

BSC2862: GLOBAL CHANGE ECOLOGY & SUSTAINABILITY

UF ONLINE SECTION: 2HB6, COURSE # 24745

3 CREDIT HOURS

SPRING 2023

Class meeting time and location: This course is facilitated 100% online

INSTRUCTOR

Mariela Pajuelo, PhD; mpajuelo@ufl.edu

OFFICE HOURS:

Thursdays 6-7PM and by appointment online (via Zoom).

COURSE COORDINATOR:

Mariela Pajuelo, Instructor

COURSE WEBSITE:

Class material including the syllabus, schedule, content (videos with playposit), and other information related to the course will be posted on the [course e-learning website](#).

You are responsible for all announcements made in lecture and/or posted on the course website for this class. For help with e-learning/Canvas, call the UF Computing Helpdesk at 352-392-4357 or click on one of the help tabs along the top of the e-learning website.

COURSE COMMUNICATIONS:

MESSAGES:

Please, contact through UF e-learning Mail Tool. Use regular [email](#) ONLY for personal questions such as grades, special circumstances, or needed accommodations. Expect a response **within 24 hours**, except on weekends, holidays or when school is closed. All email correspondence to the course instructor must originate from your ufl.edu account, have your full name in the body of the email, and contain your course and section number in the subject line.

GENERAL COURSE QUESTIONS:

If you have a question not specific to you, consult the General Course Questions Forum. It's likely that others have the same questions. Feel free to answer questions posted by your peers. The General Course Questions Forum will be checked daily.

FACE-TO-FACE MEETINGS:

Using Zoom and by appointment. Also, every **Thursday at 6:00 PM**, I will conduct synchronous zoom meetings. These are not mandatory but will serve as a way to connect to each other and to clarify concepts, revisit difficult material, or address any challenges in person.

REQUIRED TEXTBOOK:

Environment: The Science Behind the Stories, by Jay Withgott and Matthew Laposata, 2018, Pearson Education, Inc., 6th Edition, ISBN (for Pearson etext access card): **9780134873633**

Note, either a paperback or etext version (any vendor) of the text may be used, depending on what is most accessible for each student. The text will be used for readings only; no access to text-associated activities (through the publisher) is required for this course.

[The etext can be purchased through this link](#), or another option of your choosing.

Optional readings will be listed on the individual Module pages.

ADDITIONAL RESOURCES:

Resources relevant to the course (e.g., books, web sites, blogs, etc.) will be provided in a file that can be accessed through the Canvas course page. An announcement will be made to students when resources are added.

PREREQUISITE KNOWLEDGE AND SKILLS:

There are no pre-requisites for this course, which covers some general ecology and environmental science topics, as well as current topics on global change. Students who do not have a background in biology, ecology, or environmental science may have to spend more time on required reading to ensure they understand the basic concepts and examples. The videos and assignments review some but not all concepts from the

reading, and material from the reading (not covered in videos) will be included in weekly quizzes. It is the student's responsibility to ask questions in the General Course Questions Board, or to contact the instructor to help clarify course content when needed.

COURSE DESCRIPTION AND GOALS:

This course examines key issues in sustainability and global environmental change from an ecological perspective. Major themes include impacts of climate change on terrestrial ecological communities; feedback between the terrestrial biosphere and the atmosphere; and implications of climate change for the sustainability of natural and managed ecosystems.

By the end of this course, students will be able to:

- Identify the major factors that influence land use change, alteration in water, nutrient, and carbon cycles, climate change, redistribution of species, and extinctions on a global scale. **(Content SLO for Gen Ed P and B - assessed through weekly quizzes, PlayPosit videos)**
- Compare and contrast different management practices, technologies, policies, and human behavior that can promote sustainability. **(Critical Thinking SLO for Gen Ed P and B - assessed through discussion posts, assignments/essays, final paper)**
- Apply the basic concepts in ecology to evaluate human impact on global systems. **(Communication SLO for Gen Ed for B - assessed through final presentation, final paper)**

HOW THIS COURSE RELATES TO THE STUDENT LEARNING OUTCOMES:

This course meets General Education Student Learning Outcome requirements in Content, Critical Thinking, and Communication for the Physical and Biological Sciences Subject Area. See the [Student Learning Outcomes](#) for more information:

INSTRUCTIONAL METHODS:

This course comprises 14 modules available online through the Canvas course site. Each module will be opened on **Sunday at 8:00 AM**. For each module, there will be required (1) reading from the textbook, (2) a discussion, (3) an assignment (some of which are

related to a final paper), and (4) a module quiz. The online content uses PlayPosit to provide interactions within the online lecture videos for each Module. Note that the reading material and video content are not mutually exclusive and you must complete all parts of the Module to be able to do well on the Module quiz.

COURSE POLICIES:

ATTENDANCE POLICY:

Your timely completion of all Module playposit questions, discussions, assignments (including components of the final paper), and quizzes is expected. See below for information on deadline and make-up policies.

DISCUSSION, ASSIGNMENT, AND QUIZ POLICIES:

Module discussions, assignments, and quizzes are administered via UF e-learning and must be completed by **11:59 PM** on their assigned due date. Module discussions have two parts, and your initial posting is due by **Thursday at 11:59 PM**, with commentary on two peer posts due by Sunday at 11:59 PM. All other assignments are due by **Sunday at 11:59 PM**. 5% of discussion, assignment, or quiz grades will be subtracted for each day a submission is late for up to 3 days late (-20%), after which a grade will revert to zero. Grade penalties will be excused only if a student has an official excuse, per the instructions in the Make-up Policy section.

FINAL PAPER:

A final paper is due at the end of the semester on a global change topic. Depending on enrollment, students may be assigned to work together on one paper topic but will be graded individually for their final submission. Milestone assignments that relate to the paper (paper plan, annotated bibliography, etc.) will count in the regular assignment category (collectively worth 20% of your grade). The final paper is worth 25% of the course grade. Detailed instructions will be provided on the Canvas course page at mid-semester. The same late submission policies that apply to Discussions, Assignments, and Quizzes also apply to the final paper.

MAKE-UP POLICY:

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

the Getting Help section below regarding issues with technology. Note that you will need documentation for any technical difficulties and must notify the instructor within 24 hours of a technical issue. If the Helpdesk ticket timestamp is after the deadline, the submission will be considered late (*See Discussion, Assignment, and Quiz Policies Section*). Written documentation of illness or a serious personal matter should be provided and can be acquired from the [Dean of Students Office](#) (DSO). You should submit the documentation to the DSO first and THEN email me saying that you have sent in the documentation. Do NOT submit any documentation to me. It is up to the student to make sure that I receive the notification from the DSO in a timely fashion (within 5 business days of the absence).

COURSE TECHNOLOGY:

PLAYPOSIT:

This course uses PlayPosit to provide interactions within the online lecture videos. When you select a video thumbnail, the lecture video will open for you to watch and complete the interactions (e.g., multiple choice questions, discussion forums, polling surveys, reflective pauses, etc.). Why is this course using PlayPosit? The interactions provide an opportunity for you to assess and apply your understanding of the concepts that are being discussed in the video. See links on the Orientation Module for more information.

For more information on PlayPosit, please review [The Student Experience](#). If you have any technical difficulties while using PlayPosit, please review [PlayPosit Troubleshooting](#) before contacting the UF Help Desk. Information relating to accommodations and privacy can be found at [PlayPosit Accessibility](#) and [PlayPosit Privacy Policy](#).

ZOOM VIDEO CONFERENCING:

Zoom is a video conferencing tool that allows for screen sharing and real-time communication at a distance. It also allows for synchronous communication to be recorded for viewing at a later time. View the [Zoom Privacy Policy](#).

CANVAS

All materials for this course are delivered through and all assignments are submitted to the Canvas course page.

ONLINE COURSE EVALUATION:

Students will complete two surveys to give feedback to the instructor regarding the elements of this course. These surveys are anonymous and are a way for you to provide honest feedback on the course and share any advice you have to make the course better. This feedback is essential to provide the best quality instruction and give you the best learning experience. The surveys will be conducted during weeks 6 and 14. You will have to complete each before moving forward with the course. You will be graded for your participation in the quiz, not for your answers, as the survey is anonymous. More details are provided in the links in the Orientation Module.

Students are also expected to provide feedback on the quality of instruction in this course by completing online evaluations at [GatorEvals](#). Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Summary results of these assessments are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

UF POLICIES:

UNIVERSITY POLICY ON ACCOMMODATING STUDENTS WITH DISABILITIES:

Students with disabilities requesting accommodations should first register with the [Disability Resource Center](#) (352-392-8565) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

UNIVERSITY POLICY ON ACADEMIC CONDUCT:

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 honesty 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](#) 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.

CLASS DEMEANOR OR NETIQUETTE:

All members of the class are expected to follow rules of common courtesy in all email messages, threaded discussions and chats, in accordance with the [UF Netiquette policy](#).

GETTING HELP:

For technical issues related to Canvas, please contact the [UF Help Desk](#), call (352) 392-HELP (4357), or walk-in at HUB 132.

Any requests for make-ups due to technical issues MUST be accompanied by the ticket number received from the Help Desk when the problem was reported to them. The ticket number **will document the time and date of the problem**. You MUST e-mail your instructor within 24 hours of the technical difficulty if you wish to request a make-up.

Other resources are available at [UF Distance Learning](#) for:

- Counseling and Wellness resources
- Disability resources
- Resources for handling student concerns and complaints
- Library Help Desk support

Should you have any complaints with your experience in this course please submit your complaint through the [UF student complaint process](#).

GRADING POLICIES:

All grades will be posted on e-Learning, and it is the responsibility of the student to check their grades to make sure they are accurate. If there is a discrepancy, you must let me know within ONE week of the grade being posted on e-Learning.

Table 1. Course evaluation methods and their percentage of grade.

Evaluation type	Percentage of grade
Weekly Discussion (13)	20
Weekly Assignment (13)	20
Weekly Quiz (13)	20
Final Paper	25
Participation (PlayPosit questions, surveys, etc.)	15

GRADING SCALE:

Grade categories are listed below. Final scores will NOT be rounded (i.e., 89.99% is not 90%).

Point Range (%) Letter Grade

≥ 93.00 A; ≥ 90.00 A-; ≥ 87.00 B+; ≥ 83.00 B; ≥ 80.00 B-; ≥ 77.00 C+; ≥ 73.00 C;

≥ 70.00 C-; ≥ 67.00 D+; ≥ 60.00 D; ≥ 57.00 D-; < 57.00 E

More information on current UF grading policies for assigning grade points can be found at the Undergraduate Catalog webpage: [Grades and Grading Policy](#). A minimum grade of C is required for general education credit.

COURSE SCHEDULE:

CRITICAL DATES:

All deadlines are listed in the course schedule below, including milestone assignments for the final paper. Individual modules will be open at the start of the week on Monday. Assignments and weekly quizzes will be due at **11:59 PM on Sunday**. Discussions follow a Thursday/Sunday submission pattern. Discussions have two parts, and your initial posting is due by **Thursday at 11:59 PM**, with commentary on two peer posts due by **11:59 PM on Sunday**. There is no final exam.

Table 2. Weekly Schedule of Topics and Assignments

Week	Date	Topic	Reading	Assignment
1	Jan. 15	Orientation Module 1: Climate, Biomes, and Biogeography. In this module students will learn about different Biomes, how and why organisms are adapted to live in particular systems, and the general role of climate and geological processes such as plate tectonics and continental drift in explaining these patterns	Chapter 4.3 (except for p. 99, "Closing the loop")	<i>Discussion:</i> About me; Biomes <i>Assignment:</i> Biome observations
2	Jan. 22	Module 2: Evolution, Ecology, and Demography. In this module students will learn about the hierarchical ecological levels, general concepts in evolution, and the relationships between these topics in explaining how and why organisms adapt to live in particular areas.	Ch. 3 (except 3.4), 8	<i>Discussion:</i> Demography trends, Empty Planet <i>Assignment:</i> Anole evolution & adaptation video & questions
3	Jan. 29	Module 3: Biodiversity and Extinctions. In this module, students will learn what biodiversity comprises, its main threats and consequences of its loss (extinction), and some of the approaches to maintain it.	Ch. 3.4, Ch. 4: case study; closing the loop, 4.3, Ch. 11	<i>Discussion:</i> IUCN red list threatened & endangered species <i>Assignment:</i> Habitat connectivity exercise
4	Feb. 5	Module 4: Communities and Ecosystems. In this module students will learn more about the importance of ecological communities--assemblages of more than one species that interact with each other, and ecosystems—a community of interacting organisms and their physical environment.	Ch. 4 all except 4.3; Ch. 5 intro, 5.1: the science behind the story, 5.2	<i>Discussion:</i> Carbon footprint <i>Assignment:</i> Keystone species video & questions. Project part 1 – selection of sub-topic

5	Feb. 12	Module 5: Climate Change 1: Paleoclimate and Measuring climate change. In this module students will distinguish natural from anthropogenic forces affecting climate change. Students will also review some of the methods used to identify how the climate has changed over millions of years, learn about climate forcing agents besides greenhouse gases, and review how global circulation patterns are influenced by climate.	Ch. 5.1: feedback loops, defining properties; Ch. 18 Intro through 18.2	<i>Discussion:</i> Climate Central: Sea level rise <i>Assignment:</i> Project part 2 - peer review methods review and paper citation due
6	Feb. 19	Module 6: Climate Change 2: Impacts. In this module, students will review the Earth system and the consequences of climate change (e.g., glaciers and sea ice melting, changes in plant and animal ranges and phenology, increased frequency of heat waves, etc.).	Ch. 18.3 and end of chapter	<i>Discussion:</i> Current event climate article discussion <i>Assignment:</i> Project part 3 - Global change paper summary
7	Feb. 26	Module 7: Biogeochemical Cycles. In this module, students will learn about the major stocks and fluxes of the global water, nitrogen, and phosphorous cycles and how these cycles have been altered by human activity.	Ch. 5.3	<i>Discussion:</i> Nitrogen footprint <i>Assignment:</i> Nature Observation
8	Mar. 5	Module 8: Land Use: Agriculture, Forestry, and Urban systems. In this module, students will review the main types of land use--agriculture and forestry, their effects on the environment and climate, and consider how land use has changed since the Industrial Revolution.	Ch. 9, 10, 12, 13	<i>Discussion:</i> Eating lower on the food chain <i>Assignment:</i> none
9	Mar. 19	Module 9: Environmental Change and Human Health. In this module students will review environmental factors that affect health and well-being of people across various sectors.	Ch. 14	<i>Discussion:</i> HAB and Red tide effects <i>Assignment:</i> Project part 4- annotated bibliography due
10	Mar. 26	Module 10: Energy: Renewable and non-Renewable. In this module, students will be able to identify the energy sources we use and describe how sources are used and differently around the world.	Ch. 19, 20, 21	<i>Discussion:</i> Current event energy article discussion <i>Assignment:</i> none
11	Apr. 2	Module 11: Natural Climate Solutions and Geoengineering. In this module, students will learn about two broad categories of solutions to mitigate or adapt to climate change.	Ch. 18.4	<i>Discussion:</i> Current event geoengineering article discussion <i>Assignment:</i> Project part 5- sub-topic presentation
12	Apr. 9	Module 12: Economics and Ethics. In this module, students will review economic theory and examples of how economics are incorporated into climate change policy.	Ch. 6	<i>Discussion:</i> Ethics of climate change

				<i>Assignment:</i> Project part 6 – paper outline
13	Apr. 16	Module 13: Sustainable Solutions. In this module students will learn about specific approaches to address climate change as well as other sustainable development goals.	Ch. 24	<i>Discussion:</i> Project Draw Down <i>Assignment:</i> Scaling Up paper summary
14	Apr. 23	Module 14: Conclusions – Policy and Action. In this module you will review the purpose and history of environmental policy and how human behavior can inform policy that ensures sustainable use of resources.	Ch. 7	<i>Discussion:</i> Journal Entry 3 <i>Assignment:</i> Project part 7 - draft paper due
15	Apr. 26	Module 14: Course wrap-up and project work. Students focus on working on their final paper and providing peer-review feedback to their classmates.		<i>Discussion:</i> none <i>Assignment:</i> Project part 8 - peer reviews on project due
16	May 1	Module 14: Course wrap-up. Students finish up their final paper after incorporating peer-review feedback from classmates and instructor.		<i>Discussion:</i> none <i>Assignment:</i> Final Paper due

DISCLAIMER:

This syllabus represents my current plans and objectives. As we go through the semester, those plans may need to change to enhance the class learning opportunity. Such changes, communicated clearly, are not unusual and should be expected.