

ENVIRONMENTAL AND NATURAL RESOURCE ECONOMICS

ECO-228-01 | Winter 2026 | Union College

Course Basics

Meets:

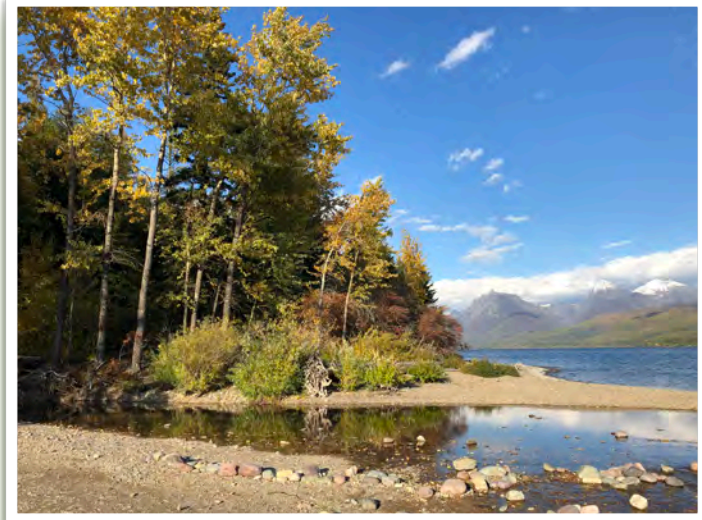
M/W/F 11:45am - 12:50pm
Lippman Hall 012

Instructor:

Dolores Garrido
Lippman Hall 205
(518) 388-6365
garridom@union.edu
www.dolores-garrido.com

Prerequisites: ECO-101

Textbook: No mandatory textbook is required. This course is based on class lectures and selected readings to be provided to students on Nexus.



Overview

Environmental and Natural Resource Economics explores how market activity, public policy, and the natural environment are interrelated, and how policies can be designed to achieve environmental goals efficiently. This course emphasizes the economic foundations of environmental decision-making, showing how incentives and institutions shape outcomes for people and nature.

You will learn to apply **economic tools and concepts** to analyze environmental challenges, evaluate policies, and understand trade-offs in managing natural resources. Along the way, you will strengthen **critical thinking** and practice

quantitative reasoning, interpreting graphs and using calculations to support evidence-based conclusions.

By the end of the course, you will be able to use **think like an economist to tackle environmental problems** and **communicate ideas clearly**, engaging thoughtfully with challenges through lectures, discussions, simulations, assignments, and your group project.

Logistics

Office Hours

I want you enjoy and succeed in this course. If you have questions about the course (e.g., material, assignments, assessments, etc.), please join my office hours. **I do love working with my students!**

Open: (in-person office hours) in Lippman Hall 205 (my office):

- T: 10:00am – 11:00am
- W: 2:00pm – 3:00pm
- TH: 2:30pm – 3:30pm

First come, first served. If you arrive and I'm with other student, please knock and wait, and I'll be with you as soon as possible.

By appointment: If the above drop-in hours do not work for you, you can [email](#) me and we'll find another time to meet. Note that if you request to meet with less than 24 hours, it may happen I cannot find a time to meet with you. So, please plan in advance.

Class Dynamic

We regularly meet in person at scheduled days, times and classroom. Each class combines my lectures with participative activities aimed to promote an engaging and motivating learning environment.

No requests to attend class via Zoom into class will be accommodated. If you cannot attend class due any officially documented reason communicated to me, your absence will not affect your attendance grade. In such cases, I'll do my best to provide you access to the material/content you missed. For all other absences, please refer to the attendance grading criteria. Ultimately, it is your responsibility to catch up with the class.

Plan of Study



Introduction to Environmental & Natural Resource Economics
Why should economists care about the environment at all?



Markets, Externalities and Market Failures
Why don't markets always protect the environment?



Renewable and Nonrenewable Resources
Why do some resources run out but others don't?



Valuing the Environment
What is the cost of a polar bear?



Pollution and Climate change
How much pollution is too much, and who should pay?



Group Project
How can economic thinking help solve a real environmental problem that you care about?

Communication

All class materials will be posted to Nexus. [Email](#) is the best way to reach me outside class time and office hours.

Grading Criteria

Attendance (4%)

Regular attendance is expected. It is very important for the success of the classroom as a whole and for your individual success. Class starts promptly. Plan to **arrive on time and do not leave the classroom until class is dismissed.** If you cannot attend class for College sanctioned activity, or any other officially documented reason, please inform me at least 24 hours in advance. Attendance will be graded as follows:

4%: miss 0-1 classes	1%: miss 4 classes
3%: miss 2 classes	0%: miss >4 classes
2%: miss 3 classes	

Participation (8%)

Class participation is essential for success in this course. It includes coming prepared by completing readings and drafting questions, actively engaging in class activities and discussions, and submitting pre-, in-, and post-class activities (see participation rubric at the end of this syllabus).

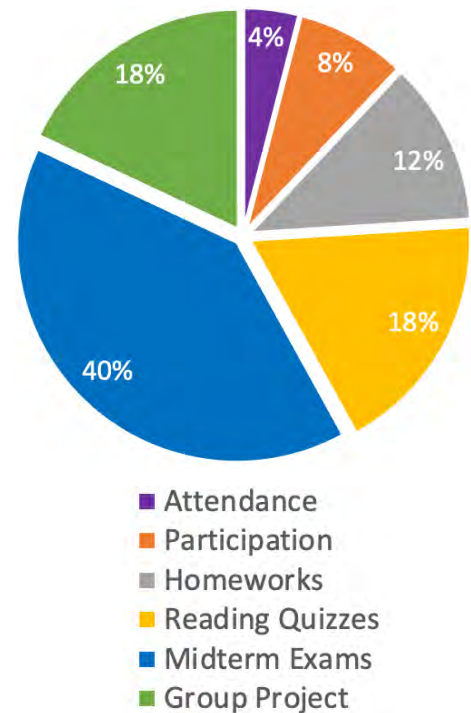
Homeworks (12%)

Homeworks (x5) are designed to help you grasp the basic class material. They also serve to test your abilities to learn on your own and help you become life-long learners.

- Homeworks will be posted on Nexus and are due at the announced date and time.
- They may include numerical and graphical analysis, interpretation and intuition, readings, listening to audios, watching videos, finding articles, and short written reflections or essays.
- Grades and feedback will be provided on Nexus shortly after submission.
- A late homework means you are getting behind the course content and the pace of the class. Therefore, no late submissions will be accepted.

GP: Group Project (18%)

In pairs or groups of up to three, you will analyze an environmental problem, evaluate existing policies, and propose an evidence-based solution using economic concepts and data. You will communicate your findings in both written and oral formats. Instructions for developing this project will be announced.



Reading Quizzes (18%)

From weeks 2–4 and 6–8, each Monday class will begin with a short (10-minute) **reading quiz (x6)** to ensure that you have completed the required readings for the week. Quizzes will be graded on a 0–1–2–3 scale.

Midterm Exams (40%)

Midterm exams (x2) are aimed to evaluate your understanding of the class content.

- Date, content, format and instructions will be announced at least one week in advance.

Grading Scale



93.00 and above	A	77.00 – 79.99	C+
90.00 – 92.99	A-	73.00 – 76.99	C
87.00 – 89.99	B+	70.00 – 72.99	C-
83.00 – 86.99	B	60.00 – 69.99	D
80.00 – 82.99	B-	Below 60.00	F

Note: Grades will NOT be curved or rounded

Professional Ethics and Honor Code

Union College recognizes the need to create an environment of mutual trust as part of its educational mission. Responsible participation in an academic community requires respect not only for oneself, but also for the thoughts and work of others, whether expressed in the present or in some distant time and place. Academic dishonesty is a rejection of the very purposes and ideals for which the College stands: personal integrity, independence of thought, critical understanding, and responsibility for one's own work.

According to Union College's Honor Code, **submitting work (e.g., homeworks, projects) that is produced by any source, whether it be another person or a technological entity (e.g., AI), and falsely claiming it as your own constitutes an act of academic dishonesty and could result in disciplinary action.**

Information about the Academic Honor Code is available at www.honorcode.union.edu. You are responsible for understanding the Honor Code and for meeting its requirements. **Ignorance is not an excuse for academic dishonesty.**

In a spirit of mutual respect and of dedication to your education, I affirm my commitment to the faculty's standards of professional ethics as laid out in the Faculty Manual.

Notes Midterm Exams

- The purpose of exams is to evaluate your understanding of the class content and the acquisition of learning skills.
- The coverage, format, and instructions will be communicated in class and posted on Nexus one week prior to the exam.
- **Answers must clearly show your work to get full credit.**
- **Exams are expected to be taken as scheduled.** Makeups will not be given. I only do make an exception in the case of an emergency and officially documented reason showing you were unable to take the test/exam at the scheduled time.

Course Schedule

The following content and activity schedule is *TENTATIVE* and subject to change depending upon the progress of the class and/or College mandates:

Week	Section	Topic	Assignments / Assessments Due
Week 1	Warming Up! Introduction	<ul style="list-style-type: none"> • “The Marshmallows Challenge” • Basic concepts 	Timeline of Modern Environmental History
Week 2	Markets, Externalities, and Market Failures	<ul style="list-style-type: none"> • Market efficiency and market failures • Correcting externalities • Policy implications 	Reading Quiz 1 “The True Cost”
Week 3	Renewable and Nonrenewable Resources	<ul style="list-style-type: none"> • Resource types and scarcity • Property rights and commons • Efficient resource use 	Reading Quiz 2 Homework 1
Week 4	Valuing the Environment	<ul style="list-style-type: none"> • Use values vs. non-use values • Revealed preference methods • Stated preference methods 	Reading Quiz 3 Homework 2
Week 5	Midterm Checkpoint GP Development	<ul style="list-style-type: none"> • GP: Overview, grading, and deliveries • Group work 	Homework 3 Midterm Exam 1
Week 6	Pollution and Climate Change	<ul style="list-style-type: none"> • Social costs of pollution • Pollution control policies • Emission trading and carbon pricing • Climate change economics: mitigation vs. adaptation • International agreements and policy coordination 	Reading Quiz 4 GP: Progress I
Week 7			Reading Quiz 5 Homework 4
Week 8			Reading Quiz 6 Homework 5 GP: Progress II
Week 9	End-of-Term Checkpoint GP Refinement	<ul style="list-style-type: none"> • GP: Tips on oral presentations • Group work 	Midterm Exam 2
Week 10	Course Evaluation GP Presentation	<ul style="list-style-type: none"> • GP: Oral presentations 	GP: Final deliveries

NOTE: Any modification in this course schedule will be announced in class and posted on Nexus.



A Note on Artificial Intelligence (AI)

According to Union College's [Honor Code](#), submitting work that is produced by any source, whether it be another person or a technological entity (e.g., AI), and falsely claiming it as your own constitutes an act of academic dishonesty and could result in disciplinary action.

Who hasn't heard about ChatGPT, Google Gemini and other Generative AI tools?

[The chatbots that took the Internet by storm with a click!]

While Generative AI tools can “miraculously” write a full-length essay with you just commanding it with a single-line prompt, when it comes to writing research, they have a important limitations:

- AI tools are very bad at producing formal literature surveys or bibliographies because they do not have fully access to academic journals and papers, just to abstracts. They are designed to combine different text rather than accurately summarize or explain a single source of text.
- AI tools are incapable of distinguishing between correct and incorrect information.
- AI tools don't provide accurate citations of sources when they write something. They produce references or quotations by combining pieces of several references or quotations, producing a “new” reference or quotation that doesn't actually exist. If you copy an answer from them word-for-word, you'll likely end up plagiarizing another source.
- AI tools may experience issues understanding the vocabulary that is very specific to narrow subject or context.
- AI tools may not be up to date.

As outlined by Union College's Honor Code, **ALL WORK in your course assignments and assessments must be YOUR OWN!** and any sources that contribute to your work must be properly acknowledged and cited. Failure to do so will be considered a violation of the honor code.

Think on Generative AI tools as friends who can help you think more clearly. That's it!

- Asking AI to answer homework questions will not help you truly learn the material.
- Think of AI as an extra resource, not as substitute for your own intellectual effort.

In the context of the research project, inappropriate use of generative AI tools could be classified as any of the following academic violations, as per Union's Honor Code:

- **Plagiarism** involves two elements: (1) taking something produced or created by someone else; (2) failing to give proper indication that you have done this.
- **Falsification of data or evidence** is altering or fabricating any information, data, or citation that may mislead those reading an assignment.

Course Policies

Class Environment



Let's create an atmosphere in which everyone feels comfortable with the class. The use of electronic items (such as cell phones, music devices, laptops), late arrival, leaving the class while meetings, making noise, conversations that interfere with class activity, and similar conducts can disrupt the class dynamic. Please refrain to do any of these practices.

Laptops will be permitted only when announcing.

Accommodation



It is the policy of Union College to make reasonable accommodations for qualified individuals with learning differences. If it is your case and you wish to request accommodations for this course, please visit the Accommodative Services Office (located in Shaffer Library - Room 222), call them at (518) 388-8785, or email their Director, Laura Galt at galtl@union.edu. Once you have received approved accommodations from them, please contact me as soon as possible to discuss your needs. Please be aware that no accommodations are to be provided without documentation from the Accommodative Services Office.

Diversity + Inclusion



I would like to create a learning environment for my students that supports a diversity of thoughts, perspectives, and experiences, and honors your identities (including race, gender, class, sexuality, religion, ability, etc.) To help accomplish this:

- If you have a name and/or set of pronouns that differ from those that appear in your official Union College records, please let me know!
- If you feel like your performance in the class is being impacted by your experiences outside of class, please don't hesitate to stop by my office and talk with me. I want to be a resource for you.
- I (like many people) am still in the process of learning about diverse perspectives and identities. If something is said in class (by anyone, including me!) that makes you feel uncomfortable, please talk to me about it.
- As a participant in class activities, you should also strive to honor the diversity of your classmates. Let's do not (pre)judge others!

Please express yourself!! A significant part of a college education is learning about the complexity of various issues. Therefore, it is important that we listen and respect one another but we do not have to agree. A richer discussion will occur when a variety of perspectives are presented in class for discussion.

I DO NOT OFFER EXTRA CREDIT. This is because if everyone knows about it, it's not really extra credit. It's just another assignment. If some people don't know about it (for instance, if a specific student asks for extra credit at the end of the term), then I'm treating my students differently, which I make every attempt to avoid because I don't find it fair.

Based-Gender Misconduct and Harassment



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 that this never happens again.

www.laurenmccluskey.org



It's on Us pledge is a personal commitment to help women and men safe from sexual assault. It is a promise not to be a bystander to the problem, but to be a part of the solution, by:

- Recognizing that non-consensual sex is sexual assault.
- Identifying situations in which sexual assault may occur.
- Intervening in situations where consent has not or cannot be give.
- Creating an environment in which sexual assault is unacceptable and survivors are supported.

www.ItsOnUs.org

If you are in immediate danger, call 911.

If you are experiencing sexual assault, domestic violence, and stalking, please report it to me and I will connect you to [resources](#), or call the Union College Sexual Assault Resource Hotline at (518) 388-6600 ext. 1 (an advocate is available 24/7 to confidentially explain all available resources and options) or Campus Safety (518) 388-6911.

Union College is committed to promoting a welcoming campus environment where sexual misconduct in all forms is strictly prohibited and recognized as unacceptable. If you (or someone you know) may have been sexually assaulted or subjected to sexual harassment, relationship violence or stalking, there are numerous avenues of support and options you can pursue. Seek help even if you are not sure if sexual misconduct has occurred; Union encourages you to report any form of sexual misconduct. Please visit the [Title IX site](#) for more detailed information regarding Union College's Sexual Misconduct Policy and Grievance Procedures.

Other confidential campus resources include Wicker Wellness Center Counseling Center (518) 388-6161 and Health Services (518) 388-6120.

World Uncertainties



I understand we live in a world of uncertainties (most recently the COVID-19 pandemic) that may require changes in this course plan. In such a case, I will be monitoring the situation closely. If I need to change the format of the course temporarily due to outbreaks of illness/other, I'll announce this via email and Nexus. We are expected to abide by all current Union College policies and guidance. **Let's all be responsible!**

ECO 228-01
Winter 2026

Class Participation (*evaluate your engagement*) Rubric (8% of total grade)

	Excellent 8%	Competent 6-7%	Poor – 3-4-5%	Very Poor – 0-1-2%
ENGAGEMENT	<i>I am fully engaged.</i>	<i>I'm occasionally engaged.</i>	<i>I'm not sure how to be engaged; I need some direction.</i>	<i>I am totally disengaged.</i>
PREPARATION (outside class)	<i>I read carefully and research background information on the class topic ahead of time.</i> <i>I consider the course's essential questions as I prepare.</i> Required pre-class participation activities <u>always</u> submitted (no missing submission)	<i>I do basic research to understand the material, but I do not go beyond the obvious.</i> <i>Sometimes I consider the course's essential questions as I prepare.</i> Required pre-class participation activities <u>frequently</u> submitted (1 missing submission)	<i>Sometimes I do the readings. I don't research to understand the material, nor do I go beyond the obvious.</i> Required pre-class participation activities <u>sometimes</u> submitted (2 missing submissions)	<i>I rarely read nor research before class.</i> Required pre-class participation activities <u>rarely</u> submitted (≥ 3 missing submissions)
PARTICIPATION (in class)	<i>I speak regularly and provide evidence to support my ideas.</i> Thoughtful participation in required activities and regular voluntary contributions beyond them.	<i>I speak occasionally. Sometimes I present general evidence to support my position.</i> Occasionally thoughtful participation in required activities and regular voluntary contributions beyond them.	<i>I sometimes speak. Mostly when I'm asked by the professor.</i> Brief participation only when prompted.	<i>I rarely or never do speak in class.</i> No active participation or no speaking in class at all.
SELF-REFLECTION (outside class)	<i>I always make a self-reflection after each class.</i> Required post-class participation activities <u>always</u> submitted.	<i>I frequently make a self-reflection after each class.</i> Required post-class participation activities <u>frequently</u> submitted (1 missing submission)	<i>I occasionally make a self-reflection after each class.</i> Required post-class participation activities <u>sometimes</u> submitted (2 missing submissions)	<i>I rarely or never make a self-reflection after each class.</i> Required post-class participation activities <u>rarely</u> submitted (≥ 3 missing submissions)

Bold – Criteria used to determine your participation grade.

Italics – Criteria you can use to self-evaluate your engagement in class.