



TEXAS A&M UNIVERSITY
SAN ANTONIO

BIOL 3403 Plant Taxonomy Lab

Biology Program, Department of Natural Sciences

Instructor information

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

Office: Science & Technology Building 311L

E-mail: jvaldezb@tamusa.edu

Office hours: W & F 11-1:30 or e-mail appointment, to be conducted via TEAMS

Lab meeting format: F2F Mondays 11:00 to 1:45 pm in CAB 310

Course Description

The Plant Taxonomy Laboratory is designed to enhance your lecture-based learning experience. During the initial activities, you will develop your skill in botanical illustration by sketching various plant tissues and structures observed through microscopy or from preserved specimens. In addition to gaining familiarity with plant tissues and structures, you will explore different plant-derived products that are used in everyday life. As we progress through each session, we will review plant groups in their evolutionary sequence, beginning with the more primitive taxa and advancing to the most recently evolved ones. The course includes two to three field trips, during which we will conduct vegetation surveys, identify plant species, and observe plants in their natural habitats by snapping images with your smartphones. One of the lab activities will introduce you to iNaturalist, a tool designed for photographing and documenting observed plants and animals in the field. You will also have the opportunity to explore various online resources to practice plant and tissue photography, pressing and mounting specimens, and accessing plant collection databases from renowned institutions.

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
Texas Range Plants by Stephan Hatch and Jennifer Pluhar, ISBN 0890965382
- North American Wildland Plants: A Field Guide by James Stubbendieck, Stephan Hatch, and L.M. Landholt
- Trees of Texas Field Guide, Stan Tekiela, ISBN 9781647552190
Guide to Texas Grasses by Robert B. Shaw, ISBN 9781603441865
- Range Plants of Texas Jackie Poole, William Carr, Dana Price, and Jason Singhurst ISBN 9781585445578

Course policies

Attendance: You are required to attend every Lab.

Participation: You are expected to have reviewed the course material for the week and material from previous labs, 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 emailed to jvaldezb@tamusa.edu. This e-mail is intended for communication only. Please do not use Blackboard messaging to reach out to me. No late assignments will be accepted via e-mail unless the instructor has granted it as an accommodation. All assignments are submitted via Blackboard.

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

No make-up Exams are automatically granted: Make-up Exams are granted at the instructor's discretion and cannot be expected unless you have previously communicated your absence in written form or no later than 24 hours from your absence.

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



Lab Evaluation

Lab activities: Labs will be posted on Blackboard. Initially, printouts will be provided by the instructor, and students will print their own copies in future labs. Students will use their binders to include handouts and other printed material provided by the instructor.

- You will be required to bring a letter-size 1-inch binder. In it, you will include lab handouts, relevant information on plant tissue characterization, images and drawings of important plant traits, and note-taking.

Course project:

- Students are expected to work on a group project, dedicating about **15 hours** outside of lab time and class during the semester. We will dedicate some course time to project planning, proposal development, and a project presentation on the last laboratory day.
- Students have 14 weeks to work on the project without including Thanksgiving week and Memorial weekend.
 - Groups should present a one-page project proposal (see proposal guidelines)
 - Each group will have an allotted budget of \$200 for equipment and supplies. These may include plant-growing supplies, equipment, seeds, and plants from a nursery
 - Possible projects:
 - Vegetation composition and leafhopper diversity in native grasslands of San Antonio (Led by A&M-SA graduate student)
 - Vegetation composition at a picnic area off the Medina River in Castroville (Led by Medina River Project Director)
 - Vegetation composition off and Nursery establishment off the Salado Creek at the new Arboretum San Antonio (Led by ASA director)
 - Medicinal, edible plants, ornamental plant propagation and establishment at the A&M-SA community gardens (Led by Dr. Valdez)
 - Native plant species and Interpretative gardens at A&M-SA (Led by Dr. Valdez)
 - Crop nutrient enhancement in hydroponic systems (Led by Student Research Assistants)
 - Presentation: You will give a 20-minute group presentation and submit a written final report of your project.
 - The project product should also be finalized the week before finals

Plant Club: You are encouraged to join the Biology Plant Club to stay engaged in plant-related activities. As a member, you may get help and propose your project as an activity with club volunteers. The Club is currently not a student organization but an interest group led by Lani Ruley, krule02@jaguar.tamu.edu. Please reach out to her for more information



Plant digital and physical collection: With your lab group, you will work on designing and building a plant digital and physical collection. Instructions will be provided during the first week of class. The digital collection will be conducted using PowerPoint and iNaturalist. These will be graded the week before finals. However, entries in the notebook and binder will be checked every week.

GRADING

Instruction	Assessment	Cumulative pts
Lab	Laboratory Activities	180
	Plant collection	20
	Project Presentation	20
	Project Final Report	20

Calculation of Final Grades

- The extra credit earned is added to the 540 total points when calculating your final grade over 100 points

A = 90 – 100 points

B = 80 – 89.9 points

C = 70 – 79.9 points

D = 60 – 69.9 points

F = <59.9 points



BIOL 3404-01L Plant Taxonomy Lab Schedule

wk.	Date	Lecture Topic	Important
1	08/25/2025	Lab 1 Introduction to Plant Tax Lab and Botanical Nomenclature	Lab Safety and Forms are signed,
2	09/01/2025	Labor Day Holiday- No Classes	
3	09/08/2025	Lab 2 Plant Tissue Morphology	Compound & dissecting Microscope + slides
4	09/15/2025	Lab 3 Planting seedlings in raised beds	Students will begin
5	09/22/2025	Lab 4 Plant Pressing and Herbarium specimens, Plant Photography, and iNaturalist	Plant press, laptop computers
4	09/29/2025	Lab 5 Field Trip to Medina River (students will carpool)	Need a tape measure, pruning clippers, and a 1m ruler
5	10/06/2025	Lab 6 Leaves and Flowering Plant Structures + Mounting plant specimens	Plant mounting supplies and flower props
6	10/13/2025	Lab 7 Ferns and Gymnosperms structures	Life plants and gymnosperm props
7	10/20/2025	Lab 8 Ornamental Flowers (Liliales and Asparagales)	Will use all props with plant-derived products
8	10/27/2025	Lab 9 Arecales and Poales (Palms and grasses)	Trip to Phil Hardberger Park Need a tape measure, pruning clippers, and a 1m ruler
9	11/03/2025	Lab 10 Drought Resistance, and Tropical Taxa (students will carpool)	Trip to Botanical Gardens
10	11/10/2025	Students work on the Project	
11	11/17/2025	Lab 11 Fabaceae, Cucurbitaceae, and Malvaceae of Texas	Will observe and draw herbarium specimens, products from grocery
12	11/24/2025	Lab 12 Asterids, lamiids, and campanulids	Herbarium specimens and products from grocery stores and plants from rainbow nursery
13	12/01/2025	Students work on the Project	No lab prep
14	12/04/2025	Final Project presentations	No lab prep

- **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

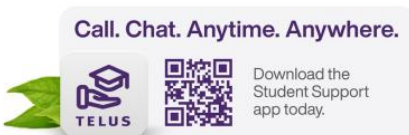
Academic Accommodations for Individuals with Disabilities: Texas A&M University-San Antonio is committed to providing all students with reasonable access to learning opportunities and accommodations in accordance with The Americans with Disabilities Act, as amended, and Section 504 of the Rehabilitation Act. If you experience barriers to your education due to a disability or think you may have a disability, Disability Support Services is located in the Central Academic Building, Suite 210. You can also contact us via phone at (210) 784-1335, visit us <https://www.tamusa.edu/Disability-Support-Services/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 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 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. For more information on SCC services visit <http://tamusa.edu/studentcounseling>

Crisis support is available 24/7 by calling the SCC at 210-784-1331.

Additionally, the TELUS Student Support App provides a variety of mental health resources to including support for in the moment distress, an anonymous peer-to-peer support network, mental health screenings, podcasts, and articles to improve your mental wellbeing.



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/emergency-management/>

Download the SafeZone App (<https://safezoneapp.com/>) 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 by the published Census Date (the first week of class). Any student receiving federal financial aid who does not attend prior to the published Census Date (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://www.tamusa.edu/academics>.

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 submit a CARE referral (<https://www.tamusa.edu/university-policies/Student-Rights-and-Responsibilities/file-a-report.html>) for support. Furthermore, please notify the professor if you are comfortable in doing so. This will enable them to direct you to available resources.

Office Hours: All faculty with teaching assignments should include regularly scheduled office hours on each syllabus in addition to "by appointment." Please review your appointment letter for the number of weekly office hours you are expected to set. Regularly scheduled office hours should also be posted outside your office door (where applicable).

Military Affairs: Veterans and active-duty military personnel are welcome and encouraged to visit the Office of Military Affairs for any questions involving federal or state VA Education Benefits. Visit the Patriots' Casa building, room 202, or 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 traditions. Under the policy, students are provided with an opportunity to make up any examination, study, or coursework 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, equal 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 on our campus and within our

state, nation, and world. All decisions and actions involving students and employees are to 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, or pregnancy/parenting status. Individuals who believe they have experienced harassment or discrimination prohibited by this statement are encouraged to contact the University's Civil Rights Officer at 210-784-2061 or titleix@tamusa.edu.

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 based on sex, 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, sexual violence, or other related sex-based 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 such reasonable modifications to pregnant students as would be provided to a student with a temporary medical condition that is 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. Young Jaguars: can support parenting students with daycare who meet this criteria: Must be enrolled in classes at TAMUSA in the current semester. Must be Pell eligible or a single parent. They serve children ages 3 to 12 years old. Children must be enrolled in Pre-K-3 through 6th grade.

youngjaguars@tamusa.edu (210) 784-2636

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, gender identity, gender expression, and pregnancy/parenting 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 students' 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, and University Catalog, and to comply with them, as well as with 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 a safe environment for learning.
5. A student has the responsibility to check their university email for any updates or official university notifications.

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. Conduct that infringes 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 (<https://www.tamusa.edu/university-policies/student-rights-and-responsibilities/documents/Student-Handbook-2022-23.pdf>) or visit the resources available in the OSRR website (<https://www.tamusa.edu/university-policies/student-rights-and-responsibilities/academic-integrity.html>).

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's 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.

Use of artificial intelligence (AI) tools, including ChatGPT, is permitted in this course for students who wish to use them. To adhere to our scholarly values, students must cite any AI-generated material that informed their work (this includes in-text citations and/or use of quotations, and in your reference list). Using an AI tool to generate content without proper attribution qualifies as academic dishonesty and violates Texas A&M-San Antonio's standards of academic integrity.

<https://apastyle.apa.org/blog/how-to-cite-chatgpt>

Important Dates: Fall 2025 Regular 16-Week Session

August 25	First day of class
September 1	Labor Day Holiday – No classes
September 10	Census Date
November 14	Last day to drop with an automatic “W”
November 25	Last day to withdraw from the University
November 26	Study Day – No classes
November 27-29	Thanksgiving Holiday – No classes
December 4	Last day of classes
December 5	Study Day – No classes
December 6-12	Final exams
December 16	Commencement

The complete academic calendar is available online: <https://www.tamusa.edu/academics/academic-calendar/index.html>