

Environmental Science

ES 260, Spring 2024

3 credits

Mon, Wed, Fri 11:30-12:30

Sage 4232

Professor: M. Elsbeth (Misty) McPhee, Ph.D.
she, her, hers

I am an Associate Professor of environmental science and wildlife behavior at UWO. I received my Ph.D. from the University of Michigan where my research explored the effects of captivity on behavior in animals slated for release back into the wild. After receiving my Ph.D., I conducted field research in the Galapagos Islands and in southern Turkey, studying the Galapagos mockingbird and the Syrian hamster, respectively. I joined UWO's faculty in 2009. I am currently a member of the Whooping Crane Reintroduction Team and collaborate with many member organizations / institutions on research designed to increase the success of the whooping crane reintroduction program in Wisconsin.

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920-424-0644

Office hours*: Mon 9:00 - 10:30, Thurs 11:30 - 1:00



*Office hours can be held either virtually or in person. If you want to meet virtually, let me know when you want to meet and I will send you a Teams link. If none of my office hours work for your schedule, [book an appointment through Bookings](#).

I believe that every student can improve their skills, learn from their mistakes, and be successful in this course. Talking to me is the best way to deepen your understanding of the material and a great opportunity to improve your skills. I recommend that all students meet with me, regardless of performance.

This document contains the following information. There is a lot here, but you must read through it all. Each item in this list is a direct link to that section of the syllabus.

1. [Course information](#)
2. [Grades and assignments](#)
3. [Course schedule](#)
4. [Miscellaneous - but IMPORTANT - info](#)
5. [Diversity and inclusion in the classroom](#)
6. [Attendance policy and policies related to university approved absences](#)
7. [Campus resources](#)
8. [Titan Care Resources for Students](#)

1. Course information

Course description

This is a core course that will provide an overview of: 1) scientific principles on which studies of the environment are based; 2) current understandings of environmental problems from a scientific perspective; and 3) evaluation of scientific evidence. Prerequisites: Biology 105 or Chemistry 103 or Geography 121 or Geology 150 or Environmental Stds 101 or Environmental Stds 102 or Environmental Stds 103.

This course will be an intensive survey of a broad range of scientific disciplines. All of our readings will come directly from the scientific literature.

Specific course objectives

1. Gain a rigorous foundation in various scientific disciplines as they apply to environmental science, such as ecology, evolutionary biology, hydrology, and human behavior.
2. Provide a forum for discussion of current issues in environmental science.
3. Provide each student with a set of tools to use in applied situations such as careers that may involve environmental problems and/or issues.

Texts & Materials

Readings as listed in the [course calendar](#) and posted on Canvas.

Course expectations

This course is a 3-credit course, which means that students are expected to do at least 9 hours of course-related work or activity each week during the semester. This includes scheduled class time as well as time spent completing assigned readings, preparing written assignments, studying for tests and examinations, and other course-related tasks. This is a face-to-face course for which attendance is essential to success. The [course calendar](#) describes in detail what is expected for each day of the semester.

What it means to be a Environmental Studies student

Because of its broad interdisciplinarity, the Environmental Studies Program is both one of the most challenging and one of the most rewarding programs at the university. The key to meeting the challenges and gaining the rewards of our program is embracing the idea of *community*. Just as environmental problems cannot be solved without communities coming together in dialogue and action, our classes in ES require you to come together as a community characterized by open participation, mutual respect, and shared responsibility. *Participation* means actively contributing both your voice in class discussions and your work to build knowledge together. *Respect* means listening and making space for your peers' voices while also feeling free to disagree (as the best

forms of understanding often arise out of what begins as disagreement). And *responsibility* means holding ourselves accountable for being curious, engaged, and informed members of our shared community.

What we discuss in our classes is often difficult, but if we see each class as a community in which we are actively engaged, we will gain not only the rewards of knowledge and capacity for action, but a sense of feeling supported, both academically and emotionally – of confronting the problems we face together. Further, an environmental education obligates us to address issues we see and to collaborate with others to build relationships and try to make things better. This means embracing your major as *your* program, helping it be the best version of itself, and getting involved outside of the classroom on campus and beyond. Then you'll truly grow!

2. Grades and assignments

Your grades will be based on five major things (explanations below).

1. Quizzes	10%
2. In-class exercises	10%
3. Reading assignments	
reading responses	25%
class discussion	20%
peer editing	5%
4. Exams	28%
5. Career plan	2%

Below are the ranges for each letter grade.

% of total points	Grade	% of total points	Grade
94-100	A	73-76	C
90-93	A-	70-72	C-
87-89	B+	67-69	D+
83-86	B	63-66	D
80-82	B-	60-62	D-
77-79	C+	< 59	F

Grade descriptions

1. **Class participation** will be graded based on attendance and overall participation and engagement in the course. Obvious signs of engagement are questions and participation in discussion; other signs are coming to talk to me in office hours or before/after class; and finally, just general attitude and attendance in the classroom.

In-class participation points will be given as follows:

- 1 = contributes multiple times in ways that reflects a thoughtful and thorough reading
- 0.9 = contributes at least once in a way that reflects a thoughtful and thorough reading
- 0.8 = contributes at least once but the contribution does not show that you've read the material *or*
didn't speak up but showed engagement and thought in written work
- 0.7 = in class but doesn't participate in any meaningful way
- 0.6 = in class but not paying attention at all (e.g., sleeping, leaving the room frequently)
- 0 = not in class or in class but using a device (phone, computer) for non-class activities or while someone else is speaking

Your active participation is the key to your learning the material and to the success of the course—both for you as an individual and for the class as a whole.

2. There will be 10 quizzes throughout the semester, given at the beginning of class. See the course calendar for dates. These will always be on material from the most recent lectures, so I strongly recommend you go over your notes immediately after each class and immediately prior to the following class.

Quizzes can NOT be made up.

3. We will have some in-class exercises. These are meant to get you working with others and thinking about the material in a more hands-on way. These will be graded based on your engagement more than whether or not you got the correct answer.
4. For each unit, I will assign you two papers. You will *read both papers* and provide discussion questions for each. You will also write a full response to one of them (your choice).

These assignments are designed to teach you two things: (1) how to read and interpret the scientific literature and (2) how to write scientifically. The instructions are very specific and you must follow them to the letter in order to receive full points.

[Detailed instructions and rubric](#) are posted on Canvas.

To help with your writing, we will have a peer editing session for the first full response (Planetary Boundaries). You must bring three hard copies of your response to class. Do **NOT** put your name on the response, only your ID #.

5. There will be three **exams**. You will be given a study guide one week prior to the exam. The exam will consist of approximately 10 questions taken directly from that study guide.
6. **Extra Credit.** I highly encourage participation in campus events and lectures. For example, throughout the fall there will be a lot of events to celebrate Earth Charter and they will likely count for extra credit. (In fact, by the first day of class, you tell me what your favorite dessert is, I'll add two points to your first exam.) An [extra credit form](#) is posted on Canvas.

A basic description will add 1 point to your overall course grade; a well-written description with a critique and discussion of how the topic fits into ES 260 will add 2 points.

Notes:

- These points will not show up on the grade sheet as I won't grade them until the end of the term.
- I will not grade them if the instructions are not followed.
- I will only grade extra credit papers if **all of your regular assignments** have been turned in.
- You can turn in a maximum of 5 extra credit events.

7. Due dates for all assignments are listed on Canvas and on the [course calendar](#).

3. Course schedule

[Click here for the list of assignments and due dates.](#)

4. Miscellaneous – but important – comments

- **Email communication and Canvas** will be used frequently throughout the semester to communicate between Instructors and Students. Emails constitute legal, official University communication. Not checking your email is not an excuse for performance problems in the class. Contact Academic Computing or any Campus Computer Lab supervisor for assistance with email and Canvas.
- The University has a Google Account and many of the course materials are created in Google Docs or Google Sheets. I cannot share any Google documents or Canvas links with a non-UWO account so please use your UWO email account to access course materials.
- **Late policy.** You are allowed to turn in assignments — other than exams— after the due date. However, I don't guarantee it will get graded before the end of the term. Do not complain about timing – if you were late, I have no obligation to be timely. The maximum grade you can receive for a late submission is 80%; it will appear as a 0 on the grade sheet until I grade it.
- I expect you to **act like a professional**. This means:
 - Unapproved cell phone use will NOT be permitted in our classroom. If your cell phone goes off or you text during class, you will lose 2 points on the next exam. If my phone goes off in class, everyone *who was in class* gets an extra two points on the most recent exam. I have posted on Canvas a more detailed [policy on devices in the classroom](#).
 - **Laptops:** you are more than welcome to use laptops in class to take notes, but you are NOT to use them for any other purpose. If I see you using your laptop for anything other than note-taking, I will ask you to close your computer and you lose 2 points on the next exam.
 - Do NOT begin to pack up while I or a classmate is still talking. If you do, I will deduct points from your overall participation grade.

- Treat your classmates with respect in classroom discussions: addressing controversial issues carefully and thoughtfully; giving your full attention to the task at hand; not engaging in side discussions or falling asleep.
- If your religious beliefs, military service, serious illness, or other extenuating circumstances affect your ability to engage in class, please let me know so I can accommodate your needs.
- Students with disabilities are welcome in this course. Please contact me in the first week of class so that we may arrange all possible accommodations ahead of time.
- **Academic honesty** policies are clearly defined at this University and all students are expected to abide by them. Penalties for violations are severe in this course. Cheating on an exam or plagiarism on a written assignment at a minimum leads to zero, with no opportunity for a make-up or extra credit. A second offense is an F in the course and a report to the Dean of Students.

Artificial Intelligence (AI) is not permitted for any stage or phase of work in this class. All written work submitted for this course must be completed by you, personally. You may not use AI tools to draft your work, even if you edit, revise, or paraphrase it. **My goal in assigning you the Reading responses is to see that YOU understand the paper, not that the computer can generate your understanding.** Use of artificial intelligence (AI) to generate text is strictly prohibited but you may use simple word processing tools to update spelling and grammar in your assignments. Submission of any content generated by AI will be considered a violation of academic integrity, including any AI-generated work that you have summarized or edited. The use of unauthorized AI tools will result in a 0 on the assignment for which AI was used.

If I see anything that I perceive as AI-generated text, we will move to doing all writing in-class.

- Students are advised to see the following URL for disclosures about essential consumer protection items required by the Students Right to Know Act of 1990:
<https://uwosh.edu/financialaid/consumer-information/>

5. Diversity and Inclusion in the Classroom

Everyone is welcome in this class, exactly as you are. All races, ethnicities, nationalities, genders, sexualities, religions, abilities, and political affiliations are welcome here. We treat each other with respect, and we listen before we judge. Disagreement with ideas and positions is welcome. Vilification of people, harmful stereotypes, and failure to listen with openness are not welcome.

I recognize that UWO has many students who are also parents. To that end, [here is my policy on children in the classroom](#). I ask that all students work with me to create a welcoming environment that is respectful of all forms of diversity, including diversity in parenting status.

6. Attendance policy and policies related to University-approved absences

Attendance in this class is key to a good grade. If you miss a lecture, you need to get the notes from a classmate and then come see me with questions.

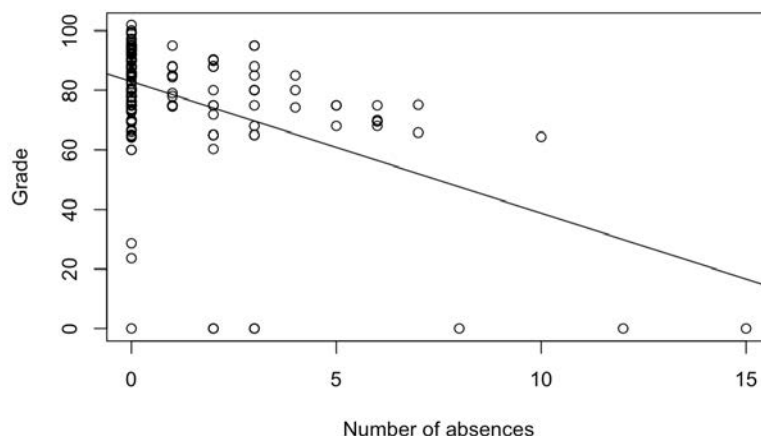
Material can only be up for University-approved absences. These include:

- exposure to or contraction of COVID-19
 - If you are exposed and choose to attend class, I *strongly encourage* (i.e., beg!) you to wear an appropriate face mask that covers your mouth and nose.
 - Please visit the [Titans Return web page](#) for more information on COVID policies on campus.
- other severe illness and/or hospitalization
- University-sanctioned athletic activity
- concussion

In any of these cases, you must

- contact the Dean of Students (DOSOutOfClass@uwosh.edu) and request an out-of-class letter
- contact me as soon as possible to arrange make-up requirements; the requirements will be determined based on the pre-class assignments and in-class activities that occur for the class you miss. The responsibility of arranging this is yours.
- See my [Make-up Policy for University-approved Absences](#).

Overall, if you're doing well on the assignments and are engaged in discussions, one or two absences probably won't matter in the long run. If you miss multiple lectures and miss *any* discussions, that will significantly hurt your grade. To support my argument, look at this graph showing how grades decline as the number of absences increases. These data are from my classes over the past few years.



7. Academic resources

[Click here](#) or see Canvas for information on resources available on campus to support academically.

8. Titan Care Resources for Students

[Click here](#) or see Canvas for information on other support resources for students.

This is a live document - please check back regularly for updates

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Tentative lecture and assignment schedule

Date	Topic	In-class activity	Assignments due by class time
Mon, 5 Feb	What is environmental science?	Lecture and discussion	
Wed, 7 Feb	Planetary boundaries	<i>watch movie on Planetary Boundaries</i>	
Fri, 9 Feb	Planetary boundaries	Discussion Write reading response in-class	<u>Read</u> : Richardson et al. 2023
Mon, 12 Feb	The scientific process	Quiz #1 In-class exercise: <i>Disappearing Iguanas</i>	
Wed, 14 Feb	The scientific process	In-class exercise: <i>Disappearing Iguanas</i> , cont.	
Fri, 16 Feb	The scientific process	In-class exercise: <i>Disappearing Iguanas</i> , cont.	<u>Due by 10:30am</u> : <i>Disappearing Iguanas</i>
Mon, 19 Feb	Human populations	Lecture	
Wed, 21 Feb	PB1: Climate change	Lecture	
Fri, 23 Feb	PB1: Climate change	Quiz #2 Lecture	
Mon, 26 Feb	PB1: Climate change	Lecture	

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Fri, 23 Feb	PB1: Climate change	Quiz #2 Lecture	
Mon, 26 Feb	PB1: Climate change	Lecture	

Wed, 28 Feb	PB1: Climate change	Lecture	
Fri, 1 Mar	PB1: Climate change	Quiz #3 Peer editing of reading responses	<u>Watch:</u> Climate Solutions 101, videos 3-5 <u>Read:</u> TBD <u>Write:</u> reading response to the paper of your choice, discussion question for the other paper, discussion question for each of the three videos Bring three hard copies of your response to class (do NOT put your name on your response, only your ID #)
Mon, 4 Mar	PB1: Climate change	Discussion of journal articles	
Wed, 6 Mar		Catch up and overview	
Fri, 8 Mar		Exam #1	<i>This exam covers all material through 4 March</i>
Mon, 11 Mar Wed, 13 Mar Fri, 15 Mar	PB2: Freshwater	Lecture	
Mon, 18 Mar	PB2: Freshwater	Quiz #4 In-class exercise: <i>Unsustainable Use of the High Plains Aquifer</i>	<u>Read:</u> material posted on Canvas Bring either hard or e-copy of exercise to class.
Tues, 19 Mar	Robin Wall Kimmerer, evening event (optional but <i>highly</i> recommended)		
Wed, 20 Mar	PB2: Freshwater	Discussion of journal articles	<u>Read:</u> TBD <u>Write:</u> reading response to <i>one</i> of the papers discussion question for <i>both</i> papers
Fri, 22 Mar	PB3: Biogeochemical flows	Lecture	
24 - 29 Mar	<i>Spring Break!</i>		
Mon, 1 Apr	PB3: Biogeochemical flows	Lecture	

Wed, 3 Apr	PB3: Biogeochemical flows	Lecture	
Fri, 5 Apr	PB3: Biogeochemical flows	Discussion of journal articles	<u>Read:</u> TBD <u>Write:</u> reading response to <i>one</i> of the papers discussion question for <i>both</i> papers
Mon, 8 Apr	PB4-6: Novel entities, Atmospheric aerosol loading, and Stratospheric ozone depletion	Quiz #5 Lecture	
Wed, 10 Apr	PB4-6: Novel entities, Atmospheric aerosol loading, and Stratospheric ozone depletion	Lecture	<u>Due:</u> Career Plan
Fri, 12 Apr	Novel entities Atmospheric aerosol loading Stratospheric ozone	Discussion of journal articles	<u>Read:</u> TBD <u>Write:</u> reading response to <i>one</i> of the papers discussion question for <i>both</i> papers
Mon, 15 Apr	Careers in environmental science	Quiz #6 Careers, catch up, and overview	
Wed, 17 Apr		Exam #2	<i>This exam covers all material from 11 March through 15 April</i>
Fri, 19 Apr Mon, 22 Apr	PB7: Biosphere integrity	Lecture	
Wed, 24 Apr	PB7: Biosphere integrity	Quiz #7 Lecture	
Fri, 26 Apr Mon, 29 Apr	PB7: Biosphere integrity	Lecture	
Wed, 1 May	PB8: Land system change (biomes) [podcast] PB9: Ocean acidification	Quiz #8 Lecture	<u>Watch:</u> podcast on PB 8, Biomes

Fri, 3 May	Biodiversity Biomes Ocean acidification	Discussion of journal articles	<u>Read:</u> TBD <u>Write:</u> reading response to <i>your chosen paper</i> discussion question for <i>both</i> papers
Mon, 6 May	Human behavior	Lecture	
Wed, 8 May	Human behavior	Quiz #9 Lecture	
Fri, 10 May	Human behavior	Lecture	
Mon, 13 May	Human behavior	Discussion of journal articles	<u>Read:</u> Low 2014 <u>Write:</u> reading response to Low 2014
Wed, 15 May		Quiz #10 Catch up and overview	
Fri, 17 May		Exam #3	<i>This exam covers all material from 19 April through 15 May</i>

Wed, 28 Feb	PB1: Climate change	Lecture	
Fri, 1 Mar	PB1: Climate change	Quiz #3 Peer editing of reading responses	<u>Watch</u> : Climate Solutions 101, videos 3-5 <u>Read</u> : TBD <u>Write</u> : reading response to the paper of your choice, discussion question for the other paper, discussion question for each of the three videos Bring three hard copies of your response to class (do NOT put your name on your response, only your ID #)
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Fri, 5 Apr	PB3: Biogeochemical flows	Discussion of journal articles	<u>Read:</u> TBD <u>Write:</u> reading response to <i>one</i> of the papers discussion question for <i>both</i> papers
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Fri, 10 May	Human behavior	Lecture	
Mon, 13 May	Human behavior	Discussion of journal articles	<u>Read:</u> Low 2014 <u>Write:</u> reading response to Low 2014
Wed, 15 May		Quiz #10 Catch up and overview	
Fri, 17 May		Exam #3	<i>This exam covers all material from 19 April through 15 May</i>