



## PLS 306, Plant Propagation

COURSE SYLLABUS: SPRING 2024

### INSTRUCTOR INFORMATION

**Instructor:** Desire Djidonou, (Dr. D), Assistant Professor – Urban/Sustainable Horticulture

**Office Location:** AgET 248

**Office Hours:** T&W 1 – 2 pm (AgET) or by appointment

**Office Phone:** (903) 886-5679

**Office Fax:** (903) 886-5990

**University Email Address:** desire.djidonou@tamuc.edu

**Preferred Form of Communication:** email

### COURSE INFORMATION

#### Time & location:

Class will meet M & W from 10:00a - 10:50a Location: PSC 101.

#### Materials – Textbooks, Readings, Supplementary Readings

Recommended Textbook

***Hartmann & Kester's Plant Propagation: Principles and Practices, 9<sup>th</sup> Edition.*** 2018. Fred T. Davies, Jr., Robert L. Geneve, and Sandra B. Wilson. Pearson.

An eText can be purchased from Pearson+ (<https://www.pearson.com/en-us/pearsonplus.html>) at \$9.99 a month.

#### Course Description

This course provides a thorough overview of the principles underlying the science of plant propagation and the technical practices associated with sexual and asexual plant propagation. The laboratory exercises provide additional in-depth information and hands-on practices that illustrate methods of propagating plants by seeds, cuttings, grafting, budding, bulbs, divisions, layers, and micropropagation (tissue culture). Basic plant biology concepts, environmental control of facilities associated with propagation structures and growing media requirements will be discussed.

**Prerequisites:** PLS 1315, 1115, or PLS 1307, 1107

*The syllabus/schedule are subject to change.*

## **Student Learning Outcomes**

At the end of this course, students should have:

1. developed a comprehensive knowledge and understanding of the basic scientific principles underlying sexual and asexual plant propagation;
2. demonstrated proficiency in propagation of plants by seeds, cuttings, grafting, budding, layering, division, and micropopagation (tissue culture);
3. developed an understanding of specific kinds of plants and methods by which those plants can be propagated most successfully;
4. developed an in-depth knowledge of the technical terminology and vocabulary associated with the plant propagation and their proper use in oral discussion and writing.

## **COURSE REQUIREMENTS**

### **Minimal Technical Skills Needed**

Basic knowledge of Microsoft office (Word, Excel, and PowerPoint) and familiarity with D2L. Students will need reliable internet access to retrieve course materials and complete online quizzes and exams if needed.

### **Instructional Methods**

Lectures: The lecture materials (PowerPoint presentation, additional readings) will be posted on the course D2L shell prior to class for students to download.

Labs: The lab activities provide some hands-on experiences on techniques of plant propagation specific to each plant type. Each lab session will involve presentation of lab instructions and short lecture followed by greenhouse propagation techniques. Students are required to attend all lab sessions as these cannot be made up. Some labs will be group exercises but your active participation is essential as each student will be graded individually on lab performance based on written reports.

NOTE: Some lab activities will require monitoring of propagated materials outside of the scheduled class time. As such, students will need to coordinate within group members to share these responsibilities.

Field Trip: We will make arrangements with local nurseries (Tawakoni Plant Farm and Casa Flora) for a visit to learn about their activities.

## **Student Responsibilities**

### **Expectation of Students**

1. Attendance to all classes and lab sessions is required unless ill;
2. Be on time to class and lab;
3. Active participation in classroom discussions on topics brought out in lecture is highly encouraged;
4. Completion of homework assignments, quizzes, lab reports by the due dates;
5. Late submission of assignments or make-up quizzes, exams and other work will only be allowed for legitimate, pre-excused absence.

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## ASSESSMENTS and GRADING

### Course evaluation

Student's final grade will be based on 700 points total from exam, quizzes, assignments, lab reports

Items	Points	Percentage
Exam 1	100	15
Exam 2	100	15
Exam 3	150	20
Quizzes	100	15
Homework assignments	50	5
Lab and field trip reports	200	30

Exams: (Vocabulary, Multiple Choice, T/F, Matching, and Short Answer): There will be two one-hour exams and one 2-hour final exam. The exams will include material from lecture and hands-on activities. Exam dates are given below in the tentative semester schedule.

Quizzes: There will be 4 to 5 quizzes between exams intended to help you review concepts covered in the course. All quizzes will be available online for 48 hours in the D2L portal. The quiz will involve short questions to evaluate student learning of each complete chapter

Homework assignments: A set of questions and terminologies will be periodically assigned to you as homework. These terms are essential for understanding plant propagation and are meant for review and study guide for exams.

Lab reports: You will be required to submit an individual report on each lab activity.

Field trip: Take note and be attentive and ask questions. Submit a report describing the nursery visited, information provided, lesson learned, and practical knowledge gained.

### Grade Assignment

Letter grades for the course will be assigned according to the chart below:

A = 90%-100%

B = 80%-89%

C = 70%-79%

D = 60%-69%

F = 59% or Below

## TECHNOLOGY REQUIREMENTS

### LMS

All course sections offered by Texas A&M University-Commerce have a corresponding course shell in the myLeo Online Learning Management System (LMS). Below are technical requirements

LMS Requirements:

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<https://community.brightspace.com/s/article/Brightspace-Platform-Requirements>

LMS Browser Support:

[https://documentation.brightspace.com/EN/brightspace/requirements/all/browser\\_support.htm](https://documentation.brightspace.com/EN/brightspace/requirements/all/browser_support.htm)

YouSeeU Virtual Classroom Requirements:

<https://support.youseeu.com/hc/en-us/articles/115007031107-Basic-System-Requirements>

## **ACCESS AND NAVIGATION**

You will need your campus-wide ID (CWID) and password to log into the course. If you do not know your CWID or have forgotten your password, contact the Center for IT Excellence (CITE) at 903.468.6000 or [helpdesk@tamuc.edu](mailto:helpdesk@tamuc.edu).

**Note:** Personal computer and internet connection problems do not excuse the requirement to complete all course work in a timely and satisfactory manner. Each student needs to have a backup method to deal with these inevitable problems. These methods might include the availability of a backup PC at home or work, the temporary use of a computer at a friend's home, the local library, office service companies, Starbucks, a TAMUC campus open computer lab, etc.

## **COMMUNICATION AND SUPPORT**

If you have any questions or are having difficulties with the course material, please contact your Instructor.

### **Technical Support**

If you are having technical difficulty with any part of Brightspace, please contact Brightspace Technical Support at 1-877-325-7778. Other support options can be found here:

<https://community.brightspace.com/support/s/contactsupport>

## **COURSE AND UNIVERSITY PROCEDURES/POLICIES**

### **Course Specific Procedures/Policies**

Attendance to lectures and lab activities are required unless ill.

### **Syllabus Change Policy**

The syllabus is a guide. Circumstances and events, such as student progress, may make it necessary for the instructor to modify the syllabus during the semester. Any changes made to the syllabus will be announced in advance.

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## University Specific Procedures

### Student Conduct

All students enrolled at the University shall follow the tenets of common decency and acceptable behavior conducive to a positive learning environment. The Code of Student Conduct is described in detail in the [Student Guidebook](#).

<http://www.tamuc.edu/Admissions/oneStopShop/undergraduateAdmissions/studentGuidebook.aspx>

Students should also consult the Rules of Netiquette for more information regarding how to interact with students in an online forum: <https://www.britannica.com/topic/netiquette>

### TAMUC Attendance

For more information about the attendance policy please visit the [Attendance](#) webpage and [Procedure 13.99.99.R0.01](#).

<http://www.tamuc.edu/admissions/registrar/generalInformation/attendance.aspx>

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/academic/13.99.99.R0.01.pdf>

### Academic Integrity

Students at Texas A&M University-Commerce are expected to maintain high standards of integrity and honesty in all of their scholastic work. For more details and the definition of academic dishonesty see the following procedures:

[Undergraduate Academic Dishonesty 13.99.99.R0.03](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/undergraduates/13.99.99.R0.03UndergraduateAcademicDishonesty.pdf>

[Graduate Student Academic Dishonesty 13.99.99.R0.10](#)

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/13students/graduate/13.99.99.R0.10GraduateStudentAcademicDishonesty.pdf>

### AI use in course

Texas A&M University-Commerce acknowledges that there are legitimate uses of Artificial Intelligence, ChatBots, or other software that has the capacity to generate text, or suggest replacements for text beyond individual words, as determined by the instructor of the course.

Any use of such software must be documented. Any undocumented use of such software constitutes an instance of academic dishonesty (plagiarism).

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Individual instructors may disallow entirely the use of such software for individual assignments or for the entire course. Students should be aware of such requirements and follow their instructors' guidelines. If no instructions are provided the student should assume that the use of such software is disallowed.

In any case, students are fully responsible for the content of any assignment they submit, regardless of whether they used an AI, in any way. This specifically includes cases in which the AI plagiarized another text or misrepresented sources.

13.99.99.R0.03 Undergraduate Academic Dishonesty

13.99.99.R0.10 Graduate Student Academic Dishonesty

### **Students with Disabilities-- ADA Statement**

The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you have a disability requiring an accommodation, please contact:

#### **Office of Student Disability Resources and Services**

Texas A&M University-Commerce

Gee Library- Room 162

Phone (903) 886-5150 or (903) 886-5835

Fax (903) 468-8148

Email: [studentdisabilityservices@tamuc.edu](mailto:studentdisabilityservices@tamuc.edu)

Website: [Office of Student Disability Resources and Services](http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/)

<http://www.tamuc.edu/campusLife/campusServices/studentDisabilityResourcesAndServices/>

The Counseling Center at A&M-Commerce, located in the Halladay Building, Room 203, offers counseling services, educational programming, and connection to community resources for students. Students have 24/7 access to the Counseling Center's crisis assessment services by calling 903-886-5145. For more information regarding Counseling Center events and confidential services, please visit [www.tamuc.edu/counsel](http://www.tamuc.edu/counsel)

### **Nondiscrimination Notice**

Texas A&M University-Commerce will comply in the classroom, and in online courses, with all federal and state laws prohibiting discrimination and related retaliation on the basis of race, color, religion, sex, national origin, disability, age, genetic information or veteran status. Further, an environment free from discrimination on the basis of sexual orientation, gender identity, or gender expression will be maintained.

### **Campus Concealed Carry Statement**

*The syllabus/schedule are subject to change.*

Texas Senate Bill - 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in Texas A&M University-Commerce buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and A&M-Commerce Rule 34.06.02.R1, license holders may not carry a concealed handgun in restricted locations.

For a list of locations, please refer to the [Carrying Concealed Handguns On Campus](#) document and/or consult your event organizer.

Web url:

<http://www.tamuc.edu/aboutUs/policiesProceduresStandardsStatements/rulesProcedures/34SafetyOfEmployeesAndStudents/34.06.02.R1.pdf>

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all A&M-Commerce campuses. Report violations to the University Police Department at 903-886-5868 or 9-1-1.

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## COURSE OUTLINE / CALENDAR

Lecture Schedule: M&W 10:00a-10:50a Location: PSC 101

Module	Week	Date	Lecture	Reading Assignment
1- General Aspect of Propagation	1	Jan 10 Wed	Course introduction and syllabus review	-
	2	Jan 15 Mon	No class (Martin Luther King Jr. Day)	
		Jan 17 Wed	Intro to Plant Propagation	Chapter 1
	3	Jan 22 Mon	Biology of Plant Propagation	Chapter 2
		Jan 24 Wed	The Propagation Environment	Chapter 3
2- Seed Propagation	4	Jan 29 Mon	Seed Development	Chapter 4
		Jan 31 Wed	Seed Development	Chapter 4
	5	Feb 5 Mon	Principles and Practices of Seed Selection	Chapter 5
		Feb 7 Wed	Principles and Practices of Seed Selection	Chapter 5
	6	Feb 12 Mon	Principles of Propagation from Seeds	Chapter 7
		Feb 14 Wed	Principles of Propagation from Seeds	Chapter 7
	7	Feb 19 Mon	<b>Exam 1</b>	Chapters 3-7
		Feb 21 Wed	<b>Exam 1 review</b>	
3- Vegetative Propagation	8	Feb 26 Mon	Principles of Propagation by Cuttings	Chapter 10
		Feb 28 Wed	Principles of Propagation by Cuttings	Chapter 10
	9	Mar 4 Mon	Techniques of Propagation by Cuttings	Chapter 11

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		Mar 6 Wed	Techniques of Propagation by Cuttings	Chapter 11
	10	Mar 11 Mon	No class (Spring Break)	
		Mar 13 Wed	No class (Spring Break)	
	11	Mar 18 Mon	Principles of Grafting and Budding	Chapter 12
		Mar 20 Wed	Techniques of Grafting	Chapter 13
	12	Mar 25 Mon	Techniques of Grafting	Chapter 13
		Mar 27 Wed	Techniques of Budding	Chapter 14
	13	Apr 1 Mon	<b>Exam 2</b>	Chapters 9-14
		Apr 3 Wed	Layering and Its Natural Modifications	Chapter 15
	14	Apr 8 Mon	Propagation by Specialized Stems and Roots	Chapter 16
		Apr 10 Wed	Propagation by Specialized Stems and Roots	Chapter 16
4- Tissue Culture	15	Apr 15 Mon	Principles and Techniques of Micropropagation from Meristematic Tissue	Chapter 17
		Apr 17 Wed	Principles and Techniques of Micropropagation from Meristematic Tissue	Chapter 17
	16	Apr 22 Mon	<b>Field Trips</b>	
		Apr 24 Wed	Principles and Techniques of Plant Tissue Culture from Non-meristematic Tissue	Chapter 18

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	17	Apr 29 Mon	Principles and Techniques of Plant Tissue Culture from Non-meristematic Tissue	Chapter 18
		May 1 Wed	Class Review	
	18	May 6 Mon (10:30 – 12:30)	<b>Final Exam</b>	Chapter 15-18

Laboratory schedule: M 1:00pa-2:50p Location: PSC 101

Week	Date	Lab Exercises	Location
1	Jan 10 Wed	Introduction and lab syllabus, Greenhouse tour, lab rules and procedures	PSC 101
2	Jan 15 Mon	No lab (Martin Luther King Jr. Day)	
3	Jan 22 Mon	Seed Propagation: Germination Environment and Seed Viability	PSC 101
4	Jan 29 Mon	Seed Propagation: Germination Environment and Seed Viability	PSC 101
5	Feb 5 Mon	Seed Propagation: Combating Physical and Physiological Dormancy	PSC 101
6	Feb 12 Mon	Tissue Culture	Dr. Song Lab, AgriLife Dallas
7	Feb 19 Mon	Transplanting Seedlings	<b>Tawakoni Tour</b>
8	Feb 26 Mon	Cutting Propagation	PSC 101
9	Mar 4 Mon	Herbaceous Cutting Propagation	PSC 101
10	Mar 11 Mon	No lab Spring break	PSC 101
11	Mar 18 Mon	Propagating Ground Covers Seeding tomato for vegetable grafting	
12	Mar 25 Mon	Bench Grafting and Budding	PSC 101
13	Apr 1 Mon	Tomato Grafting	PSC 101
14	Apr 8 Mon	Evaluate Tomato Grafting	PSC 101
15	Apr 15 Mon	Field Budding	PSC 101
16	Apr 22 Mon	Layering; Propagation by Specialized Stems and Roots	PSC 101
17	Apr 29 Mon	Field trip	<b>Tawakoni Tour Casa Flora</b>

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