensure that individuals impacted receive outreach from OIEC about resolution options and support resources. To learn more about reporting and support for a variety of concerns, visit the Don't Ignore It page.

- **Religious Holidays:** Campus policy requires faculty to provide reasonable accommodations for students who, because of religious obligations, have conflicts with scheduled exams, assignments or required attendance. Please communicate the need for a religious accommodation in a timely manner via email.

See the campus policy regarding religious observances for full details.

- **Mental Health and Wellness:** The University of Colorado Boulder is committed to the well-being of all students. If you are struggling with personal stressors, mental health or substance use concerns that are impacting academic or daily life, please contact Counseling and Psychiatric Services (CAPS) located in C4C or call (303) 492-2277, 24/7.

Free and unlimited telehealth is also available through Academic Live Care. The Academic Live Care site also provides information about additional wellness services on campus that are available to students.

- **For all other cases we will defer to CU's standard policies, specifically:** Students and faculty are responsible for maintaining an appropriate learning environment in all instructional settings, whether in person, remote, or online. Failure to adhere to such behavioral standards may be subject to discipline. Professional courtesy and sensitivity are especially important with respect to individuals and topics dealing with race, color, national origin, sex, pregnancy, age, disability, creed, religion, sexual orientation, gender identity, gender expression, veteran status, political affiliation, or political philosophy. For more information, see the classroom behavior policy, the Student Code of Conduct, and the Office of Institutional Equity and Compliance.