



# Syllabus: BIO 182N

## Course Information

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Course Title: Unity of Life II: Multicellular Organisms

Course Prefix/Number: BIO 182N

Semester: Spring 2022

Class Days/Times: TTh 10:30-12:30 via Zoom plus online work (see below)

<https://us06web.zoom.us/j/87373701103?pwd=OXZyeWdWYVVBzakFUeGNDbC9NTEYzdz09>

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 (cell)

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

Office location: Ha-Mascamdam Ha-Ki: Room 107

Office hours: TTh 12:30- 2:00 via Zoom

<https://us06web.zoom.us/j/87361747610?pwd=dkluaVpjUHRESFUxTVVGaVQ2VjNpQT09>

## Course Description

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This course is a survey of the principles of structure and function of living things at cellular, organismic and higher levels of organization. Topics include the evolution, classification, diversity and ecology of organisms, structure and function of plants and animals, structure of ecosystems and the biosphere. This course will emphasize holistic perspectives of life emphasizing the unity within the diversity of life, the inter-relatedness of all living organisms and the greater context for biological science.

## Course Prerequisites

1 year of high school Biology or BIO 100N; 1 year of high school Chemistry or CHM 121 or higher. Assessment at or completion of WRT 101 or instructor signature.

## Student Learning Outcomes

1. Explain scientific theories of the origin of life and the evolution of organisms.



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2. Describe schemes for classifying living organisms, including Tohono O'odham classification systems.
3. Explain diverse methods by which different organisms cope with their environment.
4. Explain interactions of organisms with each other and with their environments.
5. Describe how different ecosystems support diverse life forms.
6. Apply the scientific process to address human impacts upon the biosphere.

## Course Structure

This course is an integrated lab/lecture course where the labs are integrated into the regular class periods. This course consists of three modules centered on the following themes:

### PART I: ECOLOGY & ETHICS OF EXPERIMENTATION

--Introduction and Fundamentals of Ecology & Bioethics

--Units 1-3 (Chapters 1, 58 & 59)

### PART II: EVOLUTION

—Population Genetics Natural Selection, evolutionary theory, and classification of life

---Units 4-6 (Chapters 20, 22, & 23)

### PART III: DIVERSITY OF LIFE ON EARTH

--A survey of the biodiversity of life on earth including physiological and reproductive strategies

--Units 7-9 (Chapters 25, 26, 27, 28, 29, 32)

Each module consists of multiple units and culminates in an exam. Each unit consists of PowerPoint lectures, assigned reading, films, online homework, practice quizzes, and quizzes using McGraw Hill CONNECT and labs. There will also be one discussion activity for each module to explore current topics in Biology.

This course also includes one final paper and presentation, the Bioethics Controversy Report students which gives students an opportunity to examine the role of TOCC Himdag core values, specifically *T-Wohocududag* (unity and interconnectedness of life), in guiding ethics of experimentation with plants, animals, and humans.



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This is a hybrid virtual and online course in which 80% of the course will take place during our scheduled Zoom time (~120 minutes) and 20% of the course will be conducted independently via online course work (~30 minutes).

**Synchronous (Live) Zoom Sessions [80%].** This **synchronous online** course meets on Tuesday and Thursday from 10:30 AM – 12:30 PM. Learners are required to read/watch/listen to introductory materials before live Zoom classes and be actively engaged. Please expect a 30 to 45-minute lecture followed by small-group discussions, lab work and question/answer sessions.

**Asynchronous (Online) Tasks and Assignments [20%].** This course is designed so that approximately 20% of the course time will be asynchronous online. This means that outside of the Zoom sessions, learners will be expected to participate in asynchronous discussions, complete online CONNECT homework, practice quizzes, and quizzes and complete other learning activities.

## Course Learning Materials and Textbook Information

"Biology 12th Edition" By Peter Raven and George Johnson and Kenneth Mason and Jonathan Losos and Tod Duncan. It is very important to get the CONNECT 360 ISBN10: 1260494659 | ISBN13: 9781260494655 Version. This is an eBook, so you will order this directly. See CANVAS announcements on ordering details.

eScience Lab: Biology, Version 4. This is provided by TOCC for all students enrolled in this course. The kit will be mailed to you within the first 2 weeks of the course.

Other labs: Everyday household items including 1 bag of brown beans and 1 bag of white beans, several small cups, a marker, paper clips, paper, and a device for taking an image.

**IMPORTANT NOTE:** If you have taken BIO 181N in the Fall 2021, you can use the same course materials for BIO 182N. For students taking BIO 182N now and continuing to BIO 181N in Fall 2022, be sure to save your materials for the Fall.



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## Course Outline

- I. EVOLUTION OF LIFE
  - A. Current hypothesis on the origin of life
  - B. Defining evolution and natural selection
  - C. Evidence for evolution
- II. CLASSIFICATION OF ORGANISMS
  - A. Classification systems, including the Tohono O'odham classification system
  - B. Biological concept of species
  - C. Three domains
- III. SURVIVAL STRATEGIES
  - A. Physiological strategies
  - B. Reproductive strategies
- IV. INTERACTIONS BETWEEN ORGANISMS AND THEIR ENVIRONMENT
  - A. Population ecology
  - B. Community ecology
  - C. Animal behavior
- V. ECOSYSTEM STRUCTURE
  - A. Energy flow through ecosystems
  - B. Biological diversity
- VI. HUMAN IMPACTS UPON THE BIOSPHERE
  - A. Human population growth
  - B. Loss of biodiversity
  - C. Science of conservation biology
- VII. ETHICS OF EXPERIMENTATION
  - A. Role of TOCC Himdag core values in guiding ethics of experimentation with plants, animals, and humans

## 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:**

Grades	#	POINTS	TOTAL	PERCENTAGE
Labs & Lab Assignments	12	40	480	27%
CONNECT HOMEWORKS	9	30	270	15%
CONNECT PRACTICE QUIZZES	9	20	180	10%
CONNECT ONLINE QUIZZES	9	30	270	15%
EXAMS	3	100	300	17%
DISCUSSIONS	3	30	90	5%
BIOETHICS PAPER & ASSIGNMENTS		120	120	6%
INTRO MODULE & ATTENDANCE		90	90	5%
			1800	100%

## Himdag Cultural Component

Tohono O'odham traditions and cultural beliefs will be discussed as relevant course topics, and only as appropriate to the Tohono O'odham Nation's traditional standards for sharing information as determined by the Himdag committee.

The theme of this course is kinship or t-i:migi. In this course students learn about the unity within the diversity of life and how evolution explains the inter-relatedness or kinship (t-i:migi) of all organisms. Students will also formulate a personal ethic regarding the use of plants, animals and humans in science teaching and research, incorporating perspectives from Western science and TOCC Core values. The Bioethics Controversy Report students give students an opportunity to examine the role of TOCC Himdag core values, specifically T-Wohocududag (unity and interconnectedness of life), in guiding ethics of experimentation with plants, animals, and humans.

## Policies and Expectations

### **Attendance Policy (Re: face-to-face, synchronous-virtual, or Flex courses)**

You are expected to arrive to class on time and be prepared to participate in each class period. Four unexcused absences may result in a letter grade of "F" or an instructor withdrawal "FW" (see 45<sup>th</sup>-Day Instructor Withdrawal policy). 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.



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## **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.

## **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.

## **COVID-19 Related Incomplete Policy**

A student may be considered for an incomplete (I) if:

1. The student completed 50% of the course. (Note: Students who have emergencies before 50% of the course is complete should withdraw "W" from the course)
2. While completing the course the student was in "good standing" (i.e. had a grade of "C" or better and had good attendance).
3. The reason for not completing course was COVID related (ex. student contracted COVID, student had to care for someone with COVID or had to take on major care taking roles, had change in job, etc.)

For the incomplete, the Instructor must develop a plan with student and obtain permission from the student to grant an Incomplete. The student has until the end of **FALL 2022** to complete the course. Failure to complete the required plan will result in the incomplete (I) being replaced by a grade of F.



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## **45<sup>th</sup>-Day Instructor Withdrawal Policy "FW"**

Students who have missed four (4) consecutive classes, has not submitted any assignments, nor taken any quizzes by the 45<sup>th</sup> - day census report, due on **March 4<sup>th</sup>, 2022** are assumed NOT to be participating in the class and may be withdrawn at the faculty member's discretion. After the 45<sup>th</sup> - day census, if a student needs to stop attending a course, they must withdraw from the course (see Student Withdrawal Policy).

## **Student Withdrawal Policy "W"**

Students may withdraw from class at any time during the first two-third of the semester without instructor permission and without incurring any grade penalty. Please be sure to withdraw yourself by **March 30<sup>th</sup>, 2022** if you do not expect to complete the class, otherwise you may receive an "F" letter grade for the course. For more information on the student withdraw process email [admissions@tocc.edu](mailto:admissions@tocc.edu).

## **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 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](mailto:aosborn@tocc.edu), or 520-383-0033 for additional information and assistance.



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## 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 removed immediately if it contains either of these.
  - Also, please consider that slang can be misunderstood or





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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.