



# Syllabus: BIO 105N

## Course Information

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Course Title: **Environmental Biology**

Course Prefix/Number: BIO 105N

Semester: Fall 2020

Class Days/Times: Asynchronous with optional weekly Zoom meeting Mondays 5-5:30

Credit Hours: 4 credit hours (6 periods--3 lecture and 3 lab periods)

## Instructor Information

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Name: **Dr. Teresa Newberry**

Phone/Voice Mail: (520) 352-9972

E-mail: [tnewberry@tocc.edu](mailto:tnewberry@tocc.edu)

Office location: Available via Zoom or phone

Office hours: MW 12:30-2 p.m. via Zoom <https://zoom.us/j/91708874341>

## Course Description

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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.

## Course Prerequisites

None

## Student Learning Outcomes

After completion of the 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 impact on the environment.
3. Evaluate 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.



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## Course Structure

This course is asynchronous which means that there are no scheduled class meeting times, however, we will have many opportunities to interact and create a learning community. We will even have several collaborative group assignments! There will be weekly optional Zoom meetings on Mondays from 5-5:30 which will be an overview of the upcoming weekly activities. These will be recorded and available on CANVAS. The advantage of asynchronous learning is that you have flexibility when you work on the course, however, this type of course requires good time management skills and the ability to learn independently. You should schedule the equivalent of 6 hours course time plus 12 hours per week for homework and assignments. Also, even though your time is flexible, there are course deadlines so be sure to keep track of these dates.

This course is divided into three modules, each with a broad focus. The modules are *Fundamentals of Ecology*, *Sustaining Life on Earth*, and *Food, Energy, and Water Systems*. Each module generally consists of the following elements:

- Weekly units with weekly reading assignments from the text and PowerPoint presentations
- Assignments, labs, and online discussions
- One Individual or Group Project
- One Online Exam

## 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.

You will also need the following basic household items to complete the online labs: 25 ft measuring tape or ability to measure distance with your Smartphone, a 1- or 2-cup measuring cup, a meter stick, and a Smartphone for taking photos for uploading to assignments.



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## Courses Outline

**Course Outline** (see schedule for specific dates):

- I. Environmental Biology
  - A. Science
  - B. Scientific method
- II. How the Earth Works
  - A. Climate and biomes
  - B. Ecology
    1. Ecosystem components
    2. Energy flow and biogeochemical cycling
    3. Natural selection and evolution
    4. Population and community ecology
- III. Humans on Earth
  - A. History
  - B. Population
  - C. Economics and politics
- IV. Human Impacts
  - A. Biodiversity
    1. Description and importance
    2. Impacts upon and management
  - B. Water
    1. Resources
    2. Uses and management
  - C. Land



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## Course Schedule with Dates

### Part 1: Foundations: Environmental Ethics, Ways of Knowing & Ecological Principles

		READING		CLASS CONTENT	ACTIVITIES/LABS/DISCUSSIONS
Date	Unit	Chap #	Chapter Title		
8/24-8/29	1	1	Environmental Science (Section 1.1, & 1.3)	Introduction to Course, Social Traps,	Intro Discussion, Syllabus Quiz Weekly Reading Assignment Social Traps Discussion
8/29-9/5	2	1	Environmental Science (Section 1.2, 1.4, & 1.5)	Introduction to Environmental Science & Ethics Science & TEK <i>Honorable Harvest w/Robin Kimmerer</i> <i>Wind &amp; the Rain Story w/C Lopez</i>	Honorable Harvest Reflection Experimental Design Assignment <i>Man in the Maze Reflection</i>
9/10-9/12	3	3	Ecosystems & the Biosphere	Ecology I: Ecosystems <i>Introduction to the Man in the Maze w/C Lopez</i>	HHMI Data Lab Ecology Research Question & Proposal <i>Man in the Maze Reflection</i>
9/17-9/19	4	4	Population Ecology;	Ecology IIA: Species Distribution & Interrelationships  Ecology IIB: Populations	Ecology Field work Ecology Data Analysis & Presentation Prep Strange Days on Planet Earth: Predator Video
9/20-9/26	5	4	Community Ecology	Ecology 1Ic: Communities	Ecology Research Presentations and Peer Review <b>EXAM I</b>
****September 27 <sup>th</sup> -October 4 <sup>th</sup> Fall Break****					



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## Part 2: Sustaining Diversity of Life on Earth

Date	READING		CLASS CONTENT	ACTIVITIES/LABS/DISCUSSIONS
	Unit	Chap # Chapter Title		
10/5-10/10	6	5 Biodiversity and Conservation	Biodiversity, Biomes, Ecosystem Services & Values <i>I:migi Video with C. Lopez</i>	<b>Desert Ecology Paper due 10/10</b> <b>ViewPoint Question due 10/10</b> I:migi/Relationship Reflection
10/11-10/17	7	5 Biodiversity and Conservation	Environmental Policy & Law Value of Urban Forests <i>Core Values with C. Lopez</i>	Birdsong & Coffee Video Biodiversity Discussion & Core Values HHMI Biodiversity Case Study—Indigenous Rights and Medicine
10/18-10/24	8	8 Food & Hunger	Human Populations "History of Human Population" "World Population Problems"	Web Activity: Ecological Footprint Easter Island
10/25-10/31	9	8 Sustainability & Human Development	Environmental Policy & Economics	In-class Discussion: "Is Sustainable Development Achievable?" <b>Viewpoint Report due 10/31</b>
11/1-11/7	10	6 Environmental & Human Health		<b>Viewpoint Discussion &amp; Exam II</b>
*****Veteran's Day, November 11th*****				



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## Part 3: Earth, Air, Fire & Water (Ecosystems, Climate Change, Water & Energy)

		<i>READING</i>		<i>CLASS CONTENT</i>	<i>ACTIVITIES/LABS/DISCUSSIONS</i>
Date	Unit	Chap #	Chapter Title		
11/8-11/14	11	10	Air Pollution, Climate Change & Ozone Depletion	Climate Change in the SW <i>Elements Video by C. Lopez</i>	<i>Intro to Climate Change &amp; Health Adaptation Plan</i>
11/15-11/21	12	7	Water Availability and Use	Water Resources TEK & History of Water Use by Tohono O'odham	Video: "Cadillac Desert—An American Nile" <i>Intro to Water Lab</i>
*****Thanksgiving Holiday, November 26 <sup>th</sup> & 27 <sup>th</sup> *****					
11/22-11/28	13	11	Conventional & Sustainable Energy	Climate Change & Energy	<i>How Much Carbon do We Spew</i>
11/29-12/5	14			Climate Change & Health	Climate Change & Health Adaptation Plan
12/9					EXAM III

### 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



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**Your grade will be determined by the following:**

Assignment Type	#	Points	Total	Percentage
<b>Exams</b>	<b>3</b>	<b>100</b>	<b>300</b>	<b>20%</b>
Discussions	4	20	80	5%
Class Assignments	13	30	390	26%
Projects for Each Module	3	150	450	30%
Weekly Reading Assignment	14	20	280	19%
			1500	

## Himdag Cultural Component

The theme of this course is the Himdag core value deep respect (*T-Pi:k*) which lays the foundation for responsible stewardship of the earth. During this course, the students have an opportunity to compare and contrast the O'odham way of knowing and scientific methodology using both a traditional story and material on Science presented in a PowerPoint. There is also a discussion on how the core values (*T-So:son*) promote biodiversity. The Ecology Research Project helps includes an opportunity for students to reflect on how principles of ecology are related to the O'odham kinship system.

## Policies and Expectations

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### Attendance Policy

You are expected to actively participate in this online course. Attendance is taken by the completion of the weekly reading assignment which is due by 11:50 p.m. each Saturday. Attendance is taken each Sunday. Two consecutive weeks of 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 (approved by Faculty Senate April 2014).

### Make-up policy:

Late assignments that can be made up will be accepted but will be penalized 10% for each day of tardiness. Failure to submit a project results in a grade of zero (0). An F is a better grade! At the instructor's discretion, extra credit opportunities and optional activities may be provided. No work will be accepted after the last day of class.



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## 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 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.

## Instructor Withdrawals

Students who have missed two consecutive weeks of this course or have not submitted any assignments nor taken any quizzes by the 45th day census report, due on **10/8/2020**, are assumed NOT to be participating in the class and may be withdrawn at the faculty member's discretion.

## 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 **11/9/2020** if you do not expect to complete the class, otherwise you may receive an "F" grade.

## 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 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.

## Equal Access Statement/Disability Accommodations

Tohono O'odham Community 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





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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**

Tohono O'odham Community 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.

Confidential support and academic advocacy can be found with: Student Services Title IX Coordinator/Counselor, Alberta Espinoza, M.Ed. located in I-We:mta Ki: Room 18. Phone 520-383-0033 email: aespinoza@tocc.edu

## **Conduct: Bias, Bullying, Discrimination and Harassment**

Tohono O'odham Community 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.

## **Classroom Behavior & Netiquette**

- Student behavior is also detailed in student handbook under Student Code of Conduct Violations
- Netiquette is a set of rules for behaving properly online. Something about cyberspace makes it easy for people to forget that they are interacting with other real people. The following bullet points cover some basics to communicating online:
  - Be sensitive to the fact that there will be cultural and linguistic backgrounds, as well as different political and religious beliefs, plus just differences in general.
  - Open discussion is an important part of learning and critical thinking especially in a course like this which where we examine complex environmental issues.
  - Use good taste when composing your responses in Discussion Forums. Swearing and profanity will not be tolerated and your message will be



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removed immediately if it contains either of these.

- Also, please consider that slang can be misunderstood or misinterpreted.
- Don't use all capital letters when composing your responses as this is considered "shouting" on the Internet and is regarded as impolite or aggressive. It can also be stressful on the eye when trying to read your message.
- Be respectful of others' views and opinions.
- Avoid "flaming" (publicly attacking or insulting) them as this can cause hurt feelings and decrease the chances of getting all different types of points of view.
- Use good grammar and spelling. Avoid using text messaging shortcuts.

## DISCLAIMER

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This syllabus is designed to evolve and change throughout the semester based on class progress and interests. You will be notified of any changes as they occur.