



# SYLLABUS

## ENR 6100

Advanced Principles of Environmental Science, 3 Credit Hours  
Spring 2023

Course Delivery: Online, Asynchronous

## COURSE OVERVIEW

### Instructor

Dr. Brian Slater

slater.39@osu.edu

(614) 581-9102 (mobile)

Office hours: By arrangement

### Course description

This course will cover core concepts of environmental science, and address global environmental challenges ranging from water quality, global climate change, resource availability, to land-use change. Major principles and concepts addressed will include Earth resources and ecospheres, biomes, biogeochemical cycles, biodiversity, ecosystem resilience, and resource security. A major focus of the course will be to understand global nutrient cycles and their linkages to pressing environmental issues. To this end, the biogeochemistry, food web dynamics, and abiotic and biotic factors of key ecosystems (forests, grasslands, wetlands, freshwater and marine environments, and human habitations) will be explored when discussing a variety of environmental issues and solutions.

**Course goals:** The primary goals for this course are to 1) introduce students to foundational principles within environmental science and 2) provide information that will help students apply ecological and social science frameworks required to manage critical air, soil, and water resources. Lectures will address basic ecological principles, case studies, and empirical approaches used to understand society's most pressing environmental issues.

## Course learning outcomes

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

1. Describe principles of the natural environment including biomes, biogeochemical cycles and food webs, biodiversity, resilience and sustainability, and understand the mechanisms that control major global challenges.
2. Explain how understanding and managing key biogeochemical cycles are critical to solving pressing environmental problems.
3. Compare and contrast case studies highlighting the management of ecosystems and assess the application of basic ecological principals to current environmental problems.
4. Explore interdisciplinary approaches required for managing key ecosystems and solving environmental issues.

## How This Course Works

**Mode of delivery:** This course is 100% online, asynchronous. There are no required sessions when you must be logged in to Carmen at a scheduled time.

**Pace of online activities:** This course is divided into **weekly modules** that are typically released one week ahead of time. Students are expected to keep pace with weekly deadlines but may schedule their efforts freely within that time frame. And please let me know whenever life circumstances occur for which adjustments to the assignment schedule would be helpful. I will do my best to make your studies in this course to be as low stress and enjoyable as possible.

**Credit hours and work expectations:** This is a [3] credit-hour course. According to [Ohio State bylaws on instruction](http://go.osu.edu/credithours) (go.osu.edu/credithours), students should expect around [3] hours per week of time spent on direct instruction (instructor content and Carmen activities, for example) in addition to [6] hours of homework (reading and assignment preparation, for example) to receive a grade of [C] average.

**Attendance and participation requirements:** Research shows regular participation is one of the highest predictors of success. With that in mind, I have the following expectations for everyone's participation:

- **Participating in online activities for attendance: at least once per week**

You are expected to log in to the course in Carmen every week. During most weeks you

will probably log in many times. If you have a situation that might cause you to miss an entire week of class, discuss it with me *as soon as possible*.

► **Participating in discussion forums: two or more times per week**

As part of your participation, each week you can expect to post at least twice as part of our substantive class discussion on the week's topics. Some weeks we will not have discussion posts, to lighten the assignment load during busy times of the semester or just to provide some variety in the class activities.

## COURSE MATERIALS AND TECHNOLOGIES

A variety of presentations, readings, and online materials will be provided or referenced for use during the course. Materials and references will be posted on Carmen.

### Course technology

For help with your password, university e-mail, Carmen, or any other technology issues, questions, or requests, contact the OSU IT Service Desk. Standard support hours are available at <https://ocio.osu.edu/help/hours>, and support for urgent issues is available 24x7.

- **Self-Service and Chat support:** <http://ocio.osu.edu/selfservice>
- **Phone:** 614-688-HELP (4357)
- **Email:** [8help@osu.edu](mailto:8help@osu.edu)
- **TDD:** 614-688-8743

### REQUIRED SOFTWARE

Microsoft Office 365: All Ohio State students are now eligible for free Microsoft Office 365 ProPlus through Microsoft's Student Advantage program. Full instructions for downloading and installation can be found <http://office365.osu.edu/>.

# GRADING AND FACULTY RESPONSE

## How your grade is calculated

ASSIGNMENT CATEGORY	POINTS
Weekly Carmen interaction	10
Weekly discussions and class interactions	20
Midterm quiz	20
Term research paper	25
Final Exam	25
<b>Total</b>	<b>100</b>

*See course schedule, below, for dates.*

## Late assignments

Unless granted an extension for extenuating circumstances, all assignments must be turned in by the stated due date. Each assignment that is turned in late will be marked down one letter grade every 24-hour period it is overdue.

## Grading scale

93–100: A  
 90–92.9: A-  
 87–89.9: B+  
 83–86.9: B  
 80–82.9: B-  
 77–79.9: C+  
 73–76.9: C  
 70–72.9: C-  
 67–69.9: D+  
 60–66.9: D  
 Below 60: E

## Faculty feedback and response time

I am providing the following list to give you an idea of my intended availability throughout the course. (Remember that you can call **614-688-HELP** at any time if you have a technical problem.)

- **Grading and feedback:** For weekly assignments, I will respond as part of the discussion, and you can generally expect individual feedback within **7 days**.
- **E-mail:** I will reply to e-mails within **24 hours on school days**.

## PARTICIPATION AND ATTENDANCE

### Class preparation and participation:

This is a graduate level course; therefore, active participation from all students is crucial and will enhance the learning experience for all. Recognizing that there are multiple ways to participate and contribute toward online class discussions, students will be graded on a variety of different activities that assess class preparedness and participation, centered on written responses. Due to the number of online activities, attention and punctuality is crucial.

### Online Interactions:

Students are expected to complete the assigned readings for each class and be prepared to critically discuss them in our online forums. Online reflections and discussions will be initiated each week and all students are expected to interact. The point of these reflections is to record your reaction to the presentations, readings and resources provided. Are there concepts that you wish to delve into more deeply during class? What surprised you about the readings? Are there connections that you can make to your own work or research that you wish to share? The included questions should demonstrate your ability to think critically and or synthetically about a given topic or reading. Lastly, I will aim to address as many questions as possible during these discussions. Weekly discussions are worth 20% of your grade.

## Exams:

A mid-term exam and final exam will be assigned to test student comprehension of topics covered in class. Exams will be a mixture of multiple-choice, true/false, and short-answer and essay questions. An online study guide will be provided prior to each exam to help students prepare. Given the on-line nature of the course, both exams will be open book with a 90-minute time limit.

## OTHER COURSE POLICIES

### Discussion and Communication Guidelines

The following are my expectations for how we should communicate as a class. Above all, please remember to be respectful and thoughtful.

- ▶ **Writing style:** While there is no need to participate in class discussions as if you were writing a research paper, you should remember to write using good grammar, spelling, and punctuation. A more conversational tone is fine for non-academic topics.
- ▶ **Tone and civility:** Let's maintain a supportive learning community where everyone feels safe and where people can disagree amicably. Remember that sarcasm doesn't always come across online. I will provide specific guidance for discussions on controversial or personal topics.
- ▶ **Citing your sources:** When we have academic discussions, please cite your sources to back up what you say. For the textbook or other course materials, list at least the title and page numbers. For online sources, include a link.
- ▶ **Backing up your work:** Consider composing your academic posts in a word processor, where you can save your work, and then copying into the Carmen discussion.

## Academic Integrity Policy

### OHIO STATE'S ACADEMIC INTEGRITY POLICY

Academic integrity is essential to maintaining an environment that fosters excellence in teaching, research, and other educational and scholarly activities. Thus, The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the university's [Code of Student Conduct](http://studentconduct.osu.edu) (studentconduct.osu.edu), and that all students will complete all academic and scholarly assignments with fairness and honesty. Students must recognize that failure to follow the rules and guidelines established in the university's *Code of Student Conduct* and this syllabus may constitute "Academic Misconduct."

The Ohio State University's *Code of Student Conduct* (Section 3335-23-04) defines academic misconduct as: "Any activity that tends to compromise the academic integrity of the university or subvert the educational process." Examples of academic misconduct include (but are not limited to) plagiarism, collusion (unauthorized collaboration), copying the work of another student, and possession of unauthorized materials during an examination. Ignorance of the university's *Code of Student Conduct* is never considered an excuse for academic misconduct, so I recommend that you review the *Code of Student Conduct* and, specifically, the sections dealing with academic misconduct.

**If I suspect that a student has committed academic misconduct in this course, I am obligated by university rules to report my suspicions to the Committee on Academic Misconduct.** If COAM determines that you have violated the university's *Code of Student Conduct* (i.e., committed academic misconduct), the sanctions for the misconduct could include a failing grade in this course and suspension or dismissal from the university.

If you have any questions about the above policy or what constitutes academic misconduct in this course, please contact me.

Other sources of information on academic misconduct (integrity) to which you can refer include:

- ▶ [Committee on Academic Misconduct](http://go.osu.edu/coam) (go.osu.edu/coam)
- ▶ [Ten Suggestions for Preserving Academic Integrity](http://go.osu.edu/ten-suggestions) (go.osu.edu/ten-suggestions)
- ▶ [Eight Cardinal Rules of Academic Integrity](http://go.osu.edu/cardinal-rules) (go.osu.edu/cardinal-rules)

## Copyright for Instructional Materials

The materials used in connection with this course may be subject to copyright protection and are only for the use of students officially enrolled in the course for the educational purposes associated with the course. Copyright law must be considered before copying, retaining, or disseminating materials outside of the course.

## Creating an Environment Free from Harassment, Discrimination, and Sexual Misconduct

The Ohio State University is committed to building and maintaining a community to reflect diversity and to improve opportunities for all. All Buckeyes have the right to be free from harassment, discrimination, and sexual misconduct. Ohio State does not discriminate on the basis of age, ancestry, color, disability, ethnicity, gender, gender identity or expression, genetic

information, HIV/AIDS status, military status, national origin, pregnancy (childbirth, false pregnancy, termination of pregnancy, or recovery therefrom), race, religion, sex, sexual orientation, or protected veteran status, or any other bases under the law, in its activities, academic programs, admission, and employment. Members of the university community also have the right to be free from all forms of sexual misconduct: sexual harassment, sexual assault, relationship violence, stalking, and sexual exploitation.

To report harassment, discrimination, sexual misconduct, or retaliation and/or seek confidential and non-confidential resources and supportive measures, contact the Office of Institutional Equity:

1. Online reporting form at [equity.osu.edu](https://equity.osu.edu),
2. Call 614-247-5838 or TTY 614-688-8605,
3. Or email [equity@osu.edu](mailto:equity@osu.edu)

The university is committed to stopping sexual misconduct, preventing its recurrence, eliminating any hostile environment, and remedying its discriminatory effects. All university employees have reporting responsibilities to the Office of Institutional Equity to ensure the university can take appropriate action:

- ▶ All university employees, except those exempted by legal privilege of confidentiality or expressly identified as a confidential reporter, have an obligation to report incidents of sexual assault immediately.
- ▶ The following employees have an obligation to report all other forms of sexual misconduct as soon as practicable but at most within five workdays of becoming aware of such information: 1. Any human resource professional (HRP); 2. Anyone who supervises faculty, staff, students, or volunteers; 3. Chair/director; and 4. Faculty member.

## Your Mental Health

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. No matter where you are engaged in distance learning, The Ohio State University's Student Life Counseling and Consultation Service (CCS) is here to support you. If you find yourself feeling isolated, anxious or overwhelmed, [on-demand mental health resources](https://go.osu.edu/ccsondemand) (go.osu.edu/ccsondemand) are available. You can reach an on-call counselor when CCS is closed at [614- 292-5766](tel:614-292-5766). **24-hour emergency help** is available through the [National Suicide Prevention Lifeline website](https://www.suicidepreventionlifeline.org) (suicidepreventionlifeline.org) or by calling [1-800-273-8255\(TALK\)](tel:1-800-273-8255). [The Ohio State Wellness app](https://go.osu.edu/wellnessapp) (go.osu.edu/wellnessapp) is also a great resource.



# ACCESSIBILITY ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

## Requesting Accommodations

The university strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability including mental health, chronic or temporary medical conditions, please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with [Student Life Disability Services \(SLDS\)](#). After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. In light of the current pandemic, students seeking to request COVID-related accommodations may do so through the university's request process, managed by Student Life Disability Services.

## DISABILITY SERVICES CONTACT INFORMATION

Phone: [614-292-3307](tel:614-292-3307)

Website: [slds.osu.edu](http://slds.osu.edu)

Email: [slds@osu.edu](mailto:slds@osu.edu)

In person: [Baker Hall 098, 113 W. 12th Avenue](#)

## Accessibility of Course Technology

This online course requires use of CarmenCanvas (Ohio State's learning management system) and other online communication and multimedia tools. If you need additional services to use these technologies, please request accommodations as early as possible.

- ▶ [CarmenCanvas accessibility](http://go.osu.edu/canvas-accessibility) ([go.osu.edu/canvas-accessibility](http://go.osu.edu/canvas-accessibility))
- ▶ Streaming audio and video
- ▶ [CarmenZoom accessibility](http://go.osu.edu/zoom-accessibility) ([go.osu.edu/zoom-accessibility](http://go.osu.edu/zoom-accessibility))

## COURSE SCHEDULE

Week	Class Topic
1	Introduction to Advanced Principles of Environmental Science. Outline of course topics and processes.
2	Planet Earth, The Ecospheres, global environmental challenges
3	Biomes and Biodiversity
4	The Hydrosphere: The global water cycle and water resource issues
5	The Geosphere, Pedosphere and Biosphere: The nitrogen cycle, food production and water quality issues in the agricultural Midwest
6	The Geosphere, Pedosphere and Biosphere: The phosphorus cycle and policies surrounding the Lake Erie water basin
7	The Hydrosphere: Nutrient cycling and eutrophication in marine environments
8	The Atmosphere, air pollution, toxins, nitrogen deposition, sulfur and acid rain
9	<b>Midterm</b>  The global carbon cycle, terrestrial; deforestation, land degradation, habitat loss
10	The global carbon cycle-oceans; acidification

11	Biodiversity and biogeochemistry at macro and micro scales.
12	The biogeochemistry of climate change
13	Ecological principles of conservation and sustaining ecosystems, ecosystem services, and natural capital
14	Socio-economic frameworks.
15	Course review; Term Papers Due
16	<b>Final</b>