

## **BSC2862: GLOBAL CHANGE ECOLOGY & SUSTAINABILITY**

UF ONLINE SECTION: 2HB6, COURSE # 24745

3 CREDIT HOURS

SPRING 2026

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

### ***INSTRUCTOR***

Mariela Pajuelo, PhD; [mpajuelo@ufl.edu](mailto:mpajuelo@ufl.edu)

### ***OFFICE HOURS:***

Thursdays 6-8PM and/or 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, 2021, Pearson Education, Inc., 7th Edition, ISBN-13: 9780135848661

Note, you can purchase the e-text or print version here: [Environment: The Science Behind the Stories Links to an external site](#). The text will be used for readings only; no access to text-associated activities (through the publisher) is required for this course.

A complete list of readings and multimedia resources appears in the **weekly course schedule** section of this syllabus.

### **MATERIALS & SUPPLIES:** N/A

### **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.

### **COURSE DESCRIPTION AND GOALS:**

This course affords students the ability to critically examine and evaluate the principles of the scientific method, model construction, and use the scientific method to explain natural experiences and phenomena and 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. By the end of this course, students will be able to:

- Understand the dependence of human welfare on ecosystem services
- Assess the long-term sustainability of human activities
- Critically evaluate proposed solutions
- Assess scientific credibility
- Apply logical reasoning
- Communicate scientific information effectively

#### ***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 Biological Sciences Subject Area. Biological science courses provide instruction in the basic concepts, theories and terms of the scientific method in the context of the life sciences. Courses focus on major scientific developments and their impacts on society, science and the environment, and the relevant processes that govern biological systems. Students will formulate empirically-testable hypotheses derived from the study of living things, apply logical reasoning skills through scientific criticism and argument, and apply techniques of discovery and critical thinking to evaluate outcomes of experiments.

See the [Student Learning Outcomes](#) for more information.

#### ***INSTRUCTIONAL METHODS:***

This course comprises 13 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*). Documentation for illness or serious personal matters may be requested by the instructor. In extreme circumstances, the Dean of Students Office may assist with communication between students and faculty, but they do **not** provide or verify excused absences. It remains the student's responsibility to communicate directly with the instructor and provide relevant documentation when requested.

#### **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:

This course is fully asynchronous; however, **optional weekly office hours and review sessions** are held via Zoom and recorded for later viewing. Attendance is not required and does not affect grades.

#### 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. Completion (not content) of the anonymous survey is confirmed through Canvas participation tracking. Students receive full participation credit as long as the survey is submitted, regardless of responses. More details are provided in the links in the Orientation Module.

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 evaluations in three ways:

- [1] The email they receive from GatorEvals
- [2] Their Canvas course menu under GatorEvals
- [3] The central portal at <https://my-ufl.bluera.com>

Guidance on constructive feedback is available at

<https://gatorevals.aa.ufl.edu/students/>.

Summaries of results are available at <https://gatorevals.aa.ufl.edu/public-results/>.

## UF POLICIES:

### *UNIVERSITY POLICY ON ACCOMMODATING STUDENTS WITH DISABILITIES:*

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the Disability Resource Center. See the “Get Started With the DRC” webpage: <https://disability.ufl.edu/get-started/>  
It is important for students to share their accommodation letter with the instructor and discuss access needs 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 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 specifies violations and sanctions. See:

<https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/>.

### *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.

Concerns should first be addressed within the course (instructor or department). If not resolved, students may contact the [University Ombudsman](#) to seek guidance.

## 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*

$\geq 93.00$  A;  $\geq 90.00$  A-;  $\geq 87.00$  B+;  $\geq 83.00$  B;  $\geq 80.00$  B-;  $\geq 77.00$  C+;  $\geq 73.00$  C;

$\geq 70.00$  C-;  $\geq 67.00$  D+;  $\geq 60.00$  D;  $\geq 57.00$  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	Due Date	Topic	Reading/Video	Assignment
1	Jan. 18	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 (pp. 92-98) Videos: 4:30 min, 31 min	<i>Discussion:</i> About me; Biomes (~200 words)  <i>Assignment:</i> Nature Observation (20 min observation, 200 words summary or reflection))
2	Jan. 25	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) (pp. 49-68), 8 (pp. 187-208). Videos: 3 min, 1 h 13 min	<i>Discussion:</i> Demography trends, Empty Planet (2-3 min reading, 200 words)  <i>Assignment:</i> Anole evolution & adaptation video (18 min) & questions
3	Feb. 1	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 (pp. 47-48), Ch. 4: case study; closing the loop, 4.3 (pp. 47-48), Ch. 11 (pp. 273-303). Videos: 3:11 min, 1h 45 min	<i>Discussion:</i> IUCN red list threatened & endangered species (~250 words)  <i>Assignment:</i> Habitat connectivity exercise (5 min reading, ~250 words summary or reflection)). <b>Project part 1</b> – selection of sub-topic
4	Feb. 8	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 (except 4.3 Earth Biomes) (pp. 75-94), Ch. 5.1 (pp. 107-110), Ch. 5.2 (pp. 111-121). Videos: 2:24 min, 1h 25 min.	<i>Discussion:</i> Carbon footprint (2 min reading, 10 min calculation, 200 words)



				<i>Assignment: <b>Project part 2</b> - peer review methods review and paper citation due (200 words)</i>
5	Feb. 15	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. 18 (pp. 486-494) Videos: 2:59 min, 1h 30 min	<i>Discussion: La Niña Winter is possible (2 min reading, 200 words)</i>  <i>Assignment: Climate Change Performance Index (5 min reading, 200 words summary or reflection)</i>
6	Feb. 22	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 (pp. 495-508) Videos: 1:58 min, 2h 15 min	<i>Discussion: Climate talks (3 min reading, 200 words)</i>  <i>Assignment: none</i>
7	Mar. 1	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 (pp. 121-128); Ch. 15 (pp. 389-416); Ch. 16.1; Ch. 16.2; Ch. 16.3 (pp. 425-437).  Videos: 4:44 min, 1h 55 min	<i>Discussion: Nitrogen footprint (2 min reading, 200 words)</i>  <i>Assignment: <b>Project part 3</b>- annotated bibliography due (500 words)</i>
8	Mar. 8	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 (pp. 213-235); Ch. 10 (pp. 241-268); Ch. 12 (pp. 307-332), Ch. 13 (pp. 337-354)  Videos: 3:08 min, 2h 20 min	<i>Discussion: Eating lower on the food chain (2:41 min video, 200 words)</i>  <i>Assignment: none</i>
9	Mar. 15	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 (pp. 359-384); Ch. 17 (pp. 451-480)  Videos: 2:27 min, 1h 13 min	<i>Discussion: HAB and Red tide effects (3 min reading, 200 words)</i>  <i>Assignment: <b>Project part 4</b> - sub-topical presentation (15 min video)</i>

10	Mar. 29	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 (pp. 523-556); Ch. 20 (pp. 561-584); Ch. 21 (pp. 589-614)  Videos: 2:47 min, 1h 30 min	<i>Discussion:</i> Current event energy article discussion (2 min reading, 200 words)  <i>Assignment:</i> Energy use at home (10 min activity, 200 words summary or reflection)
11	Apr. 5	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 (pp. 508-519)  Videos: 3:35 min, 1h 40 min	<i>Discussion:</i> Current event geoengineering article discussion (12:26 min video, 200 words)  <i>Assignment:</i> <b>Project part 5</b> – paper outline
12	Apr. 12	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 (pp. 132-154)  Videos: 3:15 min, 57 min	<i>Discussion:</i> Tackling climate change (2 min reading, 200 words)  <i>Assignment:</i> Interview about economics and ethics (~2-3 min video)
13	Apr. 19	Module 13: Environmental 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 (pp. 161-180)  Videos: 3:22 min, 50 min	<i>Discussion:</i> Global change reflection (200 words)  <i>Assignment:</i> <b>Project part 6</b> - draft paper due
14	Apr. 22	Module 13: 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> <b>Project part 7</b> - peer reviews on paper project due
15	Apr. 26	Module 13: 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> <b>Project part 8</b> - Final Paper due

## DISCLAIMER:

The instructor reserves the right to make reasonable changes to the course schedule **only when such changes clearly benefit student learning** (e.g., extended deadlines, reduced readings). The grading policy, learning objectives, and attendance expectations **will not be changed** once the course begins.