

Economics of Sustainability ECO 2310

Term: Spring 2024

Instructor: Michelle A. Phillips

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Time: Mondays and Wednesdays, 9:35am-11:30am. Location: MAT 103

Office hours: Mondays 11:20am-12:10pm in MAT 336, Wednesdays 11:20am-12:10pm in MAT 336, Wednesdays 2:55-3:45pm in MAT 336

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 minor¹.*

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 attend every lecture. Attendance is expected. If you miss class, it is your responsibility to contact a classmate to figure out what you missed. Office hours cannot be used as a substitute for in-class attendance.

Evaluation of Grades

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

| | |
|---|-----|
| Exam 1 | 32% |
| Exam 2 | 33% |
| Attendance/In-class assignments/Professionalism score | 20% |
| Research Paper | 15% |

Grading Policy

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

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

¹ 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.**

| Name: | Range: | |
|-------|----------|----------|
| A | 100 % | to 94.0% |
| A- | < 94.0 % | to 90.0% |
| B+ | < 90.0 % | to 87.0% |
| B | < 87.0 % | to 84.0% |
| B- | < 84.0 % | to 80.0% |
| C+ | < 80.0 % | to 77.0% |
| C | < 77.0 % | to 74.0% |
| C- | < 74.0 % | to 70.0% |
| D+ | < 70.0 % | to 67.0% |
| D | < 67.0 % | to 64.0% |
| D- | < 64.0 % | to 61.0% |
| F | < 61.0 % | to 0.0% |

Class Attendance and Make Up Policy

Excused absences are consistent with university policies in the undergraduate catalog² and require appropriate documentation. Documentation must be provided within a week of the absence for exams via email (do not email me if you miss a lecture where we do not have an exam). 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.

A makeup midterm and makeup final exam will be provided for students who miss either exam due to extreme, documented circumstances. ***These can only be taken on the scheduled make up date: 4/30/2024 @ 10:00 AM - 12:00 PM***

This course has an attendance grade.

If you miss attendance points:

1. All students get 4 freebies. You can miss up to 4 lectures, no questions asked. I will remove these from your attendance grade during the last week of class
2. If you miss more than 4 attendance points, you can take an assessment on April 30, 10am. Your score on the assessment will replace the attendance score. You will be required to provide evidence for all lectures missed in printed form when you show up to the make up attendance assessment. Do not email me the proof prior to the assessment. You are required to bring it with you, in printed out papers showing proof for each missed lecture on May 1st. Acceptable proof includes: doctor's notes, sports team travel letter, etc. Note that the proof is required for all absences (not just those beyond 4). If you have excessive absences, I can walk you through a medical withdrawal.

² <https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>

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 5 days before the first exam). It is your responsibility to schedule accommodations before the deadlines set up by the DRC.

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.aa.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. Class Demeanor is graded and part of your Attendance score.

Notes about Email:

Email is for answering short clarifying questions and is not a substitute for in-class questions or in-class attendance or office hours. I try to get to emails quickly but there are days when I teach all day and cannot do so. I will answer all emails within 2 business days of receiving them. This means that if you email me on a Friday at 5:30pm, I may not be able to get back to you until Tuesday at 4pm. Please plan accordingly and make sure you ask questions in class if you want an immediate response.

If you miss a lecture, only email me to let me know if you have missed an Exam. Do not email me to let me know you will miss a regular lecture.

University Honesty Policy

You are expected to abide by the University's rules for academic honesty as outlined in the UF Student Honor Code (<https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>). All suspicious evidence of cheating, plagiarism, making false statements, and any other violation of these rules will be reported to the Dean of Students Office. Additionally, I will advocate for the strictest of available sanctions (including dismissal from the University of Florida) for any student who is found responsible for violating these rules. It is important to note that cheating and plagiarism are not the only forms of academic dishonesty. "Making a false or misleading statement for the purpose of procuring an improper academic advantage" is also a violation of the UF Student Honor Code. This includes making false statements to your

instructor and/or presenting forged documents (e.g., doctors' notes). I verify all suspicious claims and documents, for example, by contacting a student's medical provider or by reviewing a student's UF systems connection data. While collaboration on homework is permitted, any work that you submit for evaluation and grading should be your own. Collaboration on exams is strictly prohibited.

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. If you are experiencing hunger, UF has a food pantry. <https://pantry.fieldandfork.ufl.edu/> 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. Important: Any assignment that requires you to upload a document will not be regraded if you upload the wrong version of your document or if you upload a blank file. It is your responsibility to download all of your uploads to make sure you've uploaded the correct document.

Research Paper

Students will complete a 8-12 page research paper on a sustainability issue of their choice. The papers are written in **groups of 5 students**. You can choose a group or I can assign you a group. 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. 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). Groups will present their work to the class during the last month of class. The work will be done in Google Docs during class. Use of Chat GPT or similar is not allowed. You are required to use APA format for citations and to cite properly.

Group work rules

You will work on Google Docs and add me to your document so I can check and see who did what on your research paper. I will check the log for every group. The last page of your research paper will have a section titled "Group work" where you will submit a list of all your team members and what each team member's contribution was, including your own. If a student's work on Google Docs is less than 1/5th of the paper's contribution and if their peer ratings are lower than 50%, their grade for the research paper will fall by 20 percentage points.

We will cover the following topics in class using roughly this order. Please note that if you have taken the Climate Change Economic Impacts (Quest 2) course, you will not benefit from taking this course since the topics and textbook are very similar. Also note that this

course has several topics in common with Environmental Economics, but it is fine to take this class in addition to Environmental Economics because they cover different material.

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 CO₂, CO₂ reduction methods, economic vs. engineering approach, country participation, economic efficiency, discounting and its effect on calculations., Economic incentives to deal with CO₂ 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

Please bring a laptop or similar to class. We will be working on the research paper in class as time permits.

What we will cover, [When it is due³], {What to read}

| Module | Date: Topic [Due] | Date: Topic [Due] {Read} |
|--------|---|--|
| 1 | L1: Syllabus, course information | L2: Introduction, Tipping points, Law, [Group selection] {Ch 1, Ch2} |
| 2 | L3: Carbon pricing [Changes] [Proposal work, add me to Google Docs] | L4: Climate Casino Ch 3, Decarbonization, NPV {Ch 3} |
| 3 | L5: Modeling, DICE, [Carbon intensity] | L6: Work on Proposal (in class) |
| 4 | L7: Ice on Fire | L8: Modeling cont'd, [Quiz] [Proposal due] {Ch 4, Ch 5} |
| 5 | L9: Future climate change, ice cores | L10: Climate Casino Ch 5 {Ch 6, Ch 7} |
| 6 | L11: From climate change to impacts | L12: Farming, IAM performance [Yale, bring laptop] {Ch 8, Ch 9, Ch 10} |
| 7 | L13: Unmanageable risks [Bitcoin] | L14: Fleeing climate change [Quiz] |
| 8 | L15: Exam 1 Review | L16: [Exam 1] |
| 9 | L17: Hurricanes, wildlife species, CV | L18: Adaptation, geoengineering slowing climate change. {Ch 11, Ch 12, Ch 13, Ch 14} |
| 10 | L19: Work on Research paper (bring laptop). Exam back. | L20: Fires {Ch 15, Ch 16}, Work on Research paper |
| 11 | L21: Climate negotiation [extra credit 1, bring laptop] [Research paper due] | L22: Cost of slowing down, balancing costs and benefits {Ch 17, Ch 18} |
| 12 | L23: Carbon prices, Cap and Trade [Group presentation pptx due] | L24: Group presentations 1 {Ch 19, Ch 20} |
| 13 | L25: Group presentations 2 [presentation quiz], Carbon prices | L26: Carbon prices, Paris agreement, Climate club, Counterpoint to Nordhaus |
| 14 | L27: [Evals], [Extra credit 2, bring laptop], Saving the Amazon | L28: Exam 2 Review |
| 14 | L29: [Exam 2] | |

³ Most discussion posts/quizzes are due in class during our lecture. For specific due dates see Course Summary.

Course Summary

| Date | Details |
|-------------------|--|
| Wed Jan 10, 2024 | Assignment Group work |
| Wed Jan 17, 2024 | Discussion Topic Changes |
| Wed Jan 24, 2024 | Discussion Topic Carbon intensity |
| Mon Feb 5, 2024 | Assignment Proposal Quiz Quiz Ice on Fire |
| Mon Feb 19, 2024 | Discussion Topic Yale public climate communication survey |
| Wed Feb 21, 2024 | Discussion Topic Bitcoin discussion |
| Mon Feb 26, 2024 | Quiz Fleeing climate change quiz |
| Mon Mar 4, 2024 | EXAM 1 |
| Wed Mar 27, 2024 | Assignment extra credit exam 1: climate negotiation Assignment Research paper |
| Apr 8 or 10, 2024 | Assignment Research Paper presentation (could be either date) |
| Wed Apr 10, 2024 | Quiz Quiz presentations |
| Wed Apr 17, 2024 | Assignment Extra credit 2: carbon pricing |
| Wed Apr 24, 2024 | EXAM 2 |