HORT 150
The Science and Art of Growing Plants
syllabus Spring 2025

Instructor
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office hours: any day- by appointment

lecture:MWF10:10–11:00am
Lab: Mon 1:10 – 4:00 pm meet in PBS rm. 43

Course Objectives:

To provide you with personal, hands-on experiences in the biological sciences that will guide you through the process of generating, evaluating, disseminating, and applying the scientific method in ways that you may use during your life.

To introduce you to horticultural concepts, allowing you to experience science and the art of growing plants as you apply basic horticultural knowledge to the production of plants utilizing controlled environments.

To challenge any pre-existing assumptions you may have and to promote a reasoned consideration and evaluation of different production practices, including conventional production, sustainable production and organic production.

Student Learning Objectives

1. Students in groups of five will plant, grow, record observations, and keep data collection on 25 different flowering annuals and perennials.
2. Students will select a refereed journal article and prepare a report using terminology they understand. Items covered in the report are the research topic, experimental design or how the experiment was set up, what were the results, the conclusions of the researchers and if the research topic has any relationship to plants and society.
3. Students will prepare a lab report on the effect of light and dark on germination of 25 different flowering annuals and perennials. This report will state objectives of the research, materials and methods, results, and conclusions.
4. Students will identify, label, and explain plant structure and function for any Angiosperm plant covered in class.
5. Students will be able to defend their opinions regarding conventional horticulture versus sustainable horticulture.

Recommended

Levetin, Estelle, and Karen McMahon. Plants and Society. 2024. Ninth edition.

Grades will be based on total accumulated points throughout the semester from:

Three hourly exams (each will be comprehensive),
Exam I maximum 140 pts 2/19/2025
Exam II maximum 160 pts 4/2/2025

Final Exam maximum 170 pts April 29,2025 PBS rm 43

Research paper, and assignments, and lab attendance and lab quizzes 181 pts
If you want your best grade turn in assignments on the due date.

If an assignment has a due date of March 10th, it has a value of zero points ten days later.
A 10 % grade penalty will be applied each day an assignment is late.
No overdue assignments can be turned in closed week or finals week.

Sign in sheets will be used for every lab. This is how you receive credit for participating in labs for Hort 150. Each and every lab is worth 8 points. If you miss a lab, you can make an appointment to make up your missed lab. No labs can be made up after the lab final plant id quiz on 4/21/2025.

Hourly exams and quizzes cannot be made up if missed. Papers, and assignments, are due at the beginning of class on the designated date.
Your final grade will be based on total number of points accumulated from all sources during the semester. The grading scale is:

100-93%	A	77-79%	C+
90-92%	A-	73-76%	C
87-89%	B+	70-72%	C-
83-86%	B	65-69%	D+
80-82%	B-	60-64%	D
		<62	F

Final exam: PBS rm 43

Tuesday: April 29, 2025 10:10 am to 1 pm.

Grades can be calculated during the semester by dividing points earned by total possible points and comparing to the grade scale listed above.

Course Topics

Plants and their role in society and the environment
Finding and evaluating information on plant production systems
Basics of life (overview of introductory botany that must be understood to evaluate plant production systems:
- Plant structure and function
- Plant growth and development
- Photosynthesis, respiration, and transpiration

How plant growth factors, including light, water, temperature, fertilizers, and soils, have an affect on plant production.
Sexual and asexual reproduction of plants
Applications of plants in society, based on research findings:
- Sustainable horticulture
- Fruit and vegetable production
- Growing plants in controlled environments

Class Topic and Lab Schedule

Week 1 Research articles on plants. Finding and evaluating information.
Lab Presentation Science librarian Terrell Library.

Week 2 Plant life basics
Lab
Propagate succulent house plants

Week 3

Lab MLK Holiday

Week 4 Plant structure and function.
Lab Park's seed catalog crop scheduling assignment and activity. Overview of experimental treatments for germination research project.
perennials for experiment.
Counting, labeling correct number of seeds 25 different flowers annuals and

Week 5 Lab	Plant growth and development. Groups plant germination experiments at greenhouse 118. Plants all started from seeds. Groups discuss predictions for this experiment.
Week 6 Lab	Photosynthesis Collect data and record observations on germination experiment. Vegetative propagation of house plants.
Week 7 Lab	Observation and collect data on germination experiment. Collect data and record observations on germination experiment.
Week 8 Lab	Photosynthesis, respiration, and transpiration. Collect data and record observations. Begin transplanting from germination flats into 1204 cell packs. Discuss results.
Week 9 Lab	Plant sexual reproduction Collect data and record observations. Transplant seedling into cell packs.
Week 10 Lab	Sustainable Horticulture. Collect final data. Transplant seedlings to 3 and 1/2" pots. Transplant Rooted cuttings from vegetative propagation of house plants.
Week 11	Sustainable Horticulture.
Week 12 Lab	Plant asexual reproduction.
Week 13 Lab	Water, Fertilizers, and Plant Growth Collect data on plant germination, transplant to 3 and 1/2" pots
Week 14 Lab	Light, effect on plant growth Final transplanting of germination experiment flowers into 3 1/2" pots. Discussion of final results. Study 24 flowers in germination experiment for identification quiz next Lab.
Week 15 Lab	Light, effect on plant growth. Tree fruits. Plant identification quiz.

Student Learning Goals and Outcomes

Learning Goal	At the end of the course, you should be able to:	Topics to advance the learning goal:	Evaluated primarily by:
Scientific literacy	• explain how scientific research has advanced knowledge about growing plants • recognize competing societal benefits and risks associated with conventional versus sustainable horticulture and defend your opinions with factual information	Instruction and discussions related to this goal are integrated throughout all lectures and labs. Topics that deal with this directly include: *Scientific method*, *Plant growth factors*, and *Sustainable horticulture*	Exams Assignments on Journal article review and Science reporting Research project and paper Class discussion
Critical and creative thinking	• ask relevant questions regarding the scientific basis behind information you receive about plants • explore and analyze the scientific accuracy behind media stories on plant growth	Instruction and discussions related to this goal are integrated throughout all lectures and labs. Topics that deal with this directly include: *Evaluating information* and *Basics of life*	Exams Assignments on Journal article review and Science reporting Research project and paper Class discussion
Quantitative reasoning	• organize and use data related to bedding plant seedling production	Instruction related to this goal is integrated in various lectures and labs, including: *Reproduction of plants*.	Exams Crop scheduling exercise Research project and paper
Information literacy	• find and assess the scientific value of information on growing a range of horticultural commodities	Instruction related to this goal is integrated in many lectures and labs, particularly in: *Finding and evaluating information*	Assignments on Library orientation, Journal article review, and Science reporting Research project and paper
Communication skills	• write accurately on topics related to the role of plants in today's society	This is demonstrated in reading materials, practiced in assignments,	Exams Assignments on Journal article review and Science reporting

		and discussed in topics including: *Applications of plants in society*	Research project and paper

Written Assignments and due dates

Crop scheduling exercise (Completed in lab, wk 4) 15 pts

Jan 27/2025

Journal article review Mar 7, 2025 40 pts

Research Project and paper Ap 21, 2025 40 pts

During the semester, you will be conducting an experiment on seed germination during lab sessions. You will work in groups of three to conduct the experiment and grow plants from seeds to transplants with the final size being 3 and ½" pots of 25 different flowering annuals and perennials. Each week your group will collect growth data, and you will make observations.

At the end of the experiment, you will prepare a written paper on your experiment. This paper will be in the form of a scientific research paper. It will have an introduction, materials and methods, results, and discussion sections. The materials and methods section and the results section will be the same for all members of your lab group. The introduction and discussion of results will be written by each member of the group and will represent individual effort. Many labs during the semester will help you to gather data for this report, handouts will be given out in lab which will help you to write this report.

Students are responsible for reading and understanding all university-wide policies and resources pertaining to all courses (for instance: accommodations, care resources, policies on discrimination or harassment), which can be found in the university syllabus."

Provision of an academic integrity statement complies with WAC 504-26-010(3) and WAC 504-26-404. Course-specific sanctions for violating WSU's Academic Integrity Policy must be included in the ***bolded italicized*** portion of the statement below. Include the following statement in your syllabus:

"You are responsible for reading WSU's Academic Integrity Policy, which is based on Washington State law. If you cheat in your work in this class you will:

- *Fail the assignment, quiz, or exam,* .
- Be reported to the Center for Community Standards.
- Have the right to appeal my decision.

- Not be able to drop the course or withdraw from the course until the appeals process is finished.

If you have any questions about what you can and cannot do in this course, ask me.

If you want to ask for a change in my decision about academic integrity, use the form at the Center for Community Standards website. You must submit this request within 21 calendar days of the decision."