

ECON-4210

Economics of Climate Change*

Prof. Casey Wichman
Georgia Institute of Technology

Fall 2026

1 Course Overview

1.1 Course description

This course will explore the economic causes and consequences of climate change—the “mother of all externalities”—and potential solutions. Misguided market forces, via unpriced and unregulated greenhouse gas (GHG) emissions, contribute to global warming. Because GHG emissions stem from economic decisions we make every day—from driving to work to powering our computers to eating a hamburger—the economic impact of policies aimed at reducing GHG emissions will be pervasive. In this course, we will use the tools of economics to understand the origins of climate change; to explore the effects of climate on different facets of the economy now and in the future; and to evaluate the effectiveness, costs, and benefits of policies designed to reduce climate change. Particular focus will be given to:

1. Understanding the methods used to measure and value damages from climate change
2. Analyzing the pros and cons of market-based policies designed to reduce GHG emissions
3. Investigating the role of adaptation and innovation as potential climate solutions
4. Evaluating the equity implications of climate impacts and climate policy

Students will acquire a broad understanding of the costs of unchecked climate change and an ability to evaluate current policy debates through an economic lens.

1.2 Learning Goals

The following is a list of competencies that I expect students to walk away from this course with:

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1. Understand the (basic) science behind human-induced climate change along with the uncertainties involved.
2. Demonstrate the ability to interpret the measurement and scope of climate change damages.
3. Understand the rationale for and analyze the implications of government intervention as a potential solution to market failures and global externalities.
4. Be comfortable applying social cost of carbon to estimate the impacts of a policy change, especially for the estimation of benefits of reducing climate pollution.
5. Understand the basics of risk and uncertainty, including tipping points, fat tails, and catastrophic risk, and be able to communicate the meaning of those terms.
6. Analyze policy recommendations using knowledge about instrument choice and recognition of the distributional impacts. Make recommendations where necessary to account for environmental justice concerns and for political feasibility.

2 Course Expectations

2.1 Attendance

Attendance is expected and will be necessary to succeed in the course. Participation in class discussions will be strongly encouraged. Ask questions. If you do not understand something in class, you are almost certainly not the only one. If you never volunteer an incorrect answer, you aren't taking enough risks.

2.2 Grading

There will be no special extra credit or extra work of any kind for the purpose of raising a grade during or after the course. This is to ensure that everybody has equal opportunities to earn their grade and that grades are based on work during the course.

Neither exam grades nor course grades will be curved.

The final grade is calculated as follows (assignments are explained in more detail below):

Attendance & Participation	20 pts
Problem sets ($n = 4$)	40 pts
Midterm ($n = 1$)	20 pts
Final exam ($n = 1$)	20 pts
Total*	100 pts

Final grades are determined using the standard scale:

Course grade:	A	90–100%
	B	80–89.99%
	C	70–79.99%
	D	60–69.99%
	F	0–59.99%

Final grades are not rounded up. Hence, 89.99 is a B not an A. If you are taking this class pass or fail, a grade of C or higher is a passing grade. If you earn a D or an F, you will be given a failing grade for the course.

2.3 Required course materials

All readings and course materials will be provided electronically via Canvas. There are no required purchases for this course.

2.4 Additional criteria for successful completion

Students must complete all graded components (problem sets, midterm, and final exam) to pass the course. Late assignments will receive a zero without a valid excuse. There is no extra credit. A grade of C or higher is required for a passing grade if taking the course pass/fail.

2.5 Academic integrity

Cheating is unacceptable. You are hereby reminded that you have pledged to uphold the honor code as follows:

Having read the Georgia Institute of Technology Academic Honor code, I understand and accept my responsibility as a member of the Georgia Tech community to uphold the Honor Code at all times. In addition, I understand my options for reporting honor violations as detailed in the code.

Should you be caught cheating in this class you will be prosecuted according to the honor code and policies and procedures established by the Honor Advisory Council. Should you have any questions about this do not hesitate to contact me.

2.6 Student-Faculty expectations agreement

At Georgia Tech, it is important to strive for an atmosphere of mutual respect, acknowledgment, and responsibility between faculty members and the student body. See <http://www.catalog.gatech.edu/rules/22/> for an articulation of some basic expectation that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.

2.7 Accommodations for students with disabilities

If you are a student with learning needs that require special accommodation, contact the Office of Disability Services at (404) 894-2563 or <http://disabilityservices.gatech.edu/>, as soon as possible, to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible to set up a time to discuss your learning needs.