



Spring 2019

**EH 43
Plant Propagation/Production
Syllabus**

Instructor: Steve Gambрил

E-mail: Steve.Gambрил@Reedleycollege.edu

Class Meeting: Monday/ Wednesday

5:30-6:20 (lec.) 6:30-7:45 pm (lab)

Room: LSH 1

Units: 03

Prerequisites: None

Course Description:

Plant propagation and production Practices with emphasis on nursery operations including sexual and asexual reproduction, planting, transplanting, fertilizing, plant pest and disease control, structures and site layout. Preparation and use of propagating and planting mediums, the use and maintenance of common tools and equipment and regulations pertaining to plant production.

Course Goals:

- Demonstrate the ability to grow plants from propagation to market size.
- Practice the procedures of plant propagation including seed, cuttings, budding, grafting, layering, and division.
- Determine the proper timing for the various propagation and production techniques appropriate to the plant species and propagation method

Primary Learning Outcomes:

The student will:

- Explain the effect of temperature, water, humidity, and fertility on plant growth
- Describe the principles of plant reproduction, sexual and asexual
- Exhibit the personal skills (attitude, work habits, etc.) For successful employment in the wholesale and retail nursery business
- Discuss control procedures for common garden, landscape, and greenhouse pests
- Demonstrate proper merchandising techniques

- Identify, use, and maintain common propagation, nursery and landscape tools and equipment
- Plan and design a nursery layout
- Construct nursery facilities
- Develop and present a propagation method demonstration
- Describe the various types of wholesale plant production industries
- Students identify, organize, plan and allocate resources
- Plan and design a wholesale nursery layout
- Develop Interpersonal skills
- Develop a group presentation on a propagation method
- In the laboratory setting, students work cooperatively in meeting various objectives
- Acquires and uses information
- Identify common plants of landscape value in the area
- Discuss control procedures for common garden, landscape, and greenhouse pests
- Understands complex interrelationships
- Describe the principles of plant reproduction, sexual and asexual
- Describe and differentiate the processes of osmosis, transpiration, respiration, photosynthesis
- Explain the effect of temperature, water, humidity, and fertility on plant growth
- Works with a variety of technologies
- Practice the procedures of plant propagation including seed, cuttings, budding, layering, grafting, division
- Formulate planting and propagating media
- Measure and mix fertilizers and apply them

Lab Dress: Work clothes, or coveralls. No loose clothing. Long hair must be restrained. Closed toe shoes and pants are required. Safety glasses will be worn at all times when in a lab situation and teacher requires. You may get dirty in class so please dress appropriate.

Required Text:

Hartman, H.T., Kester, D.E., Davies, F.T. and Geneve, R.L. *Hartmann and Kester's Plant Propagation: Principles and Practices*, ed. 8th Prentice-Hall, Saddle River, NJ, 2011.

Students are expected to have read the assigned reading before lecture.

Students Responsibility:

- Students are strongly advised not to miss labs since this time may be difficult or impossible to make them up.
- No makeup's will be allowed unless by prior permission of the instructor.
- Cleanup of the shop is part of the laboratory exercise. Students not participating in shop cleanup will have points deducted from their project grades.
- Late assignments are subject to a 20% penalty. No lab projects will be accepted after the final exam.
- Handouts/Canvas assignments will be given in every class or laboratory.

Tentative Schedule:

***You will be responsible for completing the discussion questions for each assigned chapter. Due Dates are listed below for the readings and lab dates**

Week/Date	Chapter	Lab
Week 1 January 14	1 and 3 Intro, Environmental Factors	Lab 1: Lab safety Greenhouses and propagation area
Week 2 January 21	2 Biology of Plant Propagation	Lab 2: Propagation of Plants by Seed Stratification and Scarification
Week 3 January 28	4-5 Seed Development, Seed Selection	Lab 3: Tissue Culture Propagation Media Preparation
Week 4 February 4	6-7 Seed Production, Principles of Propagation from Seed	Lab 4: Tissue Culture Propagation African Violet Culture
Week 5 February 11	8 Techniques of Propagation by Seed	Lab 5: Cutting Propagation Propagation by deciduous hardwood
Week 6 February 18	9 Principles of Propagation by Cuttings	Lab 6: Cutting Propagation Propagation by evergreen hardwood
Week 7 February 25	10 Techniques of Propagation by Cuttings	Lab 7: Cutting Propagation Propagation by herbaceous cuttings
Week 8 March 4	11 Principles of Grafting and Budding	Lab 8: Propagation by Grafting Knife sharpening and pre-grafting exercise
Week 9 March 11	12 Techniques of Grafting	Lab 9: Propagation by Grafting Bark and cleft grafts
Week 10 March 18	13 Techniques of Budding	Lab 10: Propagation by Grafting Whip-and-tongue grafts
Week 11 March 25	14 Layering and its Natural Modifications	Lab 11: Propagation by Grafting Budding

Week 12 April 1	15 Propagation by Stems/Roots	Lab 12: Tissue Culture Propagation #3 Subcultures and soil establishment
Week 13 April 8	16 Principles and Practices of Clonal Selection	Lab 13: Layering and Underground Storage Propagation by bulbs and corms
Week 14 April 22	17 Principles of Tissue Culture and Micropropagation	Lab 14: Propagation by Division
Week 15 April 29	18 Techniques of Micropropagation	Lab 15: Herbaceous Grafting Seedling grafting and Cactus grafting
Week 16 May 6	19 Propagation Methods and Rootstocks for Fruit & Nuts	Lab 16: Free Lab Lab Reports due
Week 17 May 13	20-21 Propagation of Ornamental Trees, Shrubs, Woody Herbaceous Perennials	Lab 17: Class Presentations
Week 18 May 20	TBD	

Important Dates:

January 21 Martin Luther King Jr. Day	NO SCHOOL
February 18 Washington's Day	NO SCHOOL
March 15 Last day to withdraw	
April 15-22 Spring Recess	NO SCHOOL

Subject to Change:

This syllabus and schedule are subject to change. If you are absent from class, it is your responsibility to check on any changes made while you were absent.

Evaluation:

Students will be evaluated on the basis of their performance on quizzes (announced and unannounced), written assignments, unit tests, lab projects and final examination according to the following scale.

Writing Assignments	40%
Laboratory Reports, Chapter Questions, Written Homework	
Skill Demonstrations/Problem-solving	20%
Class Performance, Field Work, Homework Problems	
Examinations	40%
Multiple Choice, True/False, Matching, Short Essay	

Your grade in this course will be based on the following scale:

A – 90 – 100%
B – 80 – 89%
C – 70 – 79%
D – 60 – 69%
F – 59% and below

Attendance

Lecture: Attendance is required and roll will be taken at each class meeting. There is no difference between an “excused” or “unexcused” absence. Any student who misses more than two weeks of class meetings within the first 9 weeks of class may be dropped from the class by the instructor.

Lab: Attendance in all labs is mandatory. Students must make prior arrangements with the instructor to be excused from lab. At that time, the instructor will determine, if any, make-up work will be appropriate.

Quizzes: Students must make prior arrangements with the instructor to make up any quizzes.

Tests: Make-up tests are limited to students who have made arrangements with the instructor prior to the required testing period.

Grading Policy/Scales/Evaluation Criteria

For maximum point consideration, all written assignments and term reports should be typed and double-spaced. Lecture assignments (homework) will be completed on canvas and turned in on time or will be penalized 20% each week it is late. Late laboratory assignments turned in within one week of the required due date will be accepted with a penalty equal to 20% of the maximum points. Any lab assignment turned in after that time up to the last regular class meeting will be accepted with a 50% penalty.

College Policies:**Cheating & Plagiarism**

In keeping with the philosophy that students are entitled to the best education available, and in compliance with Board Policy 5410, each student is expected to exert an entirely honest effort toward attaining an education. Violations of this policy will result in disqualification for the course.

Accommodations for Students with Disabilities

If you have a verified need for an academic accommodation or materials in alternate media (i.e., Braille, large print, electronic text, etc.) per the Americans with Disabilities Act (ADA) or Section 504 of the Rehabilitation Act, please contact the instructor as soon as possible.

Work Ethic - Most students are enrolled in college classes to obtain a quality job or to enhance their skills for advancement with their current employment situation. Employers look for a punctual, responsible individual who is prepared to go to work. Our goal is to replicate the workplace environment where a student can develop and demonstrate these desirable traits.

- Punctual: It is customary to arrive on time or before class starts.
- Responsible: It is expected that an employee work every scheduled work day.
- Prepared: It is expected that an employee be prepared when he/she arrives for work. Students must have appropriate clothing, safety glasses, and appropriate footwear to participate in the laboratory. Student is also required to have class material, such as iPad, textbook, paper and other class supplies to write and take notes with.

Language - English is expected to be spoken in class for the following reasons:

- All course content and materials are presented in English and class discussions all take place in English.
- All lab activities are conducted in groups and must have effective communication between all group members.
- Shop activities can be hazardous and it is vital that instructors receive feedback in English to ensure safe practices.
- This policy is designed so that instructors and all students may communicate in a common language.
- All individuals must have freedom of expression and are allowed and encouraged to communicate in the language of their choice outside of class times, including breaks.

Behavioral Standards

- Each student is responsible for his/her own work. Written assignments are not group assignments and no credit will be awarded for students who turn in the same work. Students suspected of cheating on tests and quizzes will receive no credit for that particular assignment and may be removed from the class.
- It is considered polite to turn off cell phones when in the classroom or shop. Please do so.