

BSC 2862 Syllabus

Global Change Ecology and Sustainability – 3 credits for letter grade

Periods and Location: M, W, F period 8 (3:00 – 3:50 pm); Bartram 0211

Academic Term: fall 2025

Instructor

Stephen Mulkey, PhD

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Office: 621 Carr Hall

Please contact through the Canvas website.

Office Hours: M, W, F - 2 pm 621 Carr and by appointment

Phone: 208.596.3234 (Please use respectfully and protect my privacy)

Course Website

<http://elearning.ufl.edu/> Class material, including the syllabus, weekly comprehension quizzes, exam results, lecture slides, and other information related to the course, will be posted on the course e-Learning website. **The course lectures will not be recorded so long as the course meets face-to-face in the classroom.** A PDF of each lecture is provided with each module. You are responsible for all announcements made in the lecture and those posted on the course website. For help with e-Learning, call the UF Computing Help Desk at 352.392.4357, or visit the e-Learning support website: <https://lss.at.ufl.edu/help.shtml>

Course Description and Objectives

This course enables students to critically examine and evaluate the principles of the scientific method, model construction, and apply the scientific method to explain natural experiences and phenomena. It also examines key issues in sustainability and global environmental change from an ecological perspective. Major themes include impacts of climate change on terrestrial ecological communities; feedbacks between the terrestrial biosphere and the atmosphere; and implications of climate change for the sustainability of natural and managed ecosystems.

State-approved [Gen Ed Learning Outcomes](#) are defined for Content, Critical Thinking, and Communication.

BSC2862 Global Change Ecology and Sustainability meets [Gen Ed track B](#) (Biological and Physical Sciences) undergraduate requirements. **A grade of C or higher is required to receive Gen Ed B credit.**

Statement required by state law: Instructional materials for this course consist of only those materials specifically reviewed, selected, and assigned by the instructor. The instructor is only responsible for these instructional materials.

Learning Outcomes for BSC2862

State-approved learning outcomes require that students learn to:

- Understand the dependence of human welfare on ecosystem services provided by natural and managed ecosystems.
- Assess the long-term sustainability of human activities concerning the continued supply of ecosystem services.
- Critically evaluate the effectiveness and sustainability of proposed solutions to environmental problems.
- Gain an appreciation for the complex economic and political factors that may form obstacles to implementing sustainable, science-based practices.
- Assess the credibility of different sources of scientific information.
- Apply logical reasoning and critical thinking to interpret and synthesize scientific data. Formulate empirically testable hypotheses in the context of ecology and sustainability.
- Effectively communicate scientific information to a diverse audience.

Course Communications

Please use the Canvas Inbox Tool. Inquiries received Mondays through Fridays will usually receive a reply within 24 hours of receipt; however, if you have not received a reply within 48 hours, please resend your inquiry.

Optional Suggested References - not required

There are no textbooks required for this course. The lectures and assigned readings are the primary sources of content. *The Climate Book (2023, Thunberg, ed.)* and *Climate Change (2021, Dessler)* are suggested, but optional. There will be no assigned readings, but students are encouraged to use this book extensively as we progress through the course.

The Climate Book 2023, Thunberg (ed.) Penguin as e-book or audio book.

Introduction to Climate Change 2021, 3rd Edition, Cambridge University Press as paperback or used.

There will be no assigned readings from these texts. Thunberg's *The Climate Book* has short sections by world-renowned experts. It should be helpful as a starting point for your essay exams and projects.

Required Readings & Media

You are responsible for reviewing the assigned readings and media. Not all reading and media materials will be covered in the course lectures.

Additional readings and media are listed for each Module. Readings and media are typically limited to 5 items. Many of these links are short videos. For papers in the literature, you should read the abstract and enough of the paper to be generally familiar with the research and results. These papers will be reviewed and explained in the lectures.

Module 1 – 21 August Reality and Responsibility

- [Kevin Anderson on where we are headed.](#) [video 16:25]
- [Johan Rockström on where we stand.](#) [video 18:35]
- [Michael Mann on the current state of the climate.](#) [video 4:01]
- [What is the Paris Agreement?.](#) [4:28]
- [The relationship between rising global temperatures and violence.](#) [video 4:18]

Module 2 – 3 September Biomes and Biogeography

- [Climate-limited vegetation change in the coterminous US.](#) Parra & Greenberg 2024
- [Arctic beavers advance north and accelerate permafrost thaw.](#) van Deelen, G. 2024
- [Earth at risk.](#) Fletcher et al. 2025

Module 3 – 8 September Evolution, Ecology, and Demography

- [Cat Bohannon - How the female body drove 200 million years of human evolution.](#) [video 6:49]
- [Convergent evolution and biology of the marsupial mole.](#) Frankenberg et al. 2025.
- [Plastic ingestion as an evolutionary trap.](#) Santos et al. 2021.
- [Missing Americans: Early death in the United States 1933-2021](#) Bor et al. 2023.
- [RuBisCo](#) [video 8:47]

Module 4 – 15 September Biodiversity and Extinction

- [Are we living in the sixth great extinction?.](#) [video 9:11]
- [One-quarter of freshwater fauna is threatened with extinction.](#) Sayer et al. 2025.
- [Birds are dying in the most untouched, pristine parts of the Amazon.](#) [*The Guardian* 30 January 2025]
- [Effect of temperature and precipitation on bird survival in tropical forest.](#) Wolfe et al. 2025.
- [The last time the Earth warmed - PBS.](#) [video 10:53]
- Thomas Crowther - [Global movement to restore biodiversity.](#) [video 11:26]

Module 5 – 22 September Communities and Ecosystems

- [Overview of climate change effects on communities and natural resources in the US.](#) Weiskopf et al. 2020.
- [Amazonia against the clock: A regional assessment on where and how to protect 80% by 2025.](#) Amazonia 2025
- [National responsibility for ecological breakdown](#) - Hickel et al. 2022.
- [Importance of the top predator in the trophic cascade: The sea otter.](#) Hughes et al. 2024
- [National Climate Assessment 5: Ecosystems.](#) NCA5

Module 6 – 29 September **Climate Change Causes and Processes**

- [Mulkey - Review of AR6.](#) [video 33:55]
- [Ocean heat content.](#) Cheng et al. 2025
- [World Scientists' Warning - 2023 State of the Climate Report.](#) Ripple et al. 2023
- [A 485-million-year history of Earth's surface temperature.](#) Judd et al. 2024
- [Earth's temperature record simplified by Climate Brink: Climate Skeptics Favorite Graph.](#)

Module 7 – 6 October **Climate Change Impacts**

- [The Earth is now beyond six of nine planetary boundaries.](#) Richardson et al. 2023
- [Global temperature report for 2024.](#) Rohde 2025
- [Approaching a climate tipping point in the AMOC.](#) [video 10:39]
- [Disappearing climate science.](#) *The Lancet Planetary Health* 2025
- [Andrea Dutton on sea level rise](#) [1:56]

Module 8 – 13 October **Climate Models, Emissions, and The Carbon Cycle**

- [UN Emissions Gap Report 2024.](#) [report includes explanatory video]
- [CO₂ is plant food.](#) [video 0:54]
- [Climate solutions that need immediate funding.](#) [10:26]
- [Implications of the yet to be realized emissions pledges.](#) [video 1:00] and [Failure of companies to meet pledges.](#) [podcast 52:32]
- Must see [review of planetary boundaries by Rockström.](#) 2024 [video 1:31:44]

Module 9 – 20 October **Agriculture and Food Security**

- [UN State of food and agriculture 2023.](#) [executive summary]
- [The EAT-Lancet Commission on Food, Planet, Health.](#) [browse website]
- [Regenerative agriculture.](#) [video 8:30]
- [Climate change is disrupting the global food supply.](#) [video 6:22]
- [How climate change is making food less nutritious.](#) [video 11:00]

Module 10 – 27 October **Human Health and Environmental Change**

- [The Lancet Countdown 2024.](#) [read key message statements]
- [Pandemics are based in human and biosphere ecology](#) Kenyon 2020.
- [Public health co-benefits of net-zero emissions.](#) - see Key Messages, Figure 1, and Figure 4.
- [How empowering women and girls can help stop global warming | Katharine Wilkinson.](#) [video 13:48]
- [Climate change adverse effects on youth mental health and wellbeing.](#) – Lewandowski et al. 2024 [see Summary & Figure 1]

Module 11 – 3 November **Energy Systems**

- [World Energy Outlook \(IEA\) 2025.](#) [read Overview and Key Findings] [Video for WEO 2025.](#) [45:38]
- [World Energy Transitions Outlook 2024.](#) IRENA - International Renewable Energy Agency [read Executive Summary]
- [Blue hydrogen - a fossil fuel scam.](#) [key findings]
- [21 misleading myths about electric vehicles.](#) [explore the list and links]
- [UNEP Adaptation Gap Report 2024.](#) [read summary and watch video]

Module 12 – 10 November **Climate Interventions**

- [A fig leaf for the oil industry.](#) - CCS with EOR [podcast 38 min]
- [CDR will be essentially useless unless we kill fossil emissions now.](#) Ho 2023
- [The cost of DAC and CCS vs. renewable energy for 149 countries.](#) Jacobson et al. 2025 [read abstract and note figures]
- [Geoengineering could be crucial to address climate change.](#) White 2025
- [Failure of carbon offsets.](#) [podcast 1:07:00]

Module 13 – 11-17 November **Economics and Climate Change**

- [Degrowth vs. Green Growth.](#) [video 1:33:04]
- Kate Raworth TED: [A healthy economy should be designed to thrive not grow.](#) [video 15:44]
- Investigative reporting uncovers [\\$1T raised for fossil fuel giants.](#) [audio 6:12]
- [Timothée Parrique.](#) - [Slow down or perish.](#) [video 1:03:32]

UF VPN

VPN is essential for your success in this course if you access posted materials from off campus. You should install and learn how to use [UF VPN](#) on your personal computer. This will allow you access to all UF Library holdings directly from the journal publisher when you are not on campus. This is an essential tool for scholarship and will be necessary when you take the exams.

(The UF Library proxy service is confusing and often fails to directly link to a publication. It is time consuming, and I don't recommend it.)

Expectations

This course has high standards for student scholarship and critical thinking. Each student is solely responsible for reading and following the instructions, guidelines, and schedules in this syllabus, on the course webpage, or announced in class. Independent research by students and collaboration with a group will be significant portion of assessment. Not having read or followed the instructions will not constitute an excuse for missing an assignment, exam, or other assessment. Please set your preferences in Canvas so that you receive timely notifications of course announcements and other information. Check Announcements in Canvas regularly as e-mail notifications from Canvas do not always go through.

You should not turn in assignments from an Android or iOS device such as a phone or tablet. Canvas does not support an app for these devices. UF IT Help does not support any app for these devices. The reason for this restriction is that Canvas does not reliably retain documents from these devices. If your assignment is lost and you turned it in from a mobile platform, I will not try to retrieve it. Note that the time stamp on the submission indicates the platform used.

I am happy to answer your questions, but I would appreciate it if you would use this syllabus first.

When you have a question, check the following sources first to see if it is already answered, before e-mailing me:

- Course Syllabus
- e-Learning announcements (this is the primary means that I have to communicate with you in a timely manner)
- e-Learning Discussion General Posts

If you still cannot find the answer to your questions:

- If it is a question that others might find useful to know the answer to as well, post it in the e-Learning Discussion section.
- If it is a question specific to you (e.g., account or grade specific), e-mail Stephen. Barring unusual circumstances, expect a reply within 24 hours (Monday through Friday). E-mails and e-Learning Discussion posts are checked at least once per day, but sometimes not more than that.

Do not e-mail Ching-Yuan with a request to miss or delay an assignment. All such requests must go through Stephen and will routinely be denied (see exceptions below).

A Promise to You

If you regularly attend lectures, turn in the assignments on time, and interact with me and your classmates, you will do well in this course. The amount of material can be daunting. It is my job to make this material accessible and help you work your way through the modules. Thus, attendance at lectures is critical for your success. Please alert me if you need help. I may from time to time record a lecture on my phone as a legal record. If I do this, you will be informed. As per State of Florida law, you may record lectures on your personal recording device for personal use only.

Assignments/Quizzes/Exams

You are required to complete online quizzes and assignments. Please get in touch with Stephen if at any time you have questions about these assignments. The schedule for assignments is listed below and will be posted on e-Learning with the due dates for each assignment. Most assignments are due by 11:59 P.M. (ET) on the date specified in the course schedule, usually a Sunday night, but not always. All assignments must be completed by the stated due date and time for full credit. Extensions may not be given because of technical or personal issues. Many assignments will also have a set time limit, so make sure you have time to devote to that assignment before you begin. You are expected to work by yourself on the assignments and cheating will not be tolerated.

Deadline Extension Policy

A health or family emergency are grounds for an extension. Extensions may also be granted for other reasons and for planned required absences (e.g., medical procedures). Please understand that it is not my professional role to determine if your personal issues warrant an extension. If I grant an extension, please respond and provide a date when a specific assignment will be turned in.

Make-up Policy

Requirements for class attendance, make-up exams, assignments, and other work in this course are consistent with university policies that can be found in the [Undergraduate Catalog Academic Regulations](#).

Required Equipment

You must have a personal computer or laptop. Phones and iPads are not supported. This class depends on reliable internet connectivity. The download speed should be at least 50 mbs.

There are no Materials and Supplies Fees for this course.

Course Schedule fall 2025

Assignments are due at midnight on the indicated dates.

Module and assignment due dates	Topic/Activity and Description	Exam / Assignment
Module 1 classes begin 21 August	Introductory lecture: Reality and Responsibility in the Anthropocene: An overview of the issues	Required: Fill out your student profile and introduce yourself to the class on the Discussion board. Exam 1 Possible Questions Posted
Module 2 3 September Assignments due 7 September	Biomes and biogeography – a review of global patterns living systems	Quiz 1 Assignment: Read the description of group project assignment Discussion 1
Module 3 8 September Assignments due 14 September	Evolution, ecology, and demography Review of the major features of evolutionary ecology	Quiz 2 Discussion 2
Module 4 15 September Assignments due 21 September	Biodiversity & extinction Review of drivers of patterns of biodiversity and causes of extinction	Group project subtopics due Discussion 3
Module 5 22 September Assignments due 28 September	Communities & ecosystems Review of species assemblages and interactions in divisions of Communities and Ecosystems	Quiz 3 Discussion 4
Module 6 29 September Assignments due 5 October	Climate change 1: Causes and processes Review of the drivers of climate change in the past and present	Exam 1 available 30 September -3 October Quiz 4 Exam 2 Questions Posted

Module 7 6 October Assignments due 12 October	Climate change 2: Impacts Review of the primary impacts of past climate change and present accelerated climate change	Draft of annotated bibliography Quiz 5
Module 8 13 October Assignments due 20 October	Models, Emissions, Water, Carbon Cycle Descriptions of how emissions are measured and modeled. Review of the primary storage and fluxes of carbon.	Discussion 5
Module 9 20 October Assignments due 26 October	Agriculture & food security Introduction to the relationship between agriculture and global change and food security in the 21 st century	Quiz 6 Discussion 6
Module 10 27 October Assignments due 2 November	Environmental change and human health Overview of how environmental change has affected human health	Exam 2 available 28 – 30 October Exam 3 Questions Posted
Module 11 3 November Assignments due 9 November	Energy systems and climate mitigation Review of primary forms of alternative and renewable energy	Final Annotated Bibliography Quiz 7 Discussion 7
Module 12 10 November Assignments due 16 November	Natural climate interventions & geoengineering Description of natural and human-engineered means of carbon removal from the environment Review of group presentation dates	Quiz 8 Discussion 8
Module 13 17 November Assignments due 23 November	Economics & ethics Introduction to the relationship of macroeconomics to human wellbeing and disruption of living systems	Quiz 9 Discussion 9

Bonus Lecture (if time)	Climate Justice & Activism Discussion of climate movements and their participants	
<i>Groups 1,2 – 1 December</i> <i>Groups 3,4 – 3 December</i>		Presentations Peer reviews due by 4 December Exam 3 available 6 -10 December
10 December		Final project reports due

Attendance

Attendance is expected and essential for success in this course. If you are absent from class when an activity requiring your participation occurs, you will receive a zero grade for the activity unless the absence is *excused*. An absence is considered *excused* if there is an acceptable reason according to [UF policy](#). Documentation of a religious holiday is not required. It is your responsibility to notify me of an absence (via email or in writing) and to provide documentation if I need it. Otherwise, the missed assignment will be considered *unexcused*. If you miss class, visit the e-Learning site for any lecture notes and course announcements.

Use of Generative AI

Generative AI has certain limitations that will not allow you to pass a long-format essay exam in this course. These limitations will also cause your effort to fail when applied to Discussion assignments. For instance, recent research in the literature is often not accurately represented in AI-generated answers. AI is unlikely to give appropriate responses that reflect your personal experience. AI is also subject to hallucination. The following guidelines will help you decide how and when to use AI.

If I find that you have used generative AI on any key assignment in the course, you will get no points for that assignment. It will be treated as plagiarism. If you violate this policy more than once, I will report you as violating the UF Honor Code.

For exams, I will use one of several ChatGPT detection programs if I suspect that you have misused Generative AI. I suggest that you meet with me and defend your submission before I assign a grade.

To justify your writing process, I recommend saving a copy of the Track Changes used during your exam editing.

The use of AI tools (e.g., ChatGPT, Dall-e, Grammarly, etc.) is permitted for:

- Brainstorming and refining your ideas
- Fine-tuning your research questions
- Drafting an outline to organize content
- Checking grammar and style.

When you use AI to develop research for your essay or discussion assignment, you must cite it. Here are some suggestions for how to cite AI:

1. Acknowledge AI assistance clearly

At the end of your essay or in a footnote, include a brief disclosure. For example:
***“AI Disclosure:** I used ChatGPT (OpenAI, 2025) to help brainstorm ideas and rephrase sentences in this essay.”*

Format your citation like any other outside source. Examples in different styles:

- **APA:**
OpenAI. (2025). *ChatGPT* (July 17 version) [Large language model].
<https://chat.openai.com/>
- **MLA:**
OpenAI. *ChatGPT*, July 17 version, 2025, <https://chat.openai.com/>.
- **Chicago:**
OpenAI. *ChatGPT*. July 17, 2025. <https://chat.openai.com/>.

2. Specify what the AI was used for

Be transparent: brainstorming? Grammar help? Outlining?

The use of generative AI is NOT permitted for:

- Impersonating you on Discussion boards
- Impersonating you on Long-format Essay Exams
- Impersonating you on the Final Report
- Writing sentences, paragraphs, or papers to complete assignments

Exams

There will be three long-format essay timed exams during the semester. The exams are designed to ensure that you have developed an understanding based on systems rather than rote learning. There is no final exam. Exams will be administered during a specified window of opportunity via Canvas. In a long-format essay exam, you should expect to write **MORE THAN THE STANDARD FOUR OR FIVE SHORT PARAGRAPHS** as your answer to each essay question. You will receive a list of **8** possible long-format essay questions at least 10 days in advance of the

exam date. A subset of **4** questions will be drawn from this list, and these will appear on the exam.

The long-format essay exams are open book, open internet, and open lecture notes. You may not collaborate in answering these questions. A successful strategy for these exams is to answer all possible questions in long-essay format and then cut and paste your answer into the exam space during the designated time for the exam. Finish your exam by editing your essays for clarity and content.

Cite references in the text of your answer as author and date only. At the end of your essay, provide a section on references cited. This should include any application of AI that you find necessary to cite.

Your exams will be submitted to Turnitin for plagiarism detection. This tool also detects if much of the text and structure of the narrative has been created by generative AI (I have submitted my questions to this AI, and the answers are in the Turnitin database).

Students with documented need for extra time and resources will be accommodated as determined by the DRC.

No additional time will be given to complete an exam if you start the exam late. If necessary to reflect class performance, exams will be curved and normalized to a scale of 0 to 100 after the distribution of scores has been assembled. Review of your performance on an exam with Stephen during office hours two weeks after the date of the exam. Exams will not be available for review after the semester has ended.

No make-up exams will be given without prior permission or documentation of illness. If appropriate, students may be required to take the makeup exam *before* the scheduled in-class exam.

In case of illness during the time that the exam is available, a letter from the student's primary care provider or notification by UF Student Health is required. This letter must state that the student was unable to complete the exam during the scheduled dates (i.e., a letter stating only that the student was seen in a clinic is not sufficient).

Long-format essay exams will require several days for me to grade. Please be patient while I carefully read and evaluate your answers. A grading rubric is provided below for these exams, and I advise you to read and understand the criteria for grading carefully.

Requirements for essays:

1. **PLEASE** Avoid transitional phrases that take up space and word count. These include, *in conclusion, overall, the aforementioned, as stated previously, it is my opinion, in addition, firstly, furthermore, moreover, additionally*, and many others. You find these phrases in high school essays, and they do not belong in university-level work. Before you use a transitional phrase or

word, ask yourself, “Is this something the reader needs?” An essay that uses many of these phrases will receive much lower scores.

2. **Break your essay into parts** using several paragraphs to develop your answer. If you typically write as a stream-of-thought in one long paragraph, *you will probably fail the exam*.

3. **Development** (in rubric) of your essay should reflect expanded descriptions of each paragraph. You must show that you have more than a superficial understanding of the topic.

4. **Synthesis** (in rubric) should reflect your thinking on the context and importance of the topic of the essay. This is where you mention your personal experience or the broader import of the topic.

5. Do not simply answer the numbered parts of the question. Write the essay from a more holistic perspective and answer the numbered parts within this context. Make the parts of your essay hang together as part of an overarching narrative.

6. **Most important: Use declarative, active voice, fact-based, descriptive sentences.**

Rubric for exams

The following rubric will evaluate each essay.

Essay Exam Rubric



Criteria	Ratings				Pts
Essay 1 Content	10 to >8 pts Excellent Answer is appropriate to the question. Content is factually correct. All parts of the question answered.	8 to >4 pts Good Answer is appropriate to the question. Content may have one or two factual errors.	4 to >2 pts Approaching Content relates peripherally to the question, or contains. Significant factual errors.	2 to >0 pts Beginning Content unrelated to question.	10 pts
Essay 1 Organization	5 to >4 pts Excellent Clear sense of order. Begins with a thesis or topic sentence. Supporting points are presented in a logical progression.	4 to >2 pts Good May lack a thesis sentence, but points are presented in a logical progression.	2 to >1 pts Approaching Logic of argument is minimally perceivable. Points presented in a seemingly random fashion, but all support argument.	1 to >0 pts Beginning Lacks clear organizational plan. Reader is confused.	5 pts
Essay 1 Development	5 to >4 pts Excellent Develops each point with specific details. Answers question completely.	4 to >2 pts Good Each point supported with some details and evidence. All important points included.	2 to >1 pts Approaching Sparse details or evidence. Question only partially answered.	1 to >0 pts Beginning Statements are unsupported by any detail or explanation. Repetitious, incoherent, illogical development.	5 pts
Essay 1 Synthesis	5 to >4 pts Excellent Identifies and explains linkages among major concepts presented in essay	4 to >2 pts Good Identifies and explains only some of the linkages among concepts presented in the essay	2 to >1 pts Approaching Does not identify or explain any linkages among concepts presented in the essay.	1 to >0 pts Beginning Synthesis not possible because answer is factually incorrect or otherwise incoherent or illogical	5 pts

Comprehension Quizzes

There will be nine **online quizzes** via Canvas to assess comprehension during the semester. You will be allowed two attempts for each question, and the highest score received will be recorded for that quiz. All quizzes must be completed by the stated date and time. Extensions will not be given because of technical or personal issues that occur within 24 hours of the date of the quiz (see Extensions Policy above). Quizzes will have a set time limit. Students are expected to work independently on the quizzes. The lowest quiz score will be dropped.

Term Group Project

Canvas will assign each of you to a group. Each group will pick from a limited number of themes for development as a research project. Each member of the group will select an aspect or topic that is part of the theme for the construction of an annotated bibliography and a peer-reviewed presentation. Each of you will write a final report with citations on the entire group project summarizing the primary results in your own words.

- Part 1: Submission of individual topic description (1-2 paragraphs) of each topic chosen by each group member. Submitted by each group member. (graded as complete/incomplete)
- Part 2: An annotated bibliography written by each on one of the assigned individual topics within a theme and submitted by each group member.
- Part 3: Group presentation by designated member(s) of the group
- Part 4: Peer review of two presentations based on the criteria provided in the instructions.
- Part 5: Submit the final project report written by each in their own words, drawing on the collective literature reviewed by the group and submitted by each group member.

Online Discussions

For the selected modules, I will pose 8 Discussion topics derived from the readings and lectures.

Discussions are 15% of your grade and thus should exhibit scholarship and critical thinking. Your response to comments by your peers must not be trivial and should reflect a thoughtful reading of their comments.

Attendance at outside speaker events or video lectures

UF has many speaker events during the semester that you may attend remotely for credit. These are worth 5 points each for a total of 20 points. For each event that you attend, please write a paragraph or two describing your observations and what you have learned. There is no rubric for this short essay. You will be graded on the content of your response, and it should show that you acquired a new understanding emphasized by the speaker.

You may attend in person, via Zoom, or via recording any seminar that is relevant to global change ecology and sustainability. You should look for the advertised speakers in various departments that host researchers in these areas. Examples: Biology, Forestry, Political Science, Geography, the School of Natural Resources and Environment, Soils, and others that you deem relevant.

Please pay attention to Announcements, where I will post possible outside speaker options.

Grades

<i>Assessment</i>	<i>Points</i>	<i>Percentage weight of Final Grade</i>
In-class Exams (3 @ 100 pts each)	300	25
Online quizzes (8 @ 20 pts each drop lowest of 9)	160	8
Attendance at outside speaker events or video lectures (4 @ 5 pts each)	20	2
Group Project Initial Assignments (2 @ 5 pts each)	10	2
Online Discussions (9 @ 10 pts each)	90	15
Presentation on Term Project	100	12
Annotated Bibliography on Term Project	120	12
Project Report Peer Review (2 @ 10 pts each)	20	2
Final Project Report	100	20
totals	920	100

Grading Scheme

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%

E < 61.0 % to 0.0%

Note that the current UF policy for assigning grade points is available at the following undergraduate catalog web page: <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Student Privacy

There are federal laws protecting your privacy about grades earned in courses and on individual assignments. For more information, please see: (<https://catalog.ufl.edu/UGRD/academic-regulations/ferpa-confidentiality-student-records/>)

Academic Resources for Getting Help

E-learning technical support: Contact the UF Computing Help Desk at 352-392-4357 or via e-mail at helpdesk@ufl.edu.

Career Connections Center: Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.

Academic Resources: 1317 Turlington Hall. The mission of Academic Resources at the University of Florida is to empower students to become successful lifelong learners. Through a variety of services and instructional approaches, CLAS Academic Resources seeks to help students enrolled in College of Liberal Arts and Sciences courses master effective ways of learning for different disciplines. Services include tutoring, supplemental instruction, standardized test preparation, and language support.

Library Support: Various ways to receive assistance concerning using the libraries or finding resources.

Writing Studio: 2215 Turlington Hall, 352-846-1138. Help with brainstorming, formatting, and writing papers.

Health and Wellness

If you have or develop a chronic health issue during the semester, you may not ask me to change your assignment due dates repeatedly. It is not my proper role to help you with such an issue. You must process your concerns with the office of the Dean of Students or the DRC. If you have a DRC claim, then it must be brought to my attention early in the semester. I will not make retroactive assignment extensions.

UF Dean of Students Office - U Matter, We Care: If you or someone you know is in distress, please get in touch with umatter@ufl.edu, 352-392-1575, or visit the U Matter, We Care website to refer or report a concern, and a team member will reach out to the student in distress.

Counseling and Wellness Center: Visit the Counseling and Wellness Center website or call 352-392-1575 for information on crisis services as well as non-crisis services.

Student Health Care Center: Call 352-392-1161 for 24/7 information to help you find the care you need or visit the Student Health Care Center website.

University Police Department: Visit UF Police Department website or call 352-392-1111 (or 9-1-1 for emergencies).

UF Health Shands Emergency Room / Trauma Center: For immediate medical care, call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; Visit the UF Health Emergency Room and Trauma Center website.

Students Requiring Accommodations

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center. See “Get Started With the DRC” Disability Resource Center webpage (<https://disability.ufl.edu/get-started/>). Students need to share their accommodation letter with their instructor and discuss their access needs as early as possible in the semester.

Course Evaluation

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online. Students can complete assessment in three ways: [1] The email they receive from GatorEvals; [2] Their Canvas course menu under GatorEvals; or [3] The central portal at <https://my-ufl.bluera.com>. Guidance on how to provide constructive feedback is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

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 Conduct Code outlines several behaviors that violate this code, along with the possible sanctions. See the UF

Conduct Code website (<https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>) for more information. If you have any questions or concerns, please consult with the instructor in this class.

In-class Recording (the following statement is required by state law)

As required by state law, 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.

Use and Commercial Sale of Course Lectures

The content presented in the class is the property of UF and may not be duplicated in any format without permission from UF, and may not be used for any commercial purposes. Students violating this policy may be subject to disciplinary action under the UF Conduct Code.

No part of the PowerPoints or other instructional content posted on Canvas may be reproduced, shared, or posted in any form outside of the class without permission in writing from Stephen Mulkey. Please see the statement above regarding in-class recording by students.

Possible Materials for Projects and Discussion

Books and Essays

The New Climate War
Michael E. Mann
Public Affairs 2021
ISBN-10: 1541758234

Our Fragile Moment

Michael E. Mann

Public Affairs 2023

The Climate Book

Greta Thunberg (ed.)

Penguin Press 2023

The Sixth Extinction: An Unnatural History

Elizabeth Kolbert

Holt and Company, 2014

ISBN-13: 978-1250062185

[Drawdown 2020-2023](#): *The Most Comprehensive Plan Ever Proposed to Reverse Global Warming (download from website)*

Merchants of Doubt

Naomi Oreskes and Erik M. Conway

Bloomsbury Press 2011

ISBN-13: 978-1596916104

21 Lessons for the 21st Century

Yuval Noah Harari

Spiegel & Grau 2018

ASIN: B079WM7KLS

Sustainability Science

Ariane König and Jerome Ravetz (eds.)

Routledge 2017

ISBN-13: 978-1138659285

Thinking in Systems: A Primer

Donella H. Meadows (author) and Diana Wright (editor)

Chelsea Green Publishing 2008

ISBN-13: 978-1603580557

Silent Spring

Rachel L. Carson

Houghton Mifflin Harcourt 2002 (Anniversary Edition)

ISBN-13: 978-0618253050

The Unsettling of America: Culture and Agriculture

Wendell Berry

Counterpoint 2015
ISBN-13: 978-1619025998

Half-Earth: Our Planet's Fight For Life
E. O. Wilson
Liveright 2017
ISBN-13: 978-1631492525

Transitioning Toward Sustainability: Advancing the Scientific Foundation
Brose, D. et al.
National Academies Press
ISBN 978-0-309-44375-3

Sustainability Key Concepts 2nd Edition
Leslie Paul Thiele
Polity Press
ISBN-13:978-1-5095-1106-8

Journals*

[Proceedings of the National Academy of Sciences US](#)

[Nature](#)

[Nature Communications](#)

[Science](#)

[Science Advances](#)

[Scientific Reports](#)

[Earth's Future](#)

[Nature Climate Change](#)

[PLOS One](#)

[Global Change Biology](#)

[Ecology Letters](#)

[Environmental Research Letters](#)

[Trends in Ecology and Evolution](#)

[Sustainability Science](#)

[Biological Conservation](#)

*All are freely available if accessed from UFL.EDU

Sources of Literature Reviews and Assessment

[US Global Change Research Program](#)

[Intergovernmental Panel on Climate Change](#)

[Skeptical Science](#)

[International Energy Agency](#)

Letters of Recommendation: Please do not request a letter of recommendation unless you have cultivated a professional relationship with me over more than one semester. Getting an A in my course is not sufficient. I need to know much more about your professional development before I can write a meaningful letter. A letter that simply recapitulates what can be read on your transcript will not help you with admission to professional school and it is not respectful of my time.

Syllabus revised 17 July 2025