



BIOL 3403 Plant Taxonomy Lecture

Biology Program, Department of Life Sciences

Instructor information

Instructor: J. Rodolfo Valdez Barillas (Call me Dr. Valdez)

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Office hours: Scheduled by e-mail appointment, to be conducted via WebEx or in person

Class meeting format: F2F Tuesdays and Thursdays **9:30 to 10:45 pm in CAB 333**

Course Description

This course will introduce the student to plant classification using a Systematics (evolutionary origin and relation of plant groups) and Taxonomic (naming plants based hierarchical and categorical criteria) approach. The course mainly focuses on vascular and more specifically flowering plants, an important group that dominates most of Earth's terrestrial ecosystems and has provided many services to humans and many other life forms throughout our planet's history. During the course, students will be introduced to concepts and the construction of plant phylogenies, the diversification and evolution of plant species, and will be provided with an overview of important features used to identify and differentiate vascular plants. Students will develop an understanding of the phylogenetic arrangement of plant groups **from around the world**, and the main structural and biochemical characteristics, evolution, economic value, and ecological value for each group.

Course Objectives

1. Understand the mechanisms that explain the diversity of plants and how plants have adapted to different environments.
2. Understand differences among plants from a chemical, molecular, cellular, morphological, and ecological perspective.
3. Understand the links between plant uses, plant products and both the economic and ecological value of each group.
4. Read and evaluate original literature (including peer reviewed journals) to gain direct access to historical and modern developments in the field of Plant taxonomy and systematics.
5. Learn to appreciate plant diversity and the different roles that plants have played and could play in the life of humans.
6. Plan and execute a plant related project throughout the semester that will help enhance your understanding of plant diversity, morphology, function, and importance.



Recommended resources

Plant Systematics: A Phylogenetic Approach 4th Ed. By Judd/ Campbell/ Kellogg/ Stevens/ Donoghue ISBN 97816053533890

Plant Taxonomy: The Systematic Evaluation of Comparative Data. 2nd Ed. By Tod F Stuessy ISBN 9780231147125

Plants & Society 8th Ed. By Estelle Levetin and Karen McMahon ISBN 9781259880049

Course policies

Attendance: You are required to attend every class.

Participation: You are expected to have reviewed the course material for the week and material from previous lectures, so you come to class ready with questions. You are also expected to actively contribute during class activities, group project activities, and laboratory activities.

Communication: All communication and inquiries to the instructor should be e-mailed to jvaldezb@tamusa.edu. This e-mail is intended for communication only. No late assignments will be accepted via e-mail unless the instructor has granted an accommodation. All assignments are submitted via blackboard.

Course Changes: This course syllabus and lecture schedule is subject to change at any time; however, students will be notified via an e-mail message or during class should it change.

Make up Exams: Make up Exams are granted upon instructor's discretion and cannot be expected unless you have previously communicated your absence in written form or no later than 24hrs from your absence.

Late assignments: for each day passed the due date, 10% will be deducted over the total possible points.

Course Evaluation



Exams: First half of the Exam will be taken individually using a scantron and will include multiple choice, true/false questions. Second half of the Exam will include short answers, and essay type questions. Exams will take place on the Tuesday of Exam week. (See schedule)

- Exams are closed book, and most questions will come from or will be like the quiz questions.
- The Exam may include figures, tables, diagrams or articles that will be provided the day of the Exam
- Each exam will include the material covered up until the week prior to the day of the exam.
- You will have 30 minutes to complete the first half and 45 minutes to complete the second half. If all group members complete the first part before the 30 minutes the group may start the second half.
- The exam will include 20-25 multiple choice questions that will be answered individually using a scantron and 2-3 short answer questions that will be answered as a group.

Quizzes: Quizzes will be available weekly

- Regular quizzes will be available via blackboard and completed outside of lecture time. You will have 5 days to complete the quiz and submitted before the Due date and time.
- However, on the week of Exam a quiz will be submitted on Wednesday and you will have 48 hours to complete and submit before the end of the day
- Your quiz can be taken three times, and the highest score will be added to your gradebook.
- Questions will be presented one at a time and no backtracking will be possible; the number of questions may range from 5-10 questions.
- Length of quiz may range from 5 to 10 minutes.

Assignments: This may include a scientific article summary and critiques or in class activities

- Please read instructions provided on how to write an article summary and critique.
- Depending on the assignment, submission may be during lecture or after lecture.
- Most assignment in class will be conducted as a group. So only one draft per group will need to be submitted. If you are absent, you may not make up the assignment unless you provide a reasonable excuse for your absence.

Grading: (Number of quizzes and assignments may be adjusted based on student course load)



- The extra credit earned is added to the 570 total points when calculating your final grade over 100 points. The Lecture portion of the course represents 70% of your final grade. The lab portion of the course represents 30% of your final grade.

Instruction	Assessment	Cumulative pts
Lecture	Exams (3+final) 100pts/each	400
	Quizzes (11) 10pts/each	110
	Assignments (3) 10pts each	30
	Project Final Report	10
	Project Presentation	10
	Project Product	10
	Total	570

A = 90 – 100 points
B = 80 – 89.9 points
C = 70 – 79.9 points
D = 60 – 69.9 points
F = <59.9 points



BIOL 3403 Plant Taxonomy & Systematics
Spring 2024 Lecture schedule

wk.	Date	Lecture Topic	Quizzes (Q)
1	1/16/2024 1/18/2024	Syllabus. The Science of Plant Systematics Methods and Principles of biological Systematics	Syllabus Q0 Pre-Test
2	1/23/2024 1/25/2024	History of Plant Classification Taxonomic Evidence of Structural Characters	Lecture Q1
3	1/30/2024 2/01/2024	Taxonomic Evidence of Biochemical Characters Evolution of Plant Diversity	Lecture Q2
4	2/06/2024 2/08/2024	Exam 1 Overview of plant Phenology	
5	2/13/2024 2/15/2024	Overview of plant Phenology (Algae and humans) Lycophytes and Ferns	Lecture Q3
6	2/20/2024 2/22/2024	Evolution of Gymnosperms ANA-Grade and Magnolid Clade	Lecture Q4
7	2/27/2024 2/29/2024	Mesangiospermae Monocots: Alismatales	Lecture Q5
8	3/05/2024 3/07/2024	Exam 2 Monocots: Liliales	
9	3/11-16/2024	Spring Break	
10	3/19/2024 3/21/2024	Monocots: Asparagales Monocots: Arecales, Commelinales, Poales and Zygiberales	Lecture Q6
11	3/26/2024 3/28/2024	Eudicots: Ranunculales and Proteales Eudicots: Saxifragales and Vitales	Lecture Q7
12	4/02/2024 4/04/2024	Eurosid I: Zygophyllales, Oxalidales, Celastrales, Malpighiales Eurosid I: Fabales, Rosales , Cucurbitales and Fagales	Lecture Q8
13	4/09/2024 4/11/2024	Exam 3 Malvids: Geraniales, Myrtales, Brassicales, Malvales , Sapindales	
14	4/16/2024 4/18/2024	Superasterids: Caryophyllales and Santalales Asterids: Cornales and Ericales Lamiids: Garryales, Solanales and Gentianales	Lecture Q9
15	4/23/2024 4/25/2024	Lamiids: Lamiales Campanulids: Aquifoliales, Apiales , Dipsacales, Asterales	Lecture Q 10
	4/1-7	Final (Cumulative)	

Lab Topics may be subject to change if more than one lab period is needed to complete the assignment.

Field activity may or may not be conducted depending on weather.



IMPORTANT POLICIES AND RESOURCES

Academic Accommodations for Persons with Disabilities: Texas A&M University-San Antonio is committed to providing all students with reasonable access to learning opportunities and accommodations in accordance with The Americans with Disabilities Act, as amended, and Section 504 of the Rehabilitation Act. If you experience barriers to your education due to a disability or think you may have a disability, please contact Disability Support Services in the Central Academic Building, Suite 210, or at (210) 784-1335 or visit <https://www.tamusa.edu/index.html> or email us at dss@tamusa.edu. Disabilities may include, but are not limited to, attentional, learning, mental health, sensory, physical, or chronic health conditions. All students are encouraged to discuss their disability-related needs with Disability Support Services and their instructors as soon as possible.

Academic Learning Center: The Academic Learning Center provides free course-based tutoring to all currently enrolled students at Texas A&M University-San Antonio. Students wishing to work with a tutor can make appointments through the Brainfuse online tutoring platform. Brainfuse can be accessed in the *Tools* section of Blackboard. You can contact the Academic Learning Center by emailing tutoring@tamusa.edu, calling (210) 784-1307, or visiting the Central Academic Building, room 202.

Counseling/Mental Health Resources: As a college student, there may be times when personal stressors interfere with your academic performance and/or negatively impact your daily functioning. If you are experiencing emotional difficulties or mental health concerns, support is available to you through the Student Counseling Center (SCC). To schedule an appointment call 210-784-1331 or visit Madla 120.

All mental health services provided by the SCC are free and confidential (as the law allows). The Student Counseling Center provides brief individual and group therapy, crisis intervention, consultation, case management, and prevention services.

Crisis support is available 24/7 by calling the SCC at 210-784-1331 (after-hours select option '2'). For more information and self-help resources, please visit www.tamusa.edu/studentcounseling

Emergency Preparedness: JagE Alert is Texas A&M University-San Antonio's mass notification. In the event of an emergency, such as inclement weather, students, staff and faculty, who are registered, will have the option to receive a text message, email with instructions and updates. To register or update your information visit: <https://tamusa.bbcportal.com/>.

More information about Emergency Operations Plan and the Emergency Action Plan can be found here: <https://www.tamusa.edu/about-us/campus-information/safety/university-police-department/documents/emergency-operations-plan.pdf> and <https://www.tamusa.edu/about-us/campus-information/safety/university-police-department/documents/emergency-action-plan.pdf>

Download the SafeZone App for emergencies or call (210) 784-1911. Non-Emergency (210) 784-1900

Financial Aid and Verification of Attendance: According to the following federal regulation, 34 CFR 668.21: U.S. Department of Education (DoE) Title IV regulation, a student can only receive Title IV funds based on Title IV eligibility criteria which include class attendance. If Title IV funds are disbursed to



ineligible students (including students who fail to begin attendance), the institution must return these funds to the U.S. DoE within 30 days of becoming aware that the student will not or has not begun attendance. Faculty will provide the Office of Financial Aid with an electronic notification if a student has not attended the first week of class. Any student receiving federal financial aid who does not attend the first week of class will have their aid terminated and returned to the DoE. Please note that any student who stops attending at any time during the semester may also need to return a portion of their federal aid.

Writing, Language, and Digital Composing Center: The Writing, Language, and Digital Composing Center supports graduate and undergraduate students in all three colleges as well as faculty and staff. Tutors work with students to develop reading skills, prepare oral presentations, and plan, draft, and revise their written assignments. Our language tutors support students enrolled in Spanish courses and students composing in Spanish for any assignment. Our digital studio tutors support students working on digital projects such as eportfolios, class presentations, or other digital multimedia projects. Students can schedule appointments through JagWire under the Student Services tab. Click on “Writing, Language, and Digital Composing Center” to make your appointment. The Center offers face-to-face, synchronous online, and asynchronous digital appointments. More information about what services we offer, how to make an appointment, and how to access your appointment can be found on our website at <https://bit.ly/WLDCCenter>.

Meeting Basic Needs: Any student who has difficulty affording groceries or accessing sufficient food to eat every day, or who lacks a safe and stable place to live, and believes this may affect their performance in the course, is urged to contact the Dean of Students (DOS@tamusa.edu) for support. Furthermore, please notify the professor if you are comfortable in doing so. This will enable them to provide any resources they may possess.

Military Affairs: Veterans and active-duty military personnel are welcomed and encouraged to communicate, in advance if possible, and special circumstances (e.g., upcoming deployment, drill requirements, disability accommodations). You are also encouraged to visit the Patriots’ Casa in-person room 202, or to contact the Office of Military Affairs with any questions at military.va@tamusa.edu or (210)784-1397.

Religious Observances: Texas A&M University-San Antonio recognizes the diversity of faiths represented among the campus community and protects the rights of students, faculty, and staff to observe religious holidays according to their tradition. Under the policy, students are provided an opportunity to make up any examination, study, or work requirements that may be missed due to a religious observance provided they notify their instructors before the end of the second week of classes for regular session classes.

The Six-Drop Rule: Students are subject to the requirements of Senate Bill (SB) 1231 passed by the Texas Legislature in 2007. SB 1231 limits students to a maximum of six (6) non-punitive course drops (i.e., courses a student chooses to drop) during their undergraduate careers. A non-punitive drop does not affect the student’s GPA. However, course drops that exceed the maximum allowed by SB 1231 will be treated as “F” grades and will impact the student’s GPA.



Statement of Harassment and Discrimination: Texas A&M University-San Antonio is committed to the fundamental principles of academic freedom, equality of opportunity and human dignity. To fulfill its multiple missions as an institution of higher learning, A&M-San Antonio encourages a climate that values and nurtures collegiality and the uniqueness of the individual within our state, nation, and world. All decisions and actions involving students and employees should be based on applicable law and individual merit. Texas A&M University-San Antonio, in accordance with applicable federal and state law, prohibits discrimination, including harassment, on the basis of race, color, sex, religion, national origin, age, disability, genetic information, veteran status, sexual orientation, gender identity, gender expression, or pregnancy/parenting status. Individuals who believe they have experienced harassment or discrimination prohibited by this statement are encouraged to contact the appropriate offices within their respective units.

Texas A&M University-San Antonio faculty are committed to providing a safe learning environment for all students and for the university as a whole. If you have experienced any form of sex- or gender-based discrimination or harassment, including sexual assault, sexual harassment, domestic or dating violence, or stalking, know that help and support are available. A&M-San Antonio's Title IX Coordinator can support those impacted by such conduct in navigating campus life, accessing health and counseling services, providing academic and housing accommodations, and more. The university strongly encourages all students to report any such incidents to the Title IX Coordinator. Please be aware that all A&M-San Antonio employees (other than those designated as confidential resources such as counselors and trained victim advocates) are required to report information about such discrimination and harassment to the university. This means that if you tell a faculty member about a situation of sexual harassment or sexual violence, or other related misconduct, the faculty member must share that information with the university's Title IX Coordinator (titleix@tamusa.edu, 210-784-2061, CAB 439K). If you wish to speak to a confidential employee who does not have this reporting requirement, you can contact the Student Counseling Center at (210) 784-1331 or visit them in Madla 120.

Pregnant/Parenting Students: Texas A&M-San Antonio does not require a pregnant or parenting student, solely because of that status or issues related to that status, to (1) take a leave of absence or withdraw from their degree or certificate program; (2) limit the student's studies; (3) participate in an alternative program; (4) change the student's major, degree, or certificate program; or (5) refrain from joining or cease participating in any course, activity, or program at the University. The university will provide reasonable accommodations to pregnant students that would be provided to a student with a temporary medical condition and that are related to the health and safety of the student and the student's unborn child. These could include maintaining a safe distance from substances, areas, and activities known to be hazardous to pregnant individuals and their unborn child; excused absences because of illness or medical appointments; modified due dates for assignments; rescheduled tests/exams; taking a leave of absence; and being provided access to instructional materials and video recordings of lectures for excused absences, if these would be provided to any other student with an excused absence. Pregnant/parenting students are encouraged to contact the Title IX Coordinator with any questions or concerns related to their status (titleix@tamusa.edu; 210-784-2061; CAB 439K).



Texas A&M-San Antonio has also designated the Title IX Coordinator as the liaison officer for current or incoming students who are the parent or guardian of a child younger than 18 years of age. The Title IX Coordinator can provide students with information regarding support services and other resources.

Students' Rights and Responsibilities: The following statement of students' rights and responsibilities is intended to reflect the philosophical base upon which University Student Rules are built. This philosophy acknowledges the existence of both rights and responsibilities, which is inherent to an individual not only as a student at Texas A&M University-San Antonio but also as a citizen of this country.

Students' Rights

1. A student shall have the right to participate in a free exchange of ideas, and there shall be no University rule or administrative rule that in any way abridges the rights of freedom of speech, expression, petition and peaceful assembly as set forth in the U.S. Constitution.
2. Each student shall have the right to participate in all areas and activities of the University, free from any form of discrimination, including harassment, on the basis of race, color, national or ethnic origin, religion, sex, disability, age, sexual orientation, or veteran status in accordance with applicable federal and state laws.
3. A student has the right to personal privacy except as otherwise provided by law, and this will be observed by students and University authorities alike.
4. Each student subject to disciplinary action arising from violations of university student rules shall be assured a fundamentally fair process.

Students' Responsibilities

1. A student has the responsibility to respect the rights and property of others, including other students, the faculty and administration.
2. A student has the responsibility to be fully acquainted with the published University Student Rules found in the Student Handbook, [Student Code of Conduct](#), on our website, University Catalog and to comply with them, as well as federal, state, and local laws.
3. A student has the responsibility to recognize that student actions reflect upon the individuals involved and upon the entire University community.
4. A student has the responsibility to recognize the University's obligation to provide an environment for learning.
5. A student has the responsibility to check their university email for any updates or official university notification.

We expect that students will behave in a manner that is dignified, respectful, and courteous to all people, regardless of sex, ethnic/racial origin, religious background, sexual orientation or disability. Behaviors that infringe on the rights of another individual will not be tolerated.

Students are expected to exhibit a high level of honesty and integrity in their pursuit of higher education. Students engaging in an act that violates the standards of academic integrity will find themselves facing academic and/or disciplinary sanctions. Academic misconduct is any act, or attempt,



which gives an unfair advantage to the student. Additionally, any behavior specifically prohibited by a faculty member in the course syllabus or class discussion may be considered as academic misconduct. For more information on academic misconduct policies and procedures please review the [Student Code of Conduct](#).

Use of Generative AI Permitted Under Some Circumstances or With Explicit Permission

There are situations and contexts within this course where you may be asked to use artificial intelligence (AI) tools to explore how they can be used. Outside of those circumstances, you should not use AI tools to generate content (text, video, audio, images) that will end up in any student work (assignments, activities, discussion responses, etc.) that is part of your evaluation in this course. Any student work submitted using AI tools should clearly indicate with attribution what work is the student's work and what part is generated by the AI. In such cases, no more than 25% of the student work should be generated by AI. If any part of this is confusing or uncertain, students should reach out to their instructor for clarification before submitting work for grading. Use of AI-generated content without the instructor's permission and/or proper attribution in this course qualifies as academic dishonesty and violates Texas A&M-San Antonio's standards of academic integrity.

NOTE: Guidance for how to cite AI-generators, like ChatGPT, can be found here <https://apastyle.apa.org/blog/how-to-cite-chatgpt>

Important Dates:

January 16	First day of class
March 11-17	Spring Break – No classes
March 29	Study Day – No classes
April 13	Last day to drop with an automatic "W"
April 20	Last day to drop a course or withdraw from the University
April 29	Last day of classes
April 30	Study Day – No classes
May 1-7	Final exams

The complete academic calendar is available online:

<https://www.tamusa.edu/academics/academic-calendar/index.html>