

## Economics of Sustainability ECO 2310

Section: 4C36, Term: Spring 2022

Instructor: Michelle A. Phillips

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Time: Mondays and Wednesdays 7:25am - 9:20am

Location: MAT 107. *Both exams are in person at the main UF campus for all students. Students can access lectures in one of two ways: (1) In-person during our scheduled time/room or (2) In pre-recorded videos available on Canvas asynchronously. Each student can decide which option works best for them (and change it at any point) as long as they attend both in-person exams (no changes in registration are needed). The 2 options will have the same content. Homework, discussion boards, assignments, and quizzes are all submitted via Canvas<sup>1</sup>. If you choose to attend in person, it will be helpful to bring a laptop to class so you can work on the quizzes/discussion board assignments in class (you can also work on them later in the day as long as you complete them by 11:59pm on the due date). I would really appreciate it if you would wear approved face coverings at all times during class even if you are vaccinated.*

Office hours: Tuesdays 12:15pm-1pm on Zoom (link is posted on Canvas)

Tuesdays 7:40pm-8:10pm in CBD0220 (in person)

Thursdays 8:15pm-9pm on Zoom (link is posted on Canvas)

The office hours Zoom link and password are posted on Canvas. Note: I will hold extra office hours before each exam. These will be announced via email and on Canvas.

### Course description

The course will examine issues in sustainability from an economics perspective with a focus on climate change. A detailed list of topics that will be covered in class is listed in the course topics section of this syllabus. **This course deals primarily with the Economics of Climate Change.** Important: *This course does not count as an economics elective, as it is a 2000 level course but it does count for the Sustainability major and minor<sup>2</sup>.*

### Required Textbook

1. "The Climate Casino: Risk, Uncertainty, and Economics for a Warming World" by William Nordhaus. ISBN: 978-0300212648. Note: The paperback version is exactly the same as the hardcopy version and as the e-book version. Any version is fine.
2. Material available through Canvas

**Course Topics and Calendar are available on the last pages of this syllabus.** The easiest way to keep up with the course is to check the course Modules on every class day (or if you want to,

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<sup>1</sup> Note: Letters of recommendation are based on performance on exams, discussion boards, homework, and quizzes. The method of lecture delivery you choose will not affect my ability to write you a letter of recommendation. I do require 2 weeks' notice for writing letters of recommendation (excluding breaks and holidays).

<sup>2</sup> In the past, this course was taught as a 4000 level course and did count as an economics elective. However, this is no longer the case because the course is now a 2000 level course. This course does not count as an Economics elective but it does count for the Sustainability major requirements. You should not take this course if you've taken the Quest 2 Climate Change Economic impacts course.

before each class day. You are not able to work on Modules after their due dates). Each week corresponds to one course Module. Exams must be taken in person on campus.

### **Evaluation of Grades**

Your grade will be determined by your performance on the following:

Exam 1	32%
Exam 2	33%
Quizzes/Discussion board	25%
Research Paper	10%

### **Grading Policy**

The following scale will be used to determine your final grade:

<b>Grade</b>	<b>Grade Points</b>
93.4-100 A	4.00
90.0-93.3 A-	3.67
86.7-89.9 B+	3.33
83.4-86.6 B	3.00
80.0-83.3 B-	2.67
76.7-79.9 C+	2.33
73.4-76.6 C	2.00
70.0-73.3 C-	1.67
66.7-69.9 D+	1.33
63.4-66.6 D	1.00
60.0-63.3 D-	0.67
0.00-63.2 E	0.00

\*\* Important: There will be no rounding under any circumstances.

### **Class Attendance and Make Up Policy**

Excused absences are consistent with university policies in the undergraduate catalog<sup>3</sup> and require appropriate documentation. Documentation must be provided within a week of the absence. Excused absences will be accepted for exams.

From the catalog: “In general, acceptable reasons for absence from or failure to participate in class include illness, serious family emergencies, special curricular requirements (e.g., judging trips, field trips, professional conferences), military obligation, severe weather conditions, religious holidays, and participation in official university activities such as music performances, athletic competition or debate. Absences from class for court-imposed legal obligations (e.g., jury duty or subpoena) must be excused.” Note that I require proof for all exam absences.

Late online quizzes, papers, or discussions will not be accepted unless the student had an acceptable reason for the absence that lasted for the majority of the time the quiz, paper or discussion was open. A makeup midterm and makeup final exam will be provided for students

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<sup>3</sup> <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

who miss either exam due to extreme, documented circumstances. These can only be taken on the scheduled make up dates. I require exam absences to be verified by the DSO.

*Important:* Please communicate any issues you are experiencing with me as early as possible so I can work with you.

### **Disability Accommodations**

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/>. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester. I cannot adjust exam times on the day of the exam, so please provide me with your letter as soon as you get it (and ideally at least 4 days before the first exam).

### **Course Evaluation**

I would appreciate it if you filled out a teaching evaluation for this course. 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.ua.ufl.edu/public-results/>.

### **Class Demeanor**

Students are expected to arrive to class on time and behave in a manner that is respectful to the instructor and to fellow students. Please avoid the use of cell phones during class. Opinions held by other students should be respected in discussion, and conversations that do not contribute to the discussion should be held at minimum, if at all. Please be professional in e-mails to me and your classmates.

### **University Honesty Policy**

UF students are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students 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.” The Honor Code (<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

### **Counseling and Wellness Center and other resources**

Contact information for the Counseling and Wellness Center: <https://counseling.ufl.edu/> (352) 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies. Alachua Crisis Center: 352-264-6785. National Suicide Prevention Hotline: 1-800-273-8255.

## **Course Website**

We will be using Canvas. The address is: <http://elearning.ufl.edu/>. You log-in using your Gatorlink ID and password and the course should automatically appear as one of your e-learning options. If it does not, check to make sure you are properly registered for the course. If that is not the issue, contact the UF Computing Helpdesk at: <http://helpdesk.ufl.edu/>. Do not contact me about access issues. I cannot help you and the help you do need will only be delayed if you do. Most course materials and grades will be posted here.

## **Research Paper**

Students will complete a 8-12 page research paper on a sustainability issue of their choice. The papers can be done individually or in groups of up to 5 students. You can either choose your group, have me choose a group for you, or work by yourself. The issue studied must be approved by the instructor. A detailed outline (two page proposal) will be due at the date specified on the modules. The full paper and presentation deadlines are listed as well. Details about the format and citations will be made available on the course website. Both the proposal and paper must be submitted online. You are welcome to submit earlier than the deadline. Plagiarism will result in a grade of 0 (this includes self-plagiarism).

## **Important:**

1. You are expected to apply what you learn in class during exams. Exams will not be the same as the quizzes. You will be expected to be able to apply the framework learned in class to other contexts.
2. I provide curves to exams when necessary. For this reason I do not round grades up at the end of the term under any circumstances. I am aware that certain jobs, scholarships and even graduation require you to have a grade above a certain level. I will be more than happy to help you study and prepare for exams, but I will not, under any circumstances, raise your grade because you need a high grade for a job or graduation. Grades are earned, not negotiated nor “given” by the professor. Furthermore, one course is not to blame for you missing a grade cut off. Preparing just for the last exam is not sufficient. I will help you prepare for exams if you ask for help throughout the term. I cannot help you if you come to my office hours the last two weeks of class trying to learn an entire semester of lectures in a few weeks.
3. I will answer emails within 2 business days from the day in which I receive them.
4. With the exception of cases where the points have been added wrong, if you want me to regrade an exam question but don't have a specific complaint or question about it, I will regrade the entire exam, which could result in a higher or lower grade. Sometimes a mistake is made, and regrading is called for. The following system has been instituted to ensure that my time is spent re-reading exams where there has been a serious mistake and there is a legitimate concern and not spent re-reading correctly graded exams.
5. All exams are in person during the scheduled class time and location. You will get an automatic grade of 0 if you arrive more than 20 minutes late to the exam. Please refer to the make up policy if you have a valid reason to miss an exam and must take a make up.
6. If you are stressed out or experiencing difficulties, UF offers several services such as the Counseling and Wellness Center and GatorWell. Please use these resources, your health is important.
7. Expectations: You are responsible for all the material covered in class, and all the chapters covered from the textbook.

8. All quizzes for this class will be through Canvas.
9. If you miss the exam and then miss the make up exam: I do not offer make up exams for missed make up exams, but I can help you navigate medical withdrawals.
10. Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor. A "class lecture" is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session. Publication without permission of the instructor is prohibited. To "publish" means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.
11. Penalties for late work submission are listed on the Canvas website.
12. For Exams: Short essay answers are not the same as writing just a number or just a word. An essay is a short piece of writing on a particular subject. This means that for essay type questions, you must show your work explicitly. I have no way of knowing how much you know about something if you don't explain it to me. This also means that when you solve an exercise involving an equation, you need to write down the equation, why you are using the equation, and how you solved the equation. All exam questions require an explanation unless they explicitly say "no explanation necessary".

Some lecture slides, notes or exercises used in this course may be the property of the textbook publisher or other third parties. All other course material, including but not limited slides developed by the instructor, the syllabus, assignments, course notes, course recordings, and examinations or quizzes are property of the University or of the individual instructor who developed them. Students are free to use this material for study and learning. Republishing or redistributing this material, including uploading it to web sites or linking to it through services like iTunes or CourseHero, violates the rights of the copyright holder and is prohibited. There are civil and criminal penalties for copyright violation.

### **Covid-19 Policy**

I would really appreciate it if you would wear approved face coverings at all times during class and within buildings even if you are vaccinated.

If you are sick, please stay home and self-quarantine. Email me to let me know.

**We will cover the following topics in class using roughly this order:**

Negative externalities / Unregulated markets and externalities

Tipping points

Resistance to reducing GHG emissions

Relevant court cases

Free riding

Net Present Value

Why is climate change difficult to tackle from an economics perspective?

DICE model and other climate change models

Public goods

Evidence of human caused climate change.

Direct measurements (Hawaii data)

Indirect measurements (ice core data)

Uncertainty regarding projections?

Case study on pollution, health and the economy

What tipping points are we concerned about with climate change?

Managed and Unmanaged systems

Optimal Point of Emissions Reductions

Expected Impacts on: Farming, Health, Oceans, etc.

Adaptation

Using Economics to Adapt our Models

Challenges with Predictions about the Future

Sea Level Rise (thermal expansion, ice melting, concerns with SLR, what countries are most affected, etc)

Ocean Acidification

Hurricanes (hurricane management and costs)

Island Nations

Market failures, valuing ecosystems, contingent valuation

Adaptation, Mitigation, Geoengineering

Technologies for reducing CO<sub>2</sub>

CO<sub>2</sub> reduction methods, economic vs. engineering approach, country participation, economic efficiency, discounting and its effect on calculations.

Economic incentives to deal with CO<sub>2</sub> externalities (carbon pricing, price signals, etc)

Standards

Cap and Trade, Safety Valves, Allowance Banking

Acid Rain program

Energy Efficiency  
Enforcement, border tax adjustment, etc  
Economics of innovation

**Course Summary<sup>4</sup>:**

<b>Date</b>	<b>Details</b>
Mon Jan 10, 2022	Discussion: Introductions Quiz 1
Wed Jan 19, 2022	Discussion: Changes Quiz 2
Wed Jan 26, 2022	Quiz 3 Assignment: Proposal
Wed Feb 2, 2022	Discussion: Carbon intensity Quiz 4
Wed Feb 9, 2022	Quiz 5 Assignment: Research paper
Wed Feb 16, 2022	Discussion NASA evidence Quiz 6
Wed Feb 23, 2022	Quiz 7

<sup>4</sup> Any changes to due dates will be announced via e-mail and on the Modules.

<b>Date</b>	<b>Details</b>
	Discussion: Reflection
Wed Mar 2, 2022	Quiz 8
Mon Mar 21, 2022	Exam 1 (in person)
	Discussion Per Capita Emissions
Wed Mar 30, 2022	Quiz 11
	Optional: extra credit exam 1: VSL and climate negotiation
Wed Apr 6, 2022	Discussion: Island energy snapshots OR public climate communication survey
	Quiz 12
	Discussion: Bitcoin discussion
Wed Apr 13, 2022	Optional: extra credit exam 2: carbon pricing calculator
	Quiz 13
Wed Apr 20, 2022	Assignment Exam 2 (in person)

\*\*If I make any changes to the syllabus, I will announce them via email and will list each change here.