

## Course Syllabus

Horticulture/Agronomy 2160 (Plant Propagation) – Spring 2023

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

Picchioni's Office Hours: MWF 8-10 am. Other times by appointments.

Graduate TA: Alba Lucker ([alucker@nmsu.edu](mailto:alucker@nmsu.edu))

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

Meetings:     **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:

- Learn practical methods of propagating plants by seed, cuttings, layering, grafting, division, and tissue culture through experiential, “hands-on” laboratories.
- Learn the science of the subject, namely relevant physiological principles involved in propagating horticultural plants through lecture discussions and readings.

Textbook (recommended): 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. If not purchased or rented, a reserve copy is available at Zuhl Library for free 2-hr checkout in library. Textbook readings are strongly encouraged. New, used, and rental options are available at NMSU bookstore on campus, Campus bookstore in Pan Am Plaza, Amazon, or other sources.

What I expect from students: I expect students to enjoy the subject, attend class regularly, be on time, meet all assignment deadlines, participate in discussions, and demonstrate that you want to be here. I expect students to keep up with the syllabus and all assignments. I expect students to be focused on the class meetings and to turn off any device that does not relate to the meetings.

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 to access online resources, including lecture exams. Class information, lectures, lab manual, and various 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. Please check your devices for a stable internet connection, and current versions of MS Office, Adobe Reader, and Zoom in Canvas.

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 with e-copy emailed to instructor on or before the first day returning to class, OR 2) participating in a NMSU-sponsored activity that is verified by a written note from sponsor and emailed to

instructor before the event. Any other absences will not be considered excused absences. For medical attention, contact the Aggie Health and Wellness Center at (575)646-1512.

Lecture Examinations: There will be three noncumulative exams (known as “quiz assignments” by Canvas) that cover the lecture material. Each exam will be given online in Zoom with a 120-minute limit to complete and submit. Two midterm exams (February 15 and April 5) will be available from 12:00 pm until 11:59 pm. The online final exam is scheduled for Monday, May 8 from 3:30 to 5:30 pm. Students are responsible for contacting the instructor the first week of class if this final exam time conflicts with another final exam so that an alternative exam time may be determined. No makeup exams will be available unless a student has an excused absence.

Lab Manual: Students will complete seven laboratory reports contained in the lab manual and submit the completed lab manual as an assignment in canvas by **5 pm on Friday, May 5**. Student’s name must appear inside the cover page. *There will be one drop in grade for each weekday (M-F) late.*

Weekly Lab Assignments: Students will be given weekly online laboratory assignments by the TA and must submit them in Canvas (as Canvas assignments) by the TA's specified deadline. There will be no makeups for missing or late work unless student has an excused absence. Since we have only one lab section, 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 one of the weekly lab assignments, students will assist in preparing and conducting the state FFA Floriculture Contest at south entrance of the NMSU Pan American Center tentatively scheduled for Friday, March 31 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 their name on a sign-up sheet to document work. Written excuses for official university business will be provided to excuse students from their 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.).

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 my.nmsu.edu

under the Student Tab. 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 not doing as well as you would like, please meet with instructor or TA 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.

Online Contingency Plan: This course is designed for in-person instruction at the time of this writing (12-January, 2023). If pandemic restrictions mandate that the class pivot to online instruction, we will pivot to online instruction. Students will be carefully instructed on how to engage in online lectures and labs, should the need materialize.

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, serious medical condition, sex (including pregnancy), sexual orientation, spousal affiliation, or protected veteran status in 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 Aggie Health and Wellness Center: (575)646-1512

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 including plagiarism, non-academic misconduct, and the consequences or penalties for each. For more information, see the NMSU Student Social Code of Conduct (<https://arp.nmsu.edu/5-20/>) and Student Academic Code of Conduct (<https://arp.nmsu.edu/5-10/>).

## LECTURE SCHEDULE

Date	Topic	Textbook chapters*
Jan. 18	Course Guidelines, Introduction, Literature Plant Propagation in Review, Relevant Plant Biology	--- 1-3
Jan. 23	Plant Propagation in Review, Relevant Plant Biology Sanitation Practices in Greenhouse	1-3 3 (p. 107-110)
Jan. 25-30	Principles of Seed Propagation	4-8
Feb. 1-6	Clones in Horticulture	9
Feb. 8-13	Propagation of Plants by Cuttings (General)	10-11
Feb. 15	Exam I (Online in Canvas; <u>No Class</u> )	---
Feb. 20-22	Anatomical Basis, Adventitious Root & Shoot Formation	10
Feb. 27	FFA Floriculture Contest Job Assignments	---
Mar. 1-8	Cuttings, Hormones, Plant Growth Regulators	10-11
Mar. 13-17	Spring Break	---
Mar. 20-27	Horticultural Aspects, Cutting Propagation	10-11
Mar. 29-Apr. 3	Layering Principles and Techniques	15
Apr. 5	Exam II (Online in Canvas; <u>No Class</u> )	---
Apr. 10-17	Grafting and Budding Principles, Techniques	12-14
Apr. 19-24	Divisions, Specialized Structures	16
Apr. 26-May 1	Plant Micropropagation and Tissue Culture	17-18
May 3	Plant Walk on Campus	---
<b>May 8 (Mon.)</b>	<b>Exam III (Final Exam), 3:30 to 5:30 pm (Online in Canvas)</b>	---

\*The textbook readings are ***strongly encouraged*** 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 their knowledge.

## LABORATORY SCHEDULE

**All labs will meet in Skeen Hall W139, except for Feb. 27 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. 23 (SKH W139)	Seed Dormancy Experiment: Initiate
Jan. 30 (SKH W139)	Sowing Bedding Plant Seed in Plug Trays
Feb. 6 (SKH W139)	Cuttings – Succulent Plant Species: Initiate, Take to Dry Bench
Feb. 13 (SKH W139)	Cuttings – Woody Plant Species: Initiate, Take to Mist Bench
Feb. 20 (SKH W139)	Air Layering: Initiate
Feb. 27 (GT 159)	Tissue Culture (Stage II Micropropagation): Initiate Boston Fern, Venus Fly-Trap, African Violet Students to Work in Pre-Determined Shifts
Mar. 6 (SKH W139)	Field Trip to Sunland Nursery's Color Division Greenhouse
Mar. 13-17	Spring Break
Mar. 20 (SKH W139)	Seed Dormancy Experiment: Germination Test from Week #1 Transplant Bedding Plants Discuss "Fertigation" Technique, Start Seedling Feeding Schedule
Mar. 27 (SKH W139)	Dividing Root-Bound Plants Chip Budding Practice
Apr. 3 (SKH W139)	Chip Budding of Ash Trees: Initiate Seed Dormancy Experiment: Germination Data Collection Bedding Plants: Take Home
Apr. 10 (SKH W139)	Cuttings – Woody Plants: Data Collection Transplant and Take Home
Apr. 17 (SKH W139)	Cuttings – Herbaceous and Succulent Material: Data Collection Transplant and Take Home
Apr. 24 (SKH W139)	Field Trip: Sunland Nursery and Peña Nursery
May 1 (SKH W139)	Air Layering: Data Collection Chip Budding: Data Collection Tissue Culture: Data Collection, Planting Microshoots

Instructor & TA will be available throughout the semester to answer questions on lab manuals.

**Reminder: Submit lab manual as Canvas assignment no later than 5 pm, Friday, May 5.**