

# Course Syllabus

Horticulture/Agronomy 250 (Plant Propagation) – Spring 2020

Instructor: Dr. G.A. Picchioni, Skeen Hall N344, 646-1820 ([gpicchio@nmsu.edu](mailto:gpicchio@nmsu.edu))

Picchioni's Office Hours: 8-10 am M & W or by appointment.

Graduate TA: Jason Fechner ([jfechner@nmsu.edu](mailto:jfechner@nmsu.edu))

Course Description: **PLANT PROPAGATION** (Section M01, 3 cr.; 2+2P). Principles and practices of seed (sexual) and vegetative (asexual) propagation of horticultural plants.

Meeting Times:     **Lectures:** 12:00 to 12:50 pm (MW); GT 200  
                              **Labs:** 4:30 to 6:30 pm (M); Skeen Hall W139 (unless noted)

## Learning Objectives:

- Practical methods of propagating plants by seed, cuttings, layering, grafting, division, and tissue culture through experiential, “hands-on” laboratories.
- Relevant physiological principles involved in propagating horticultural plants through lecture discussions and readings.

Textbook (Required Reading): Davies, F.T. Jr., R.L. Geneve, and S.B. Wilson. 2018. Hartmann and Kester's Plant Propagation: Principles and Practices. 9th Ed. Pearson Education, New York. Purchasing of text at NMSU bookstore (or elsewhere) is recommended, although if not purchased, bookstore may have a less expensive rental policy. The book will also be on reserve at Zuhl for 2-hour in-library checkout.

What I expect from students: Enjoy the subject, attend class regularly, be on time, meet the deadlines, participate in discussions, and demonstrate that you want to be here. Please turn off cell phones, laptops, ipods, and anything else during class.

What students can expect from me: Active labs, good science, fairness, willingness to help, approachable, and concern about quality of students' work and training.

Electronic Resources: We will use Canvas, web tools, and online journal articles. Class information, lectures, lab manual, and web resources will be posted on Canvas. Canvas email will be used by students and instructor as necessary outside of class. Students must use their NMSU email account and not personal email accounts.

Class Attendance and Excused Absences: Good attendance is defined as missing no more than three lecture meetings and no more than one lab meeting. Attendance will be recorded and may affect borderline course grades (see below). **WHAT IS AN EXCUSED ABSENCE FOR MISSING AN EXAM OR ASSIGNMENT DUE DATE?** 1) An illness that is verified in writing by a physician's note and presented to instructor the first day returning to class, OR 2) participating in a NMSU-sponsored activity that is verified by a written note from sponsoring department and presented to instructor before participation. Any other absences will not be considered excused absences.

Lecture Examinations: There will be three exams, each noncumulative. No makeup exams will be available. For an excused absence only, a student may take a cumulative

final exam, and for missing the final exam due to excused absence, and “I” grade for course will be reported.

Lab Manual: Students will complete seven laboratory reports and submit manual to TA by **5 pm on Friday, May 8**. Student’s name must appear inside the cover page. *There will be one drop in grade for each weekday (M-F) late*. Completed hard copy lab manuals will be accepted by TA in person or in TA’s mailbox in Skeen N127.

Laboratory Assignments/Quizzes: Students will be assigned weekly laboratory homework or quizzes by the TA and must turn in the work by the TA's specified deadline. There will be no makeups for missing or late work unless student has an excused absence. The instructor and TA will not be able to conduct specific labs more than the one time listed on lab schedule, thus the TA may determine a suitable independent make-up assignment if a student misses a lab due to excused absence.

FFA CONTEST AND SERVICE LEARNING: As part of the lab grade, students will assist in preparing and conducting the state FFA Floriculture Contest at south entrance of the NMSU Pan American Center scheduled for Friday, April 3 from 7:30 am to 12:00 pm. Preparatory work before the contest will be necessary in addition to work at the contest. Student responsibilities will be determined before the contest and must include a minimum two-hour time block. Students must enter name on a sign-up sheet to document work. Written excuses will be provided by the instructor to excuse students from classes.

<u>Grading Criteria:</u>	<u>Category</u>	<u>Percent of Total Grade</u>
	Three Exams (16.67% each)	50
	Lab Manual and Lab Attendance	30
	Lab Assignments, Quizzes, FFA Contest	20
	<b>Total</b>	<b>100</b>

Grading Scale: 90-100%=A, 80-89%=B, 70-79%=C, 60-69%=D, ≤59%=F

Fractional Grading: Students with good attendance (see above) and whose final grade is borderline (i.e., 59%, 69%, 79%, etc.) may be rewarded the next higher fractional grade (i.e., B- for 79%, A- for 89%, etc.). Students who do not have good attendance will not receive a higher fractional grade.

Six-Week Early Performance Grades: A six-week early performance grade for this course will be posted. You will be able to access your grade through your MY.NMSU.EDU under the Student Tab: Click on Student Record / Midterm Grades. In this class the six-week early performance grade will reflect your performance on only a portion of the total graded work in this course. If you are doing well, congratulations on your success – but be mindful that there is still a significant portion of the graded work yet to be completed. If you are doing poorly, or not as well as you would like, please meet with me to discuss how you can improve. If you have concerns about your progress in multiple courses and need to consider a schedule change, meet with your academic advisor.

Discrimination and Disability Accommodation: Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act Amendments Act (ADA) covers issues

relating to disability and accommodations. If a student has questions or needs an accommodation in the classroom, they should contact Student Accessibility Services, Corbett Center Student Union Room 208, 575-646-6840 (V/TTY), [sas@nmsu.edu](mailto:sas@nmsu.edu). All medical information is treated confidentially.

New Mexico State University, in compliance with applicable laws and in furtherance of its commitment to fostering an environment that welcomes and embraces diversity, does not discriminate on the basis of age, ancestry, color, disability, gender identity, genetic information, national origin, race, religion, retaliation, serious medical condition, sex (including pregnancy), sexual orientation, spousal affiliation, or protected veteran status in its programs and activities, including employment, admissions, and educational programs and activities. Inquiries may be directed to the Executive Director of the Office of Institutional Equity, O'loughlin House, P.O. Box 30001, 1130 E. University Avenue, Las Cruces, NM 88003; 575-646-3635; 575-646-7802 (TTY); [equity@nmsu.edu](mailto:equity@nmsu.edu).

Title IX prohibits sexual harassment, sexual assault, intimate partner violence, stalking, and retaliation. For more information on discrimination or Title IX, or to file a complaint, contact the Office of Institutional Equity

Other NMSU Resources:

NMSU Police Department: (575) 646-3311

NMSU Police Victim Services: (575) 646-3424

NMSU Counseling Center: (575) 646-2731

NMSU Dean of Students: (575) 646-1722

For Any On-campus Emergencies: 911

Academic and non-academic misconduct. The Student Code of Conduct defines academic misconduct, non-academic misconduct and the consequences or penalties for each. The Student Code of Conduct is available in the NMSU Student Handbook online: <http://studenthandbook.nmsu.edu/>. Academic misconduct is explained here: <http://studenthandbook.nmsu.edu/student-code-of-conduct/academic-misconduct/>.

## LECTURE SCHEDULE

Date	Topic	Textbook chapters*
Jan. 22	Course Guidelines, Introduction, Literature Plant Propagation in Review, Relevant Plant Biology	--- 1-3
Jan. 27	Plant Propagation in Review, Relevant Plant Biology Sanitation Practices in Greenhouse	1-3 3 (p. 107-110)
Jan. 29-Feb. 3	Principles of Seed Propagation	4-8
Feb. 5-10	Clones in Horticulture	9
Feb. 12-17	Propagation of Plants by Cuttings (General)	10-11
Feb. 19	Exam I	---
Feb. 24-26	Anatomical Basis, Adventitious Root & Shoot Formation	10
Mar. 2	FFA Floriculture Contest Job Assignments	---
Mar. 4-9	Cuttings, Hormones, Plant Growth Regulators	10-11
Mar. 11-18	Horticultural Aspects, Cutting Propagation	10-11
Mar. 23-27	Spring Break	---
Mar. 30-Apr. 1	Layering Principles and Techniques	15
Apr. 6	Exam II	---
Apr. 8-20	Grafting and Budding Principles, Techniques	12-14
Apr. 22-27	Divisions, Specialized Structures	16
Apr. 29-May 4	Plant Micropropagation and Tissue Culture	17-18
May 6	Plant Walk on Campus	---
<b>May 11 (Mon.)</b>	<b>Exam III (Final Exam), 3:30 5:30 pm (SK W139)</b>	---

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\*The textbook readings are required to strengthen and expand the information presented in lectures, improve exam performance, and maximize educational value for the student. Additional readings may be assigned. In addition to the textbook readings, students are encouraged to retrieve and study online journal articles and other literature cited in lectures to further increase educational value of the course.

## LABORATORY SCHEDULE

**All labs will meet in Skeen Hall W139, except for Feb. 24 which will meet in GT 159.**

Schedule modifications may be made for weather and progression of propagated materials.

Please wear casual work clothes to the labs. For the tissue culture lab, please come with clean clothes and shoes without any dust, dirt, or mud.

<b>Date</b>	<b>Activity</b>
Jan. 27 (SKH W139)	Seed Dormancy Experiment: Initiate Sowing Bedding Plant Seed in Plug Trays
Feb. 3 (SKH W139)	Cuttings – Herbaceous, Succulents: Initiate, Take to Dry Bench
Feb. 10(SKH W139)	Cuttings – Woody Plants: Initiate, Take to Mist Bench
Feb. 17 (SKH W139)	Air Layering: Initiate
Feb. 24 (GT 159)	Tissue Culture (Stage II Micropropagation): Initiate Boston Fern, Venus Fly-Trap, African Violet Students to Work in Pre-Determined Shifts
Mar. 2 (SKH W139)	Field Trip to Sunland Nursery's Color Division Greenhouse
Mar. 9 (SKH W139)	Seed Dormancy Experiment: Germination Test from Week #1 Transplant Bedding Plants Discuss "Fertigation" Technique, Start Seedling Feeding Schedule
Mar. 16 (SKH W139)	Dividing Root-Bound Plants Chip Budding Practice
Mar. 23-27	Spring Break
Mar. 30 (SKH W139)	Chip Budding of Ash Trees: Initiate Seed Dormancy Experiment: Germination Data Collection Bedding Plants: Take Home
Apr. 6 (SKH W139)	Cuttings – Woody Plants: Data Collection Transplant and Take Home
Apr. 13 (SKH W139)	Cuttings – Herbaceous and Succulent Material: Data Collection Transplant and Take Home
Apr. 20 (SKH W139)	Field Trip: Sunland Nursery and Peña Nursery
Apr. 27 (SKH W139)	Air Layering: Data Collection Chip Budding: Data Collection Miscellaneous Projects and Plant Walk (Time Permitting) Clean Up Skeen Prep Lab, Headhouse, and Greenhouse
May 4 (SKH W139)	Final Lab Meeting Tissue Culture Data Collection, Planting Microshoots

Instructor & TA Available to Answer Questions on Lab Manuals  
**Reminder: Lab manual due by 5 pm on May 8 by hard copy to TA in person, or to TA's mailbox in SKH N127**