

# TOHONO O'ODHAM COMMUNITY COLLEGE



## Syllabus

### **BIO 208N: Tohono O'odham Ethnobotany**

#### Course Information

Course Prefix/Number: Bio 208N

Semester: Spring 2018

Class Days/Times: MW 9-11:15 Hybrid

Credit Hours: 4 (3 lec; 3 lab periods)

Course Title: Tohono O'odham Ethnobotany

Room: GSK 5

#### Instructor Information:

Name: Dr. Teresa Newberry

Phone/Voice Mail: 520-383-0107

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

Office location: Ed Building, Room 7

Office hours: MW 3-4:30; TTh 3-4 or by appt.

**Course Description:** This course covers basic principles of botany, plant ecology and the diversity of ways in which plants and the uses of plants have shaped cultural and historical developments of the Tohono O'odham. In this course, students will learn the fundamentals of plant classification and identification including the Tohono O'odham names of plants. Students will learn about the traditional uses of plants and their role in health and nutrition. They will learn about traditional plant harvesting methods as well as traditional and modern practices in plant cultivation. Students will also learn about the critical roles that plants play in the modern world and into a sustainable future.

#### Student Learning Outcomes (SLOs) :

**After completion of the course students will be able to .....**

1. Describe the classification of life and the distinguishing characteristics of plants.
2. Explain fundamental aspects of plant anatomy and physiology including reproduction and key characteristics of flowers and fruits.
3. Identify plants to family using a dichotomous key and to species using identifying characteristics.
4. Know the scientific, common and Tohono O'odham names of culturally important Sonoran Desert Plants.

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5. Describe the roles of major Sonoran Desert plant families used by the Tohono O'odham for food, health, and other uses.
6. Describe the role of traditional plants in the prevention and treatment of diabetes.
7. Describe the historical and modern uses of plants including traditional harvesting methods, origins of agriculture and plant domestication, and traditional and modern agriculture.
8. Compare traditional and modern agricultural techniques.
9. Describe fundamental principles of human nutrition and nutrients supplied by plants.
10. Describe the ecological importance of plants in ecosystems such as food webs and global carbon balance.
11. Explain the critical roles that plants play in the modern world and into a sustainable future.
12. Identify possible careers in botany and biology.

## **Course Structure:**

This course is an integrated lab/lecture course where the labs are integrated into the regular class periods. This course consists of 5 units. Each unit consists of PowerPoint lectures, assigned reading, films, in-class activities, reflective writing, discussions, laboratory project and a quiz. There are three class projects throughout the class: a Phenology Project, an Herbarium Project and an Ethnobotany project which culminates in a class presentation. There will be one field trip, several guest lectures on traditional uses of plants and a cholla bud harvest.

## **Course Assessment:**

Course assessment consists of quizzes, discussions, short written assignments, informal in-class assessments, laboratory reports and three class projects, one of which includes a presentation. Study guides will be available to help you prepare for quizzes. In accordance with my teaching philosophy in which I believe student learning occurs primarily through hands-on, real world application of course materials, quizzes comprise 50% or less of the final grade (although they are still an important aspect of course assessment and your grade). In order to facilitate on-going faculty-student feedback and provide formative assessment, many class projects are divided into smaller intermediate steps such as topic choice, project proposals, and rough drafts. Student-to-student assessments are also included in this course through peer review of group participation and written assignments. I welcome student feedback about the course anytime. I will also provide students an opportunity to give me feedback on their course experience through an anonymous mid-course and final course evaluation.

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## Texts and Materials:

Required Text: "Plants and Society" 7<sup>th</sup> Edition Levetin and McMahon

Textbook Link:

[http://highered.mheducation.com/sites/0073524220/information\\_center\\_view0/index.html](http://highered.mheducation.com/sites/0073524220/information_center_view0/index.html)

TOCC Plant Atlas: <http://toccatlas.plantpress.net/>

<b>Evaluation:</b>	<b>Points:</b>	<b>Percent of Total Points:</b>
Quizzes	200	20%
Labs & Field Trips	300 pts	30%
Discussions, Reflective Writing & Homework	200 pts	20%
Phenology Project	100 pts	10%
Herbarium Project	100 pts	10%
Ethnobotany Project—	100 pts	10%
<b>TOTAL</b>	<b>1000 pts</b>	<b>100%</b>

## **Himdag Cultural Component:**

This course will focus on the core value of T-apedag and include Tohono O'odham Niok (language) thus strengthening the Himdag and teaching science from a holistic and indigenous point of view. This course involves students in the study of plants which are an important part of Tohono O'odham life. Knowledge shared about the uses and benefits of Sonoran desert plants will be of great benefit to community members. Knowledge will be shared between the instructor, students, and a Tohono O'odham facilitator to address specific cultural content areas. In addition, the inclusion of O'odham plant names will help strengthen the Tohono O'odham Niok (language). This course will also enhance T-apedag (wellness), since it covers the importance of traditional plants in human nutrition and health.

## **Policies and expectations-**

**Course Policies Requirements:** (1) Attend class regularly; (2) Complete in-class and out-of-class assignments and submit to the instructor; (3) Attend all field trips; (4) Take all quizzes (5) Complete all class projects & presentations.

**Attendance:** You are expected to arrive to class on time and actively participate each class period. Quizzes and exams are given out at the beginning of class time. Field trips and class activities begin at the start of class and may be missed if you do not arrive to class on time. Because exams, labwork and/or other assignments potentially occur every class period, points potentially will be lost each class period missed. If you miss all or a portion of a class, then you are solely responsible for obtaining missed class material from fellow students. Complete attendance is mandatory during

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student project presentations; otherwise presentation points will be forfeited. Four consecutive, unexcused absences may result in withdrawal. You may request to be excused from class for religious observances and practices, for illness, for travel or for personal or family emergency. If you will be absent or have been absent, please notify the instructor as soon as possible.

**Make-up policy:** Missed quizzes can be made up within two days of the quiz date, if the missed class is due to an excused absence. Late assignments that can be made up will be accepted but will be penalized 25%. Laboratories cannot be made up. At the instructor's discretion, extra credit opportunities and optional activities may be provided.

**Academic Integrity:** Violations of scholastic ethics are considered serious offenses by Tohono O'odham Community College, the Student Services Department, and by your instructor. Students may consult the TOCC Student Handbook sections on student code of conduct, on scholastic ethics and on the grade appeal procedure. Copies are available at Tohono O'odham Community College.

All work done for this class must be your own. While you may discuss assignments with other class members, the final written project must clearly be your own. You may use work from books and other materials if it is properly cited. Copying from a book without proper reference or from a person under any circumstances will result in an "F" for the assignment, and at the instructor's discretion, possibly an "F" for the course.

## **ADA Compliance:**

Tohono O'odham Community College strives to comply with the provisions of the Americans with Disabilities Act and Section 504 of the Rehabilitation Act. If you have a learning problem, physical disability, or medical illness that requires you to have any special arrangements, please inform your instructor at the beginning of the semester so your academic performance will not suffer because of the disability or handicap.

## **Title IX Statement**

Tohono O'odham Community College faculty and all staff are dedicated to creating a safe and supportive campus. Title IX and our school policy prohibit discrimination on the basis of sex- this includes sexual misconduct; harassment, stalking, domestic and dating violence and sexual assault. Sexual discrimination and sexual violence can undermine students' academic success and quality of life on campus and beyond. We encourage students who have experienced 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:

Christie Kelly, M.A.  
Counselor/Title IX Coordinator  
ckelly@tocc.edu

## **Classroom Behavior:**

- Because of insurance limitations, non-registered visitors are not allowed at class sessions or on field trips.
- Possession of drugs, alcohol or firearms on college property is illegal.
- Food and beverages are allowed in classrooms.
- Pets, telephones, pagers and other electronic devices that distract students are not allowed in classrooms.
- Students creating disturbances that interfere with the conduct of the class or the learning of others will be asked to leave.

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## **Course Feedback:**

All assignments, written papers and quizzes will be graded and returned to the students one week after the assignment is due. E-mail and phone messages will be returned within two days. A student or the instructor may request a student conference at any time during the semester. Grades can be checked in Canvas on an on-going basis.

## **Instructor Withdrawals:**

Students who have missed four consecutive classes, not submitted any assignments nor taken any quizzes by the 45th day census report, due on March 4<sup>th</sup>, 2018 are assumed NOT to be participating in the class and will be withdrawn. 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 March 31<sup>st</sup>, 2018 if you do not expect to complete the class, otherwise you may receive an "F" grade.

## **Incomplete (I) grade:**

"I" grades are not awarded automatically. The student must request an "I" from the instructor who will judge the student's ability to complete the course on his or her own. Generally the student must have completed over 80% of the course requirements with at least a "C" grade. An "I" requires a written contract between the student and the instructor listing work to be completed as well as how and when the work will be done. If the work is not completed within the contract period, the "I" grade automatically reverts to an "F." "I" grades will not be re-evaluated during the final two weeks of the semester when class activities are normally at their most intense.

## **Special Withdrawal (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.

**Final Grades:** Students will receive a grade transcript from the college mailed to the address given with registration materials at the end of the semester when all grades have been recorded.

## **SPECIAL NOTE TO STUDENT:**

For privacy and security reasons, instructors are advised **NOT** to give grades over the telephone. Grades will only be emailed with written permission from the student.

Your instructor will make every attempt to follow the above procedures and schedules, but they may be changed in the event of extenuating circumstances.

Students submitting assignments through the mail or by email are advised to make copies for their own protection.

If you move during the semester, please file a change of address form with the Student Services Office, and inform your instructor.

GOOD LUCK!

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

- I. Principles of Botany
  - A. The plant body
  - B. Plant reproduction
  - C. Plant physiology
- II. Plant Classification
  - A. Characteristics and classification of life
  - B. Major plant families of the Sonoran Desert
  - C. Plant taxonomic keys
  - D. Identification of culturally important plants to the Tohono O'odham
- III. Historical perspectives
  - A. Harvesting and preparation of Sonoran desert plants by the Tohono O'odham
  - B. Agriculture
    - a. Origins of agriculture and plant domestication
    - b. Traditional Tohono O'odham agricultural methods
    - c. Modern agricultural methods
      - 1. Selective breeding
      - 2. Green revolution
      - 3. Agricultural biotechnology and genetic engineering
- IV. Tohono O'odham Uses of Plants
  - A. Introduction to Ethnobotany
  - B. Plants as food
    - 1. Human nutrition
    - 2. Nutritional content of traditional plants
    - 3. Crop plants
    - 4. Sustainability
  - C. Plants as medicine
    - 1. Role of traditional foods in prevention of diabetes
    - 2. Medicinal uses of plants
  - D. Other uses of plants
    - 1. Fiber
    - 2. Building materials
    - 3. Other uses
- V. Plant ecology
  - A. Cycling of matter and energy in ecosystems
    - a. Primary productivity
    - b. Food chains and food webs
  - B. Role of plants in global carbon cycle and global warming
- VI. Careers in Botany

**DISCLAIMER:** 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.

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## BIO 208N—TOHONO O'ODHAM ETHNOBOTANY

TENTATIVE SCHEDULE SPRING 2018

NEWBERRY

Date	Unit	Chapters & Readings
Week 1-2 1/17-1/29	Introduction to Ethnobotany & Traditional Ecological Knowledge	Chapter 1 Honorable Harvest (Kimmerer) Ethnoscience—The Oldest Science (Berkes) Ten Principles of Ethnobiology (Lepofsky & Feeney)
Week 3-5: 1/31-2/14	Plant Biology—The Plant Body / <i>Phenology Project</i>	Chapter 3 Ethnophenology & Climate Change
Week 6-8 2/21-3/7	Plant Evolution, Diversity & Taxonomy/ <i>Herbarium Project</i>	8 & 9
Week 9 3/19-3/21	Plant Physiology	4
Week 10 3/26-3/28	Plants as Food (Nutrition) <i>Traditional Plants Guest Lecture Nutritional Uses</i> )	10
Week 11 4/2-4/4	Plants as Medicine (Diabetes) <i>Traditional Plants Guest Lecture (Medicinal Uses)</i>	19, 20
Week 12: 4/9-4/11	Plants & Agriculture <i>Cholla Bud Harvest</i>	11-14
Week 13: 4/16-4/18	Plant Ecology & Climate Change	26
Week 14: 4/23-4/25	Careers in Botany <i>Earthweek</i>	
Week 15: 4/30-5/2	<i>Ethnobotany Project Presentations</i>	22-25
5/7	Traditional Plant Knowledge Bowl	

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## Acknowledgment of Receipt of Syllabus

Please read, sign and return the following acknowledgment to me in class, *or* return to me at the following address:

Teresa Newberry  
Tohono O'odham Community College  
P.O. Box 3129  
Sells, AZ 85634

- I have received my Bio 208N syllabus (including course objectives, policies, requirements and schedule) and have read and understood all the enclosed materials
- I have no objection to receiving an occasional call from the instructor at the number given with my registration materials.
- I prefer that the instructor not call or contact me by phone anytime during the semester.

My reason(s) for taking this course:

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My background in this area includes:

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- I would like to be contacted by the instructor regarding the following concerns:

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Print Name Clearly Here

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Sign Name Here

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Student ID Number

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Telephone Number

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Current Mailing Address/City/State/Zip

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E-mail Address