

Environmental Science Summer 2023 Syllabus

General Information

Instructor: Dr. Deanna Soper
Office Hours: Upon Request - send an email
E-mail: dsoper@udallas.edu

Course Description

An introduction to environmental science, this course covers basic ecology of ecosystems and the effects and consequences of human activity on ecosystems. Students investigate various issues and propose solutions. This course will have a particular emphasis on global climate change and its impact on biodiversity, ecosystem collapse, and human populations. In this course you will Read, Watch, Listen, Discuss, and Synthesize each week. You will begin by completing your reading assignments, then you will watch (or listen for your podcast week) a digital source from experts in the field of the topic of the study for that week, you will listen to lectures that will be posted, you will discuss what you have learned with your peers in a course discussion, then you will synthesize your thoughts into a journal entry.

Course Rationale

Public concern for the environment is always in the news. Policies, which value and conserve our natural resources, need to be created by informed citizens and elected officials. The course reviews major environmental issues and the science behind them. Topics include:

- ✓ Sustainability
- ✓ Environmental systems
- ✓ Renewable & nonrenewable energy technologies
- ✓ Pollution (air, water, soil)
- ✓ Waste management
- ✓ Conventional and sustainable food production
- ✓ Environmental health
- ✓ Biodiversity
- ✓ Environmental Laws & Policies

Student Learning Outcomes

Students who successfully complete this course should be able to:

- ✓ understand the scientific method, data collection, and analysis
- ✓ be able to identify biogeochemical cycles and steps within each cycle
- ✓ understand and be able to interpret climatological data that contributes to our understanding of global climate change

- ✓ understand population dynamics and how models can assist in making predictions
- ✓ identify community structures, trophic levels, and species interactions
- ✓ understand how ecological parameters (biotic and abiotic) influence biodiversity observed in an ecosystem
- ✓ understand how the health of the environment influences human health & resources
- ✓ understand human impact on the environment

Students Requiring Special Accommodations

If you are in need of academic support because of a documented disability (whether it is psychiatric, learning, mobility, health related, or sensory), you may be eligible for academic accommodations through disability services for students.

Required Textbooks

Fisher, Matthew (2018) *Environmental Biology*. Openstax:

<https://openoregon.pressbooks.pub/envirobiology/>

Mann, Michael E. & Kump, Lee R. 2015. *Dire Predictions Understanding Climate Change*. 2nd Edition. Penguin Random House. New York, NY. ISBN: 978-1-4654-3364-0

*In addition, because this is a virtual course a computer, stable internet connection, and a webcam is **required** for this course. During class discussions and exams you will be required to use your webcams.

Required Technology & Participation

A computer with good internet access, a working webcam, and the ability to unmute and speak are required. During synchronous class periods you must be in a quiet environment and give full attention to the class and instructor. If you cannot do so points may be deducted. In addition, participation for the entire class period is required. If you are unable to attend the whole period, points will be deducted in accordance with the amount of time spent in attendance. Class

Discussion Zoom Link: Join Zoom Meeting

<https://us06web.zoom.us/j/6479049786>

Meeting ID: 647 904 9786

One tap mobile

+13462487799,,6479049786# US (Houston)

+12532050468,,6479049786# US

Course Schedule

Week 1: Theme: Introduction to environmental science, process of science, and science basics

Readings: *Dire Predictions*: Pages 6-117

Environmental Biology: Chapters 1-3

Washington Post - April 2022 - "Tree Rings From Centuries Past May Help Reveal a Warming Planet's Future" See:

<https://www.washingtonpost.com/climate-solutions/2022/03/23/tree-rings-centuries-past-may-help-reveal-warming-planets-future/>

Chapter 1 - *A Tree Story* - See PDF in Perusall - Make comments

Digital Activity: Listen to the Podcast "The Wisdom of Trees" See:

<https://think.kera.org/2020/09/04/the-wisdom-of-trees/>

Lectures: Chapter 1: Introduction to Environmental Science

Chapter 2: Science, Matter, and Energy

Chapter 2-3: Basics of General Biology and Ecology

Chapter 3: Biogeochemical Cycles

Class Discussion: SYNCHRONOUS - required virtual participation - Wednesday 2-4pm

Assignments Due: Digital Summary due by Wednesday at 2pm via Brightspace; Perusall Main Comments (2) due by Friday 5pm; Perusall peer comment on the text is due by Sunday at 11:59 pm.

Week 2: Theme: Population Dynamics & Human Impact on Environments

Readings: *Dire Predictions* Pages 118-149

Environmental Biology: Chapter 4

Texas Monthly, September 2021. See:

<https://www.texasmonthly.com/travel/behind-the-fight-to-save-the-gulfs-spectacular-coral-reefs/>

Digital Activity: Watch *Living in the Futures Past*

Rent on Amazon:

<https://www.amazon.com/Living-Futures-Past-Jeff-Bridges/dp/B07JQ6MBVR>

Lectures: Chapter 4: Population Dynamics

Chapter 4-5: Community Ecology & Biodiversity

Class Discussion: SYNCHRONOUS - required virtual participation - Wednesday 2-4pm

Assignments Due: Digital Summary due by Wednesday at 2pm via Brightspace; Perusall Main Comments (2) due by Wednesday at 2pm; Perusall peer comment on the text is due by Saturday at 11:59 pm.

Week 3: Theme: Biodiversity

Readings: *Dire Predictions* Pages 150-169

Environmental Biology: Chapters 5-6

National Geographic (May 2020):

<https://drive.google.com/file/d/1anL3h3W1-wkC3arYxF9SvImapW-MIobe/view?usp=sharing>

Digital Activity: Watch *Sharks of Lost Island* and *The Hope* - documentary about Jane Goodall (Both on Disney+)

Lectures: Chapter 5: Biodiversity

Chapter 5-6: Implications of Biodiversity

Assignments Due: Digital Summary due by Wednesday at 2pm via Brightspace; Perusall Main Comments (2) due by Wednesday at 2pm; Perusall peer comment on the text is due by Saturday at 11:59 pm; Nature Journal Exercise Due Saturday by 11:59pm

Nature Journaling Exercise Read this article:

<https://drive.google.com/file/d/1jzX6Ck55rxg11AmuROgybNXwLiXGQBcS/view?usp=sharing>

Then, follow these instructions:

<https://docs.google.com/document/d/1vfGnwXqEzZ0CCSSrKgLLCqb5TS-cjSkOkJbKYtwYvs/edit?usp=sharing>

Another example of a previous student's work can be [found here](#).

MIDTERM EXAM: Available Friday 8am - 8pm on Brightspace

Week 4: Theme: Environmental Health, Water, & Food

Readings: *Dire Predictions* Pages 170-194

Environmental Biology - Chapters 7-8

Brown (2016) Poison in the Water. See:

https://drive.google.com/file/d/1sx_VmhFkseUh93wCkUyK5PgBPjNpNBI6/view?usp=sharing

Update - ABC News Article - watch the embedded news video! -

<https://abcnews.go.com/US/water-crisis-plagues-flint-residents-decade/story?id=98724950>

Digital Activity: Watch *Chasing Ice* (Can access through a number of online streaming rental services - use Google!)

Lectures: Chapter 6/7: Environmental Health

Chapter 7: Water Availability & Use

Chapter 8: Food Availability & Hunger

Class Discussion: SYNCHRONOUS - required virtual participation - Wednesday

2-4pm** I will be in the field at this time, I *may* need to cancel this, but I want you all to plan as if it will occur. If it does not occur, an alternative assignment will be assigned.

Assignments Due: Digital Summary due by Wednesday at 2pm via Brightspace;

Perusall Main Comments (2) due by Wednesday at 2pm; Perusall peer comment on the text is due by Saturday at 11:59 pm

Week 5: Theme: Agriculture & Energy Use

Readings: *Environmental Biology* - Chapters 9 & 11

"A Time To Act" and "Strengthen Climate Adaptation Research Globally" both from the June 2022 *Science* publication.

Lectures: Chapter 9: Soil & Agriculture

Chapter 11: Energy Use

Digital Activity: *Kiss the Ground* can be found on Netflix

Class Discussion: SYNCHRONOUS - required virtual participation - Wednesday 2-4pm

Assignment Due: Perusall Main Comments (2) due by Wednesday at 2pm; Perusall peer comment on the text is due by **Friday** at 11:59 pm; Journal #5 - Summative Journal - Due Friday by 5pm via Brightspace Dropbox

FINAL EXAM: Available Friday 8am - 8pm

Grading Policy

Please note: Late assignments will not be accepted and exams will not be able to be taken at a later date/time unless a unique and severe circumstance is present. If such circumstance is present, you should notify me immediately and be able to provide written documentation of the event. Also, I do not give extra credit (or make up extra/alternative assignments) because you have performed poorly on the assignments that are put forth in this document. I generally do not give extra credit at all, but when I do it is because a unique opportunity has arisen (i.e. guest speaker) that students would benefit from. However, I NEVER give extra credit because students have performed poorly on an assignment/quiz/test.

Perusall (10 per entry)	50 pts
Participation in Class Discussions (10 per class)	50 pts
Digital Activity Summaries (10 per entry)	50 pts
Summative Journal Assignment	50 pts

Exams (2 total)	200 pts
Total Points Possible	400 pts
Grading Scale	

93 – 100	A	73 – 76.9	C
90 – 92.9	A-	70 – 72.9	C-
87 – 89.9	B+	67 – 69.9	D+
83 – 86.9	B	63 – 66.9	D
80 – 82.9	B-	60 – 62.9	D-
77 – 79.9	C+	<60	F

Perusall Activity:

Perusall is a free software that has been integrated into Brightspace. I have uploaded the readings that you will need to complete AND make comments directly on. Your peers will be able to read and respond to your comments and you will need to read their comments and respond to them. You are to make at least 2 comments on the text itself AND 1 Peer Comment. This means you must respond to at least 1 of your peers. These comments and responses must be substantial. This means you can't just say "Oh that is cool." Or "Good observation!". A substantive comment will make connections between the content you have learned about from other sources (i.e. podcast, other readings, the lecture) and what you are reading in the text or your peer's comments.

Week 1

Read Chapter 1 of "Tree Story" Written by Dr. Valerie Trouet. A PDF copy of this chapter is available on Perusall.

Week 2

Read: *Texas Monthly*, September 2021. See:

<https://www.texasmonthly.com/travel/behind-the-fight-to-save-the-gulfs-spectacular-coral-reefs/> Make comments on the PDF copy in Perusall.

Week 3

Read: *National Geographic* (May 2020):

<https://drive.google.com/file/d/1anL3h3W1-wkC3arYxF9SvImapW-MIobe/view?usp=sharing> Make comments on the PDF copy in Perusall.

Week 4

Read: Brown (2016) *Poison in the Water*:

https://drive.google.com/file/d/1sx_VmhFkseUh93wCkUyK5PgBPjNpNBI6/view?usp=sharing

Week 5

Read: "A Time To Act"

(https://drive.google.com/file/d/1DRqVINoedNJxJUGkvsEM_xmKH9BAeJKb/view?usp=sharing)

[usp=sharing](https://drive.google.com/file/d/1Tkw6Kzw9iLeuufE2hC0pmD8V4z7360Y4/view?usp=sharing)) and “Strengthen Climate Adaptation Research Globally” (<https://drive.google.com/file/d/1Tkw6Kzw9iLeuufE2hC0pmD8V4z7360Y4/view?usp=sharing>) both from the June 2022 *Science* publication. Make comments on the PDF copy in Perusall.

Digital Summaries

You will watch the assigned video or listen to the assigned podcast. Then, write a 500 word summary and reflection of the source(s) assigned. After summarizing the information presented, reflect on what this piece has taught you and how it might have altered or reinforced your pre-existing idea of the topics presented. You will upload your typed document to Brightspace via the Dropbox set up.

Summative Journal Assignment

The summative journal assignment should be typed in Google Docs or Word and then a digital copy of the document uploaded to the Brightspace dropbox. The journal assignment should be single-spaced with double-spacing between paragraphs, and written using an 11 or 12 font size. The Journal will be which should be 1,500 - 1,800 words. It will not be written in fragments but will follow the conventions of English composition, including proper grammar and syntax. Students will be expected to keep good notes from the lectures, readings, digital activities, and class discussions. Elements of all of these should find their way into your journal, drawing comprehensively from all of these to make connections to your personal perspective and experience. *Active participation in the class discussions is required and integration of class discussion content in journal entries is necessary.* Students are required to submit a Word Document of the journal entry to the Brightspace Dropbox by the due date and time.

The idea of the journal is for each student to integrate lecture content, reading assignments, digital activities, and class discussion into their personal view of environmental science. Students will accomplish this by reviewing class content and noticing what strikes one’s attention, and then “staying with” that idea or insight and developing it in dialogue with one’s own understanding and one’s own life experiences. The journal will be a forum for you to write down your thoughts as they occur to you in dialogue with the readings, and to begin to achieve a personal synthesis of ideas springing from multiple sources – readings, lectures, class discussions, films, and life experience. The aim of the course is thus for each student to come to a deeper understanding of course themes through reading and reflection, with the journal serving as a mechanism upon which you will demonstrate your own way of taking up the course themes and readings.

The summative journal will include each of the following elements:

- Summarize the information learned throughout the course
- Reflect on how your ideas coming into the course have changed as the result of your interaction with the course content through all mediums (lecture, discussions, digital assignments, readings... etc.)

-Reflect how your individual behaviors will be altered as a result of gaining a deeper understanding of the environment

*To do the above, it would be prudent to pull quotes from your class notes, discussion notes, notes taken during watching the documentaries, listening to the podcast, and reading the articles assigned as a way to reflect on the development of your thought process. You should also be touching on the elements of the course that were most influential to the development of your understanding of environmental science and should touch on *all* of the sources of information: Class Discussions, Lectures, Readings, and Digital Activities.

Exams

Exams will assess understanding of course concepts and topics after reinforcement through lecture, discussions, and reading assignments. The subjects of exam questions may come from class discussion, the textbook and reading assignments. The exams may consist of multiple-choice questions, matching, and short answer questions. In accordance with University policy, the final exam will be comprehensive. The use of Proctorio is **required** for both the midterm and the final exam. The program costs 5\$ per use, please be prepared to pay that cost. It will record your screen in addition to recording you by use of your webcam (which is required for the course and for the test). The following are ***strictly prohibited*** during the testing:

1. Use of cell phones or ANY media.
2. Talking of any kind, even to oneself is not allowed. You must remain silent as if you were taking the test in a classroom.
3. The use of any paper, sticky notes, cheat sheets, or other assistance.

Attendance Policy

Attendance is ***mandatory*** for synchronous class discussions (conducted via Zoom). If you miss a class discussion ***for any reason*** you will lose points for that day (see point structure). For the asynchronous portion, turning assignments in is considered your attendance. If a student misses three or more assignment deadlines the student may be removed from the course.

Dr. Soper will adhere to the University attendance policy. Please refer to the student handbook to read this policy.

General Rules and Expectations for the Course

1. Students are required to read the assigned readings.
2. Assignments will be completed by the specified deadlines. The instructor is under no obligation to accept unexcused late assignments and can assign a score of zero points. Late assignments accepted by the instructor due to an excused absence may be penalized 50% of the assignment's total value.
3. Students will conduct themselves in a courteous and responsible manner in class and keep scholastic integrity (see Academic Honesty).

4. Students have one week to challenge the grade earned on an assignment, presentation, exam, or quiz. After one week, the grade is final.
5. Students are expected to check their University E-mail accounts and Brightspace on a regular basis for additional messages related to the course. Please use University E-mail accounts when communicating with the instructor electronically.
6. Students who are performing unsatisfactorily in the course are expected to discuss their performance with the instructor. The instructor is available by appointment outside of class to review course material and discuss strategies to improve performance.
7. The course schedule is subject to change. Deletions and substitutions in the syllabus schedule may occur.

Academic Honesty

Students are expected to maintain academic honesty through avoiding plagiarism and cheating. See the University of Dallas' policy on Academic Honesty at:

http://www.udallas.edu/about/university-policies/academic_policies/academic-honesty.php

Change of Final Grade

The only reason for which a change of final grade may be requested **is an error** in the original recording of the grade. **(THIS MEANS DO NOT E-MAIL ME AFTER FINAL GRADES HAVE BEEN GIVEN REQUESTING EXTRA CREDIT OR A GRADE BUMP.)** Students should check their transcripts and consult with the instructor if there is a question of error. The appeal for a change of grade must be made in the first three weeks of the semester following that in which the course was taken.