Syllabus: BIO 105N-2: Environmental Biology

Course Information

Course Title: Environmental Biology
Room: MB 03
Course Prefix/Number: Bio 105N-2
Semester: Fall 2025
Class Days/Times: T/R 5:15pm-7:45pm
Credit Hours: 4
Zoom Link: https://us06web.zoom.us/j/88286077691

Instructor Information

Name: Emily Lucas
E-mail: elucas@tocc.edu OR elucas@apachecollege.edu
Office location:
Office hours: Wed 12:00-1:00pm; Tues/Thurs 10:00-12:00pm or by appointment

Course Description

Fundamentals of ecology and their relevance to human impact on natural ecosystems. Includes ecosystem structure and function, population dynamics, and human impacts on air, water, land, and biodiversity.

Student Learning Outcomes

After completing this course, students will be able to:
1. Synthesize ecological principles into an understanding of how the Earth functions.
2. Apply ecological principles to understand human impacts on the environment.

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3. Evaluate the scientific basis of environmental issues.
4. Describe possible causes and analyze potential solutions to current environmental issues.
5. Demonstrate skills necessary for life-long learning, critical examination, and
personal decisions relative to environmental biology.

Course Structure

This course generally consists of the following elements:
• Seven short writing assignments and five in-class labs with corresponding assignments
• Class discussions (participation is a part of your final grade)
• Midterm Paper
• Final Project
Assignments are due Thursday of the following week by 11:59pm.

Course Outline

I. Environmental Biology
        A. Science
        B. Scientific method
II. Matter, Energy, and Life
III. Ecosystems and the Biosphere
IV. Community and Population Ecology
V. Conservation and Biodiversity
VI. Environmental Hazards and Health
VII. Water
VIII. Food and Hunger
IX. Agriculture
X. Air Pollution and Climate Change
XI. Energy

Course Learning Materials and Textbook Information

This course textbook is Environmental Biology by Matthew R. Fisher. This is a free open-source textbook which can be found at https://openoregon.pressbooks.pub/envirobiology/. If you would like to read the book off-line, be sure to download it onto your computer. You will need to open the document in Acrobat Reader or Microsoft Edge. All other readings will be posted to Canvas.

Accountability: (defines grade expectations and accountability for coursework; emphasizes students' responsibility for original work and proper citation; stresses punctuality, participation, and consequences of absences)

Policies and Expectations

Attendance: Attendance is required for this class. You're here to learn, and being present is the best way to do that! However, I also understand that sickness/personal matters/cultural events/life can arise. Please send me an email as soon as possible letting me know if you are unable to attend class. Sharing the reason for your absence is useful (help me help you!) but not mandatory. It is your responsibility to make up missed course material, but I am happy to work with you to do so.

Late Assignments: Please reach out to me (as far ahead of time as is possible) if you think you are going to be late turning in an assignment. I am very understanding about late work as long as you communicate with me. Otherwise, for 5pt assignments, I subtract half a point per day, and for larger assignments, 5% is subtracted per day. Again, help me help you. I want you all to do well and enjoy learning, so let's work together to make that possible.

Cite Your Sources: Please properly cite your sources! At the beginning of the course, we will go over how to do so. I do not have a particular format (APA, MLA, etc.) that I require, but sources need to be cited or it is considered plagiarism

Cell Phone Policy: Please keep cell phones/other electronic devices silenced and placed away. If you think you might need to use your cell phone during class for personal emergencies (or everyday needs like childcare), please send me an email ahead of time.

AI/ChatGPT: I am firmly against the use of ChatGPT/AI in an academic setting. Again, you are here to gain the skills and knowledge to help you move ahead in your professional and educational lives, including problem-solving, critical thinking, and research abilities. Relying on ChatGPT is antithetical to all the above. Additionally, it's bad for the very environment you're here to learn about (https://earth.org/environmental-impact-chatgpt/). For these reasons, I ask that students not use AI/ChatGPT for my course. I would rather you come to me with half-formed ideas and have us work on them together to foster intellectual growth. However, at the end of the day, your integrity and your willingness to learn are your own.

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Evaluations and Grading & Assignments:

90 and above is an A
80 - 89 is a B
70 - 79 is a C
60 - 69 is a D
Under 60 is Failing

Your grade will be determined by the following:

a.   Readings (7 total) and short written responses (25pts each; 175pts total) (35%)
b.   In-class labs and corresponding assignments (5 total) (15pts each; 75pts total) (15%)
b.   Midterm paper (100pts) (20%)
c.   Final project (100pts) (20%)
d.   Participation (50pts) (10%)

Readings and written responses (35%)

About the readings:
All readings for the short answer assignments will be posted on Canvas. I tried to choose a mix of scientific articles, news articles, essays/poetry, etc. If you are having trouble getting through a particular reading, don't panic. Some of the scientific articles in particular use language that is a bit more difficult to digest. If you can answer the reading questions, you'll be fine – the point is to learn how to read and understand a variety of sources. As always, if you have questions or are struggling, I'm here to help!

Short answers:
These will be 3-5 sentence answers to EACH QUESTION regarding the reading(s). Unless otherwise stated, please use your own words (aka no copy/paste). Citations are not necessary unless you're referring to sources other than the required readings. At the start of the course, I am *relatively* lenient when grading written assignments. However the course goes on, I will begin to grade writing assignments more strictly. This is because I provide extensive feedback on all written assignments, so you'll learn exactly what you need to do to get a good grade. Additionally, if you get a grade that you feel is unsatisfactory, you are always welcome to redo the assignment for a new grade. If you're struggling, please, please reach out! I'm here to help. Due the following Thursday by 11:59pm.

Labs (15%):
Conducted in class, with assignments due the following Thursday by 11:59pm.

Midterm Paper (20%):
Topic and rubric TBD, due October 9th, 2025, by 11:59pm.

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Final Project (20%):
Topic and rubric TBD, due December 7th, 2025, by 11:59pm.

Participation (10%):
Participation will be a small percentage of your grade, because everyone here has different insights that can be valuable to the overall learning process. In my classroom, questions are encouraged, as are your thoughts on both course material and your classmates' commentary. If you find yourself struggling to engage, please reach out and we can discuss how to help you do so. Ways to engage include:

- Asking questions
- Commenting on/adding to a previous comment
- Disagreeing, respectfully, with a previous comment
- Reflecting on your own position/perspective in an argument or within the culture
- Discussing another perspective on the topic at hand
- Ultimately, you should ask yourself, "How have I added to the quality of this course through my presence? How did I contribute insights?"

Attendance Policy
You are expected to arrive to class on time and be prepared to participate in each class period. Four unexcused absences may result in withdrawal and a "W" or "Y" will be recorded. You may request to be excused from class for religious observances and practices, for illness, for school or work-related travel or for personal or family emergency. If you will be absent, please notify the instructor as soon as possible.

Academic Integrity:
Violations of scholastic ethics are considered serious offenses by San Carlos Apache College. Students may consult the SCAC Student Handbook sections on student code of conduct, on scholastic ethics and on the grade appeal procedure.

All work done for this class must be your own, or the original work of your group. While you may discuss assignments with other class members, the final written project must clearly be original. You may use work from books and other materials if it is properly cited.

Instructor Withdrawals
Students who have missed four consecutive classes (or the equivalent), or have not submitted any assignments nor taken any quizzes by the 45th day census report, due on [date of 45th day found in Academic Calendar on SCAC website], are assumed NOT to be participating in the class and may be withdrawn at the faculty member's discretion.

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Student Withdrawals
Students may withdraw from class at any time during the first 2/3 of the semester without instructor permission and without incurring any grade penalty. Please be sure to withdraw yourself by [withdrawal deadline date found in Academic
Calendar on SCAC website] if you do not expect to complete the class; otherwise, you may receive an "F" grade.

RESPECT (Establishes a respectful learning environment free from discrimination; promotes a safe and inclusive campus).

Equal Access Statement/Disability Accommodations
San Carlos Apache College seeks to provide reasonable accommodations for qualified individuals with disabilities. The College will comply with all applicable regulations, and guidelines with respect to providing reasonable accommodations as required to ensure an equal educational opportunity. This process includes self-identifying as a student with a disability, providing supporting documentation of their disability, and being approved for services through the Disability Resources Office (DRO). It is the student's responsibility to make known to their instructor(s) the student's specific needs within the context of each class in order to receive appropriate accommodations. We will work together in order to develop an accommodation plan specifically designed to meet the individual student's requirements.

For more information or to request academic accommodations, please contact: Anthony Osborn, TOCC Disabilities Resource Coordinator, aosborn@tocc.edu, or 520-383-0033 for additional information and assistance.

Title IX
San Carlos Apache College encourages each student to have the knowledge and skills to be an active bystander who intervenes when anyone is observed or being harassed or endangered by sexual violence. Sexual discrimination and sexual violence can undermine students' academic success and quality of life on campus and beyond. We encourage students who have experienced or witnessed any form of sexual misconduct to talk about their experience and seek the support they need.

Conduct: Bias, Bullying, Discrimination and Harassment
San Carlos Apache College faculty and staff are dedicated to creating a safe and supportive campus environment as a core value. Harassment based on age, class, color, culture, disability and ability, ethnicity, gender, gender identity and expression, immigration status, marital status, political ideology, race, religion/spirituality, sex, sexual orientation, and tribal sovereign status will not be tolerated.

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RESILIENCE (Supports students facing unavoidable circumstances and recognizes hardships, while setting academic expectations).

Incomplete Policy
Incomplete (I) grades are not awarded automatically. The student must request an "I" from the instructor who can choose to award an Incomplete only if all three of the following conditions are met:

> 1. The student must be in in compliance with the attendance policy.
> 2. The student must have unavoidable circumstance that would prohibit the student from completing the course.
> 3. The student must have completed over 75% of the course requirements with at least a "C" grade.

Incompletes are not a substitute for incomplete work due to frequent absences or poor academic performance. Incomplete grades that are not made up by the end of the ninth week of the following semester will be automatically changed to an F if the agreed upon work, as stipulated on the written form signed by the instructor and the student when the I grade is awarded, is not completed.

Special Withdrawals (Y) Grade
The "Y" grade is an administrative withdrawal given at the instructor's option when no other grade is deemed appropriate. Your instructor must file a form stating the specific rationale, with documentation, for awarding this grade. "Y" grades are discouraged since they often affect students negatively. Your instructor will not award a "Y" grade without a strong reason.

OPENNESS (Encourages open discussions between students and faculty and provides transparency about expectations and learning methods)

Course Schedule

Week	Important Dates	Topic	Chapter/Section	Assignments
1 8/18-8/22	8/18: First day of classes	Scientific Method; Intro to Sustainability and Environmental Justice	Ch. 1; Agent Orange readings (Canvas)	"Environmental biology and San Carlos" introductory writing assignment (due Thurs. 8/29)
2	8/25: My birthday	Matter, Energy, and Life; Lab #1	Ch. 2	Lab #1 (due Thurs. 9/04)

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8/25-8/30				
3 9/01-9/05	9/01: Labor Day, no class	Ecosystems and the Biosphere	Ch. 3; Mount Graham Readings (Canvas)	"Mount Graham" writing assignment (due Thurs. 9/11)
4 9/08-9/12		Community and Population Ecology	Ch. 4; Wolves readings (Canvas	"Wolves" writing assignment (due Thurs. 9/19)
5 9/15-9/20		Conservation and Biodiversity	Ch.5; Apache Trout readings (Canvas)	"Apache Trout" writing assignment (due Thurs. 9/25)

6 9/22-9/26		Work on midterm paper	TBD	Midterm paper (due Thurs. 10/09)
7 10/06-10/10		Environmental Hazards and Human Health	Ch. 6; Fire Ecology readings (Canvas)	"Fire Ecology" writing assignment (due Thurs. 10/16)
8 10/13-10/17		Environmental Hazards Lab	TBD	Lab #2 (dude Thurs. 10/23)
9 10/20-10/24		Water Availability and Use	Ch. 7; Colorado River Delta readings (Canvas)	"Colorado River Delta" writing assignment (due Thurs. 10/30)
10 10/27-10/31		Food, Hunger, and Agriculture	Ch. 8; Ch. 9; Livestock farming readings (Canvas)	"Livestock Farming" writing assignment (due 11/06)
11 11/03-11/07		Indigenous Agriculture	TBD	Lab #3 (due Thurs. 11/13)
12 11/10-11/14	11/11: Veterans Day,	Air Pollution and Climate Change	Ch. 10;	Lab #4 (due Thurs. 11/20)

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	no class			
13 11/17-11/21		Energy	Ch. 11;	Lab #5 (due Mon. 12/01)
14 11/24-11/28	11/27 and 11/28: no class	Final project preparations		Final projects (due Sun. 12/07)
15 12/01-12/05		Final Project Presentations		Final projects (due Sun. 12/07)
12/12/25	Final grades due			

Faculty/Student Communication
A faculty member will respond to a student's communication within 24 hours of receiving the communication excluding weekends and college closures. If a course is online a faculty will login their Canvas classroom a minimum of three times per week spread evenly throughout the week and respond to any discussion posts and check on student progress in the course.

Course Feedback:
All assignments will be graded and returned to the students promptly, typically within a week after the assignment is closed for handing in. Email and phone messages will be returned within 24 hours. A student or the instructor may request a student conference at any time during the semester. Quarterly grade reports will be provided to each student, either in person, by email or via the electronic system of Canvas.

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WISDOM (Encourages evaluation, reasoning and diverse perspectives; emphasizes organized and audience-aware expression, and promotes learning from elders and cultural teachings for personal and academic growth)

SCAC General Education Learning Outcomes

Apache Wisdom
Learning from the teachings carried on from Apache elders and other community leaders, students will appreciate their unique history, language, and culture as a source of strength for their personal, family, academic, and career aspirations.

Critical Thinking
Approach critical issues, problems, or questions using creativity and deductive reasoning, evaluating evidence, acknowledging diverse perspectives and contexts, and synthesizing one's own viewpoint into ongoing conversations and debates.

Communication
Effectively express ideas orally and in writing. Good communication includes understanding one's audience, organizing one's thoughts, acknowledging and integrating outside sources, using the most recent technology, and following the accepted writing and citation conventions of the particular discipline.

Environmental Literacy
Students will understand their connection to social, cultural, physical, and global environments. Students will consider and evaluate strategies for cultural, community and global sustainability.

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