SYLLABUS

ENR 2100
Introduction to Environmental Science
The Ohio State University
GE Natural Science: Biological Science Class: 3 credits
Autumn Semester 2020 (AU20): Online Sections

COURSE OVERVIEW

This is a completely online course that will utilize multiple platforms supported by OSU. Course content, including lecture presentations and videos will all be delivered through Carmen (https://carmen.osu.edu). This course is asynchronous and self-paced to give students the ability to access and satisfy requirements within a flexible time frame. Carmen will be used to complete all quizzes, exams, and writing assignments. All quizzes, exams and writing assignments are open book. To accommodate students, all assignments, exams and quizzes will be open for a period of days to weeks on Carmen and can be completed from anywhere. However, all course requirements must be completed during the semester of offering. Quizzes, exams and writing assignments must be completed using Carmen by the date shown in the syllabus. A textbook is recommended for our course but not required. All other course materials are free to all students. In addition to Carmen, we have set up a course website go.osu.edu/enr2100 to help students succeed. The use of our course website is optional.

Instructor

Instructor: Dr. Brian H. Lower, Ph.D.
Teaching Associate: Ms. Ella M. Weaver, MENR
Course Email: ENR2100@osu.edu

Course description

This course fulfills the General Education (GE) Category Natural Science, Biological Science. Natural Science coursework fosters students’ understanding of the principles, theories, and methods of modern science, the relationship between science and technology, the implications of scientific discoveries and the potential of science and technology to address problems of the contemporary world.

Course learning outcomes

By the end of this course, students should successfully be able to:
• Understand the basic facts, principles, theories and methods of modern science.
• Acknowledge key events in the development of science and recognize that science is an evolving body of knowledge.
• Describe the inter-dependence of scientific and technological developments.
• Recognize social and philosophical implications of scientific discoveries and understand the potential of science and technology to address problems of the contemporary world.

HOW THIS COURSE WORKS

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

Pace of online activities: This course is divided into weekly modules. Students are expected to keep pace with weekly deadlines but may schedule their efforts freely within that time frame.

Credit hours and work expectations: This is a 3-credit-hour course. According to Ohio State policy, students should expect around 3 hours per week of time spent on direct instruction (e.g., instructor content and Carmen activities) in addition to 6 hours of homework (e.g., reading and assignment preparation) to receive a grade of (C) average.

Attendance and participation requirements: Because this is an online course, your attendance is based on your online activity and participation. You are expected to log in to the course in Carmen every week. (During most weeks you will likely log in multiple times.) If you have a situation that might cause you to miss an entire week of class, please email ENR2100@osu.edu to discuss adjusted timelines.

COURSE MATERIALS AND TECHNOLOGIES

Textbooks

RECOMMENDED/OPTIONAL

• Environmental Science for a Changing World, 1st Edition (2013) or 2nd Edition (2014) or 3rd edition (2018), by Houtman, Karr, and Interlandi, published by W.H. Freeman. Any edition is acceptable for class. If you are interested in purchasing this textbook, we recommend purchasing from an online retailer such as Amazon. Any edition of the textbook is acceptable for the course as the textbook can serve as additional content and background information. There will be no assessments for the course solely based on textbook content.

Course technology
For help with your password, university email, 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 24/7.

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

**BASELINE TECHNICAL SKILLS FOR ONLINE COURSES**

- Basic computer and web-browsing skills
- Navigating Carmen: for questions about specific functionality, see the [Canvas Student Guide](https://www.coursera.org/).  

**REQUIRED EQUIPMENT**

- Computer: current Mac (OS X) or PC (Windows 7+) with high-speed internet connection
- Microphone: built-in laptop or tablet mic or external microphone
- (Recommended) Webcam: built-in or external webcam, fully installed and tested
- Other: a mobile device (smartphone or tablet) or landline to use for BuckeyePass authentication

**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 at [go.osu.edu/office365help](http://go.osu.edu/office365help).

**CARMEN ACCESS**

You will need to use BuckeyePass multi-factor authentication to access your courses in Carmen. To ensure that you are able to connect to Carmen at all times, it is recommended that you take the following steps:

- Register multiple devices in case something happens to your primary device. Visit the [BuckeyePass - Adding a Device](https://www.buckeye-pass.com/) help article for step-by-step instructions.
- Request passcodes to keep as a backup authentication option. When you see the Duo login screen on your computer, click “Enter a Passcode” and then click the “Text me new codes” button that appears. This will text you ten passcodes good for 365 days that can each be used once.
- Download the [Duo Mobile application](https://www.duobuild.com) to all of your registered devices for the ability to generate one-time codes in the event that you lose cell, data, or Wi-Fi service.

If none of these options will meet the needs of your situation, you can contact the IT Service Desk at 614-688-4357 (HELP) and the IT support staff will work out a solution with you.
If you experience connection problems with Carmen then the very first thing that you should try is another web browser such as Firefox, Explorer, Chrome, and Safari. If you are having difficulty opening a document or viewing an image or any other issue associated with this class, then it is most likely a problem with your computer, Internet connection or Internet browser. Everything for this class has already been thoroughly tested by thousands of students from all over the world to ensure that it works. Occasionally we do make mistakes, and when we do, we will always make it right.

GRADING AND FACULTY RESPONSE

How your grade is calculated

<table>
<thead>
<tr>
<th>ASSIGNMENT CATEGORY</th>
<th>PERCENTAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Midterm Exam</td>
<td>25%</td>
</tr>
<tr>
<td>1 Final Exam</td>
<td>25%</td>
</tr>
<tr>
<td>6 Poster Assignments</td>
<td>25%</td>
</tr>
<tr>
<td>4 Quizzes</td>
<td>25%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
</tr>
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*See course schedule for due dates.*

Based on the experiences of previous students who performed very well in our course, it is our recommendation that you spend 10-15 hours per week working in this class. We work very hard to provide you with every opportunity to succeed in this class. However, the ultimate responsibility to succeed rests with you the student.

Late assessments

**Assignments and Quizzes:** Assignments and Quizzes will be taken on Carmen within a flexible time frame of approximately 2 weeks. These can be completed at any time within the 2-week submission window. Submission after the due date for assignments or quizzes will result in a 10% deduction per day from the overall grade. The submission areas will automatically close after 10 days from the due date and will not reopen. Dr. Lower will not accept assignments or quizzes that are sent by email. All assignments must be uploaded to Carmen. All quizzes must be taken on Carmen.

**Exams:** Exams will be taken on Carmen within a flexible time frame of approximately 3 days. Exams can be taken at any time within these 3 days. Students will only be given 1 attempt to take an exam during these 3 days. **Late submissions will not be accepted and will result in a grade of 0%. Missed exams will result in a grade of 0%**. All exams must be taken on Carmen. Dr. Lower will not accept exams that are sent by email.
Extenuating circumstances sometimes occur. Students who miss an assessment due to a legitimate reason (e.g., emergency, hospital visit, extended illness) should contact their Dr. Lower at ENR2100@osu.edu to request permission to make-up an assessment. Dr. Lower will determine if an excuse is acceptable. If approved, the student must make up the missed assessment within a time frame specified by the instructor. Since this course has flexible due dates with assignments, quizzes and exams open for a period of days to weeks on Carmen, acceptable excuses typically entail lengthy illness, extended hospitalization or other serious issues.

The due date for each quiz, assignment and exam is provided on Carmen on the very first day of class to help students plan their semester. It is the responsibility of the student to know the due date for all quizzes, exams and writing assignments. We do this to accommodate students busy schedules. Students are expected to plan their semester accordingly. Students should not wait until the last hour to complete a quiz, exams or writing assignment. Technical glitches such as a bad Internet connection, faulty Internet browser, a computer that “crashes”, a battery that runs out of power, an obnoxious roommate, software malfunction, a flat tire, etc. are not acceptable excuses for missing a deadline. Dr. Lower does not accept writing assignments, quizzes or exams by e-mail, and these will be deleted and not graded. Assignments, quizzes and exams should always be completed and/or submitted to Dr. Lower using Carmen.

**Grading scale**

<table>
<thead>
<tr>
<th>Grade Range</th>
<th>Letter Grade</th>
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</thead>
<tbody>
<tr>
<td>93.00–100.0</td>
<td>A</td>
</tr>
<tr>
<td>90.00–92.99</td>
<td>A-</td>
</tr>
<tr>
<td>87.00–89.99</td>
<td>B+</td>
</tr>
<tr>
<td>83.00–86.99</td>
<td>B</td>
</tr>
<tr>
<td>80.00–82.99</td>
<td>B-</td>
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<tr>
<td>77.00–79.99</td>
<td>C+</td>
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<td>73.00–76.99</td>
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<tr>
<td>70.00–72.99</td>
<td>C-</td>
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<tr>
<td>67.00–69.99</td>
<td>D+</td>
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<td>60.00–66.99</td>
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<td>00.00–59.99</td>
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**Faculty feedback and response time**

- **Grading and feedback:** For writing and poster assignments, you can expect a grade and feedback within **10 days**.

- **Email:** Instructors check and reply to emails daily. Please email ENR2100@osu.edu as this is the email dedicated to the course. Please use your OSU email account to send emails to this account. We will send all email communications to your OSU email account.

**Fair assessment practices**

We understand that grades are important to our students and we strive to have clearly stated learning outcomes. We work hard to ensure that student grades are calculated in a fair and accurate manner. Things that we do to ensure that the assessments we administer are fair and accurate:

1. We use grading rubrics to score all writing assignments. These rubrics provide clear grading expectations for varying levels of mastery. Students are able to see a grading rubric before they start working on an assignment so that performance expectations are clearly understood.
2. We evaluate the outcomes of exams and quizzes by checking all questions and all answers after an exam or quiz closes to ensure that mistakes weren’t made. Typically, we want to see that each question was answered correctly approximately 80% of the time. This 80% threshold indicates that a question was a fair assessment of the course material. If this threshold is not reached, we do not count the question, or we offer bonus points to compensate students for the question.

3. We offer all students the chance to earn bonus points throughout the semester. These bonus points are added to a student’s grade to increase the grade and help to compensate students for mistakes that may have inadvertently been made by the instructor or student.

4. We use different kinds of assessments and each assessment type is weighted equally. We use Midterm Exam, Final Exam, Quizzes and Writing Assignments to calculate a student’s grade and each is worth 25% of a student’s Final Grade for the course. This has the impact of increasing a student’s course grade.

5. We encourage students to do well on exams and quizzes by making all exams and all quizzes open-book, by allowing students to take quizzes and exams from anywhere using Carmen and by having exams and quizzes open on Carmen for students to take for an extended period of time (e.g., 3 days, 2 weeks).

6. We accept late Quizzes and Writing Assignments with a small penalty of -10% deduction per day late. This ensures that a student would not receive an automatic grade of 0% for missing a Quiz or Writing Assignment.

7. We provide clearly stated learning outcomes for our learning modules. We help students reach their full potential by providing students with all lecture slides, all lecture videos, and all lecture transcripts. We provide study guides for all exams. We provide practice exam questions on Carmen for each learning module.

8. We use a grading scale that is inherently flexible. For example, a grade of B+ corresponds to 87.00 – 89.99%.

If you have questions about these practices or how your overall grade or grade for any individual assessment is calculated throughout the semester, you should contact Dr. Lower at ENR2100@osu.edu.

OTHER COURSE POLICIES

Academic integrity policy

POLICIES FOR THIS ONLINE COURSE
• **Quizzes and exams**: You must complete the midterm and final exams yourself, without any external help or communication. Weekly quizzes are included as self-checks without points attached.

• **Written assignments**: Your written assignments, including discussion posts, should be your own original work. In formal assignments, you should follow the provided course style to cite the ideas and words of your research sources. You are encouraged to ask a trusted person to proofread your assignments before you turn them in—but no one else should revise or rewrite your work.

• **Reusing past work**: In general, you are prohibited in university courses from turning in work from a past class to your current class, even if you modify it. If you want to build on past research or revisit a topic you've explored in previous courses, please discuss the situation with me.

**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*, 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:

• The Committee on Academic Misconduct web pages ([COAM Home](https://www.osu.edu/academicmisconduct/))
• *Ten Suggestions for Preserving Academic Integrity* ([Ten Suggestions](https://www.theonion.com/))
• *Eight Cardinal Rules of Academic Integrity* ([www.northwestern.edu/uacc/8cards.htm](https://www.northwestern.edu/uacc/8cards.htm))
Copyright disclaimer

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.

Statement on Title IX

Title IX makes it clear that violence and harassment based on sex and gender are Civil Rights offenses subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories (e.g., race). If you or someone you know has been sexually harassed or assaulted, you may find the appropriate resources at http://titleix.osu.edu or by contacting the Ohio State Title IX Coordinator, Kellie Brennan, at titleix@osu.edu

Your mental health

A recent American College Health Survey found stress, sleep problems, anxiety, depression, interpersonal concerns, death of a significant other, and alcohol use among the top ten health impediments to academic performance. Students experiencing personal problems or situational crises during the quarter are encouraged to contact Ohio State University Counseling and Consultation Service (614-292-5766; www.ccs.osu.edu) for assistance, support and advocacy. This service is free and confidential.

Principles of Community

This course adheres to The Principles of Community adopted by the College of Food, Agricultural, and Environment Sciences. These principles are located on the Carmen site for this course, and can also be found at https://go.osu.edu/principlesofcommunity. For additional information on Diversity, Equity, and Inclusion in CFAES, contact the CFAES Office for Diversity, Equity, and Inclusion (https://equityandinclusion.cfaes.ohio-state.edu/). If you have been a victim of or a witness to a bias incident, you can report it online and anonymously (if you choose) at https://studentlife.osu.edu/bias/report-a-bias-incident.aspx.

ACCESSIBILITY ACCOMMODATIONS FOR STUDENTS WITH DISABILITIES

Requesting accommodations

The university strives to make all learning experiences as accessible as possible. 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. 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. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. SLDS contact information: slds@osu.edu; 614-292-3307; slds.osu.edu; 098 Baker Hall, 113 W. 12th Avenue.

Several accessibility accommodations are already built into our course for all students (see list below). We work to provide these accommodations to all students and want to make sure all students have a positive learning experience in our course. Please send documentation from SLDS to ENR2100@osu.edu in order to establish any further accommodations needed during the semester.

1. **Extended Time (1.5x or 2x) for Exams:** SLDS-REGISTERED STUDENTS SHOULD EMAIL THEIR PLAN TO DR. LOWER. A student MUST send their completed SLDS paperwork to Dr. Lower: ENR2100@osu.edu and he will setup Carmen so extended time is provided to the student during an exam.

2. **Extended Time for Quizzes:** PROVIDED TO ALL STUDENTS. We provide all students with 6X-extended time for all quizzes. If any student requires more than 6X-extended time then they should contact Dr. Lower at ENR2100@osu.edu

3. **Note Taking Assistance/Recording:** PROVIDED TO ALL STUDENTS. We provide all lecture slides to all students on Carmen. We provide full typed transcripts for all lectures on YouTube for free for all students. Students can copy/paste the entire typed transcript anytime, anywhere using any word processing software (e.g., Microsoft Word) directly from YouTube for all lectures. These transcripts serve as written notes for all lectures.

4. **Computer/Word for Essay Exams:** WE DO NOT HAVE ESSAY EXAMS. We do NOT have essay exams. All exams consist of matching, multiple-choice, fill-in-the blank, true/false. All exams are taken on Carmen

5. **Scribe for exams and quizzes:** STUDENTS CAN TAKE EXAMS AND QUIZZES ANYWHERE. Exams and quizzes can be taken anywhere on Carmen. Students who are registered with Office of Student Life Disability Services (SLDS) and require a scribe should make their own accommodations with SLDS.

6. **Distraction Reduced Testing Space, Small Group Setting:** PROVIDED TO ALL STUDENTS. Students can take all quizzes and all exams on Carmen from anywhere. Students who are registered with Office of Student Life Disability Services (SLDS) and require distraction reduced testing space should make their own accommodations.

7. **Closed-captioning lectures:** PROVIDED TO ALL STUDENTS. Closed-captioning videos for all lectures are provided on YouTube for free to all students. The video documentaries from other organizations and institutions (e.g., The New York Times, PBS, NPR, Science, Nature, National Geographic) that we watch in class are closed captioned.

8. **Flexible due dates for quizzes, exams and assignments:** PROVIDED TO ALL STUDENTS. All quizzes, exams and assignments are open on Carmen for a period of days to weeks to accommodate students’ busy schedules. Students can complete these quizzes, exams or
assignments anytime while the window is open. Extenuating circumstances sometimes occur. Students who miss a due date for a legitimate reason (e.g., emergency, hospital visit, extended illness, unforeseen health issue) should contact Dr. Lower before the due date by email (ENR2100@osu.edu) to request additional time. Dr. Lower will determine if an excuse is acceptable.

## COURSE SCHEDULE

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<thead>
<tr>
<th>Week</th>
<th>Topic</th>
<th>Assessment</th>
<th>Due Date</th>
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</table>
| 1    | Introduction to Environmental Science| Optional: Carmen Scavenger Hunt  
Poster Assignment #1: Introduction to Scientific Posters Quiz               | Friday, August 28         |
<p>| 2    | Scientific Process                   | Optional: Plagiarism Quiz                                                 | Friday, September 4       |
| 3    | Persistent Pollutants                | Poster Assignment #2: Poster Title, Abstract, and References               | Friday, September 11      |
| 4    | Human Populations                    | Quiz #1                                                                    | Friday, September 18      |
| 5    | Energy and Ecosystems                | Poster Assignment #3: Completing a Poster Section                         | Friday, September 25      |
| 6    | Population Ecology                   | Quiz #2                                                                    | Friday, October 2         |
| 7    | Earth’s Major Climate and Biomes    | Midterm Exam                                                               | Friday, October 9         |
| 8    | Freshwater Resources                 | Quiz #3                                                                    | Friday, October 16        |
| 9    | Protecting Earth’s Freshwater       | Poster Assignment #4: Poster First Draft                                  | Friday, October 23        |
| 10   | Protecting Earth’s Atmosphere       | Quiz #4                                                                    | Friday, October 30        |
| 11   | Environmental Cost of Coal          | Poster Assignment #5: Poster Final Draft                                  | Friday, November 6        |
| 12   | Environmental Cost of Petroleum     | Poster Assignment #6: Virtual Poster Symposium                            | Friday, November 13       |</p>
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<tr>
<th>Week</th>
<th>Topic</th>
<th>Assessment</th>
<th>Due Date</th>
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<tbody>
<tr>
<td>13</td>
<td>Alternative and Renewable Energy</td>
<td>Poster Assignment #6: Virtual Poster Symposium</td>
<td>Friday, November 20</td>
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<td></td>
<td></td>
<td>Peer Reviews Due</td>
<td></td>
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<tr>
<td>14</td>
<td>Course Wrap Up</td>
<td>Final Exam</td>
<td>Friday, December 11</td>
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