Syllabus: *Plant Science*

Course Information	
Course Prefix/Number: ANR 130 N Semester: Fall 2018 Class Days/Times: **Mondays and Wednesdays 12:30 pm-3:15 pm** Plant science is part of the curriculum for Tohono O'odham Agriculture and Natural Resource program Associate of Applied Science degree. The course is important to understand basic processes that govern wild and cultivated plant growth. This is a lab course that involves some hands-on work to provide a better understanding of these processes.	Credit Hours: 4(3 lecture & 3 lab periods) Course Title: Plant Science Room: Main campus room 24

Instructor Information: Name:Teresa DeKoker	Phone/Voice Mail: n/a E-mail: tdekoker@tocc.edu Office location: n/a Office hours: n/a

Course Description:

An introduction to the principles of plant growth, development, reproduction and structure of vascular plants at the cellular, organism and ecosystem levels. This course will address plant growth in the context of climatic and environmental influences, with global and evolutionary patterns considered.

This course will cover the history of agriculture and use of plants as food, medicine and nutrition.

Plant Science 130N is recommended for TOCC AS-Life Science students with and Agriculture Concentrationand fulfills 4 credits of science for TOCC AA, AS, ABUS, AGS, and AAS majors.

Course Objectives:

During this course students will ……..

Student Learning Outcomes (SLOs) : (Three to Six)

After completion of the course students will be able to *<<action verb>> <<something>>* **……**

1. **Recognize the role of plants.**
2. **Classify and name plants.**
3. **Compare monocots and dicots.**
4. **Describe plant cell structure.**
5. **Differentiate plant tissues.**
6. **Identify the components of roots, stems, leaves, and flowers.**
7. **Describe the origin and domestication of cultivated plants.**
8. **Recognize basic concepts in plant improvement.**
9. **Distinguish effective plant propagation methods.**
10. **Summarize vegetative and reproductive growth and development.**
11. **Identify the properites of photosynthesis, respiration, and translocation in vascular plants.**
12. **Identify the physical and chemical properties of soil and soil water.**
13. **Describe ecological adaptations of Sonoran desert plants to the environment.**
14. **Recognize the climatic factors and mineral nutrients affecting plant growth.**
15. **Identify major agricultural crops in Arizona.**

Course Structure:
Organization, learning activities, instructions, expectations, and must have at least one learning activity for each objective, but may have more than one.

Class will meet in room 24 on Main Campus. The class will consist of labs, lectures and exercises.

Texts and Materials: *(list text(s), and materials students will need)*
Plants & Society (sixth edition) by Estelle Levetin and Karen McMahon

Evaluation and Grading & Assignments: (*information on how the course grade will be determined; details regarding assignments, exams, projects with due dates and any instructions for work. Make sure that you have one or more learning activities in the calendar/schedule that address each outcome. An activity can address more than one outcome.)*

Evaluation	*Points*	*Percentage of total grade*
Exams	*200 (2 @ 100 pts)*	*20%*
Labs and participation	*300 pts*	*30%*
Quizzes & Homework Assignments	*400 pts*	*40%*
Final Presentation	*100*	*10%*
TOTAL	*1000*	*100%*

100-90 ***A***
89-80 ***B***
79-70 ***C***
69-60 ***D***
59 + below ***F***

***Himdag* Cultural Component:** (*include details on how this course will be integrated into the Himdag)*
Tohono O'odham traditions and cultural beliefs will be discussed as relevant to course topics, and oly as appropriate to the Tohono O'odham Nation's traditional standards for sharing information as determined by the HImdag Committee.

Policies and expectations- minimally *address attendance, participation, tardiness, academic integrity/plagiarism, absences, missed homework or exams, late assignments, student behavior, official ADA statement, and any other policies you have for your course.*

Course Policies Requirements: *(1) Attend class; (2) Complete in-class and out-of-class assignments and submit to the instructor; (3) Attend all field trips; (4) Take all exams; (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, lab work 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 student project presentations; otherwise presentation points will be forfeited. More than three 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. More than five absences (excused and/or unexcused) may result in withdrawal.*

Make-up policy: *If you have an excused absence and miss an exam, you can make it up within two days of the exam date. 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 contact the Disability Resource Office (520-383-0033) at the beginning of the semester so your academic performance will not suffer because of the disability or handicap.

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, **cell phones**, 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.*

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 messages will be returned within two days. A student or the instructor may request a student conference at any time during the semester. A mid-semester grade report will be provided to each student.

Instructor Withdrawals:
Students who have missed more than three classes; not submitted any assignments nor taken any quizzes by the 45th day census report 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 November 2nd 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.

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!

Course Outline:

I Role of plants in society
II Plant cells
III How plants grow
IV The plant body (tissues, organs and organ systems)
V Stems
VI Roots
VII Leaves
VIII Energy
IX Photosynthesis, respiration & transpiration
X Flowers and pollination
X1 Fruit and seeds
XII Reproduction & meiosis
XIII Evolution & diversity
XI Plant ecology
XII History of agriculture
XIII Plants as food & medicine
XIV Human nutrition
XV Plant nutrients
XVI Plant propagation, soil and water conservation

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.

The Difference Between Student Learning Outcomes and Course Objectives

Goals state what you, your colleagues, or your college aim to achieve. They can describe aims outside the teaching and learning process.

Outcomes are goals that refer to a destination rather than the path taken to get there – the end rather than the means. The OUTCOME is NOT the PROCESS.

Learning outcomes or ***Learning goals*** are goals that describe how students will be different because of a learning experience.

Objectives can describe detailed aspects of goals. The PROCESS or the MEANS to an END or OUTCOME. (Suskie)

Student Learning Outcomes (SLOs) tend to represent the "big picture" as opposed to the specific details and discrete aspects or chunks of performance that course objectives focus on. SLOs are achieved during an entire course of study, while objectives could be achieved in one class and tend to be broader than SLOs.
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When writing SLOs ask yourself two simple questions:
"Can it be measured?" and "Is learning being demonstrated?"

Contrast the following Student Learning Outcome:
The student will be able to demonstrate the ability to use the conventions of grammar when creating paragraphs.

with the Course Objective:
Given a paragraph of ten sentences, the student will identify ten rules of grammar which are used in its construction.

Examples of poorly written SLOs:

1. Students will be able to comprehend, interpret, analyze and critically evaluate material in a variety of written and visual formats.

2. Students will draw on historical and/or cultural perspectives to evaluate and/or all of the following contemporary problems/issues, contemporary modes of expression, and contemporary thought.

3. Students will apply the knowledge base of the social and behavioral sciences to identify, describe, explain, and critically evaluate relevant issues, ethical dilemmas, and arguments.

Avoid using non-action verbs such as:
Appreciate
Become aware of
Become familiar with
Know
Learn
Understand
Value

Glossary of Terms:
Assessment: the continual process of:

Establishing clear, measurable expected outcomes of student learning;
Ensuring that students have sufficient opportunities to achieve those outcomes;
Systematically gathering, analyzing, and interpreting evidence to determine how well student learning matches our expectations; and,
Using the resulting information to understand and improve student learning. (Suskie, *Assessing Student Learning*, 4)

Classroom Assessment and Classroom Assessment Techniques (CATS): Classroom assessment is a systematic approach to formative evaluation, and Classroom Assessment Techniques (CATS) are simple tools for collecting data on student learning in order to improve it. CATS are `feedback devices,' instruments that faculty can use to find out how much, how well, and even how students are learning what they are trying to teach…these formative assessment tools are meant to give teachers and students information on learning before and between tests and examinations; therefore, they supplement and complement formal evaluations of learning (Angelo and Cross, *Classroom Assessment Techniques: A Handbook for College Teachers*, 25-26).

Evaluation: One perspective equates it with judgment: evaluation is using assessment information to make an informed judgment on such things as:

Whether students have achieved the learning goals established for them;
The relative strengths and weaknesses of teaching and learning strategies; and,
What changes in goals and teaching-learning strategies might be appropriate.

A second conception of evaluation is that it determines the match between intended outcomes and actual outcomes. A third conception of evaluation is that it investigates and judges the quality or worth of a program, project, or other entity rather than student learning…Under this definition, evaluation is a broader concept than assessment. While assessment focuses on how well student learning goals are achieved, evaluation addresses how well all the major goals of a program are achieved (Suskie 12).

Formative assessment: …"undertaken while student learning is taking place rather than at the end of a course or program" (24). (e.g., a mid-term progress report, etc.)

Learning outcomes (or learning goals): a description of "how students will be different because of a learning experience. More specifically, learning outcomes are the knowledge, skills, attitudes, and habits of mind that students take with them from a learning experience" (117).

Objectives: a description of "detailed aspects of goals…Objectives can also describe the tasks to be accomplished to achieve the goal—the means to the end, the process leading to the outcome" (117).

Summative assessment: "the kind obtained at the end of the course or program" (23).