

Bergen Community College
Division of Mathematics, Science & Technology
Department of Biology and Horticulture

Plant Propagation (HRT-232)
General Course Syllabus
Revised: Summer 2015

Semester and Year:

Section Number:

Meeting Times & Locations:

Instructor:

Office Location:

Phone:

Office Hours:

Email Address:

Course Description: **Plant Propagation** is designed to familiarize the student with the techniques, facilities and materials needed for plant propagation in the greenhouse. Techniques of both vegetative and sexual reproduction of herbaceous and woody plants, as well as greenhouse crops and crops for the interior landscape are covered.

Prerequisites: HRT 102 - Plant Science or by permission of instructor

General Education Course: No

Course Credits: 4.0

Hours per Week: 6.0: 3 hours lecture and 3 hours lab

Course Coordinator: Linda Wiles

Required Text: None; all materials will be provided in print or as online links.

Supplementary Text: None

Required Laboratory Manual: None; all materials will be provided in print or as online links.

Supplementary Materials: You will need to provide: a class binder for handouts and notes, estimate a 2.5"-3.0" binder; this will include lab notebook, which will later be submitted separately for grading.

Student Learning Objectives:

The student will be able to:

1. Explain the difference between sexual and asexual reproduction and the advantages and disadvantages of each in the propagation of plants. Students will be evaluated by performance on exams.
2. Identify the way traits are passed from one generation of plants to another and determine how this knowledge can be used in plant breeding. Students will be evaluated by performance on exams.
3. Recognize the role of plant hormones in propagation, growth and development. Students will be evaluated by performance on exams.
4. Describe and demonstrate the various methods of asexual propagation including cuttings, layering, grafting, tissue culture, division, bulbs and other specialized stems. Students will be evaluated by their performance on exams and observation in the laboratory.
5. Summarize the sexual life cycle of flowering plants including pollination, fertilization, fruit

- formation, seed dispersal, and germination. Students will be evaluated by performance on exams.
6. Know the effects of plant physiology, anatomy and the environment on the material best suited for use in propagating a plant. Students will be evaluated by their performance on exams and observation in the laboratory.
 7. Describe and demonstrate the methods of seed production and handling. Students will be evaluated by their performance on exams and observation in the laboratory.
 8. Identify the structure and parts of a greenhouse and recognize the methods used to control the greenhouse environment. Students will be evaluated by their performance on exams and observation in the laboratory.
 9. Identify the use of environmental controls outside of the greenhouse in regard to propagation. Students will be evaluated by their performance on exams and observation in the laboratory/field exercises.
 10. Know the plant propagation vocabulary and its proper use. Students will be evaluated by performance on exams.
 11. Research information regarding plant propagation in professional literature. Students will be assessed by their performance on a research project.
 12. Perform and evaluate an experiment utilizing different methods of plant propagation. Assessment will be based on performance on a group propagation experimental project.

Student Assessment Tools:

The above student learning objectives will be generally assessed or evaluated by instructors using a variety of **assessment instruments** including **lecture exams, laboratory exams, quizzes, laboratory reports, written reports, presentations, projects, etc.** The decisions concerning the type or types and number of instruments that are used in a specific section of the course will be left to the instructor of that section. This information, when given by the instructor should be recorded by the student in the **Student Assessment Section** of this document.

Course Content Schedule:

Dates and schedule are approximate and subject to change at the discretion of the professor.

<u>Week</u>	<u>Lecture Schedule</u>
1	Course Introduction Introduction – Who, What, When, Where, Why, How Sexual vs. Asexual Reproduction and Propagation Five parts of Horticultural Propagation
2	Biology Basics Types of Asexual and Sexual Propagation, Hormones
3	Environmental Controls, Hardwood Cuttings
4	Principles and Practices of Seed Propagation 1 Resources, Overview, Breeding Systems, Seed Development, Postharvest
5	Seed Testing, Dormancy, Disease Control
6	Seed Germination Requirements, Stages, Measures Seedling Development, Common Problems

7	Review
8	EXAM #1
9	Principles and Practices of Clonal Selection
10	Principles and Practices of Propagation by Cuttings
11	Layering: Principles and Practices Grafting and Budding Principles and Practices
12	Propagation by specialized stems and roots Bulb propagation
13	Maintenance of propagated plants throughout early to late development Micropropagation, tissue culture-principles and techniques
14	Review
15	EXAM #2

WEEK

LAB SCHEDULE

1	Introduction to plant propagation
2	Soils, potting in greenhouse and outdoor culture Introduction to environmental issues for propagation
3	Seed treatments
4	Seed sowing
5	Seed sowing
6	Seed production and handling
7	Seed propagation techniques
8	Light, Fertilization
9	Cuttings
10	Cuttings
11	Layering
12	Grafting, Budding
13	Propagation by specialized stems and roots

	Bulb propagation
14	Plant disease, insect and weed problems
15	Micropropagation, tissue culture-principles and techniques

Faculty Addenda:

Lecture Attendance:

Lab Attendance:

Policy Concerning Late Assignments:

Policy Concerning Make-Up Testing:

Safety Information:

Other Class Policies:

Student Assessment:

Lecture Examinations %

Laboratory Component %

Student Project/Report %

Class Participation %

Other %

Total 100%

If you have a medical condition or develop a medical condition during this semester, which prevents you from fulfilling the requirements of this course, you must notify your physician. You and your physician must decide whether or not it is appropriate for you to remain in this course. If the decision is to remain in this course, please obtain a letter from your physician indicating that your continued participation in this course is appropriate and present it to the Department Chair.

College Policies:

Student Responsibility

Students will be held responsible for reading all pertinent information in college publications regarding withdrawals, course drops, college deadlines, and tuition refunds. Students are responsible for compliance with the rules and regulations as stated in college publications.

Absence of Instructor

Students are expected to wait twenty minutes for a faculty member to come to class. If at the end of twenty minutes, the faculty member does not come, the students should sign an attendance sheet, which indicates the course, date, and time. A student should deliver the attendance sheet to the divisional office (A304) if between 9:00 a.m. and 5:00 p.m. or to the Evening Office (C107) if before 9:00 a.m. or after 5:00 p.m. Students cannot be penalized by faculty for not waiting longer than twenty minutes.

Academic Dishonesty and Plagiarism

Bergen Community College is committed to academic integrity – the honest, fair and continuing pursuit of knowledge, free from fraud or deception. Students are responsible for their own work. Faculty and academic support services staff will take appropriate measures to discourage academic dishonesty.

Plagiarism is a form of academic dishonesty and may be a violation of U.S. Copyright laws. Plagiarism

is defined as the act of taking someone else's words, opinions, or ideas and claiming them as one's own.

Consequences of Violations Academic Integrity

A. Instructor's Sanctions for a Violation

The faculty member will determine the course of action to be followed. This may include:

- Assigning a failing grade on the assignment;
- Assigning a lower final course grade;
- Failing the student in the course
- Other penalties appropriate to the violation;

In all cases, the instructor shall notify the Vice President of Student Services of the violation and the penalty imposed. The student has the right to appeal the decision of the instructor to the appropriate department head.

B. Institutional Sanctions for Violations

When a violation of academic integrity has been reported regarding a student, the Vice President of Student Services may impose disciplinary penalties beyond those imposed by the course instructor, which may include suspension or dismissal from the College. The student shall have the right to a hearing before the Vice President of Student Services or a designated judicial affairs committee. Judicial procedures governing violations of academic integrity are contained in the student handbook.

Class Attendance

All students are expected to attend punctually every scheduled meeting of each course in which they are registered. Attendance and lateness policies and sanctions are to be determined by the instructor for each section of each course. These will be established in writing on the individual course outline. Attendance will be kept by the instructor for administrative and counseling purposes.

Eating and Drinking

Eating or drinking in classrooms, lecture rooms, laboratories, gymnasium, swimming pool, or passageways is forbidden. Covered beverages only are permitted in the library. Eating and drinking are permitted in cafeteria and vending areas only.

Learning Assistance

Henry and Edith Cerullo Learning Assistance Center

The Tutoring Center, English Language Resource Center, Math Walk-In Center and Writing Center are collectively known as the Henry and Edith Cerullo Learning Assistance Center. The Cerullo Learning Assistance Center is located in the Pitkin Education Building, in Room L-125. The telephone number is (201) 447-7489. The Learning Assistance Center, staffed with peer and professional tutors, offers free individual and group tutoring, supplemental instruction, and online tutoring for subjects offered at the College. The Center provides alternative approaches to problem solving and organizational skills. Tutors help clarify classroom lectures and textbooks and help students prepare for exams. These services build student self-confidence and reduce fear of failure. The Center is equipped with the latest technology and software, including tapes, books, review sheets, exercises and software.

Services for Students with Disabilities

The Office of Specialized Services/ Deaf Services, located in L-115 in the Pitkin Education Center provides accommodations and auxiliary services to students with disabilities attending Bergen Community College. Students are encouraged to submit documentation to OSS during the early stages of the admission process. The suggested deadlines for submitting documentation are as follows: August 1st for fall semesters, December 1st for spring semesters. For more information please contact our office at 201-612-5270 or at www.bergen.edu/oss.

Sidney Silverman Library

Main Building, Pitkin Education Center, L-wing, 2nd Floor

Paramus Library Hours: (201) 447-7131 or visit <http://www.bergen.edu/library/calendar/gcal.htm>

Paramus Service Desk: (201) 447-7970

Meadowlands Location: 1280 Wall Street, Lyndhurst 2nd Floor

Meadowlands Library Hours: <http://www.bergen.edu/library/calendar/gcal.htm>

Meadowlands Service Desk: (201) 301-9692

www.bergen.edu/library

Testing Services

The Bergen Community College Office of Testing Services (OTS) is located in Room S-127. OTS serves the college community by identifying, developing, procuring, administering, processing, and/or evaluating examinations, which meet a variety of administrative and instructional needs. To contact the OTS, please call (201) 447-7202. The Office of Testing Services administers makeup tests as a service for students who, for compelling and exceptional reasons, have missed a scheduled classroom examination. Students must receive prior permission from and make arrangements with their course instructors to take these examinations, under specific conditions, in the Office of Testing Services, Room S-127.

WebAdvisor

WebAdvisor is a web interface that allows students to access information contained in Datatel's Colleague, the administrative database used by Bergen Community College. Students may use WebAdvisor to register for classes, to pay tuition and fees, to view their class schedules, to check grades, to check on progress toward degree requirements, etc. WebAdvisor accounts are available for all students enrolled in credit programs. New students are strongly encouraged to attend an in-person registration or advisement session before using a WebAdvisor account. Eligible students without WebAdvisor user names and passwords may access their WebAdvisor account by going to go.bergen.edu and selecting "I'm new to WebAdvisor." Then, follow the on-screen directions. Check the WebAdvisor FAQ for answers to common questions, such as how to reset your password. Students must have a valid e-mail address on file with the College to use WebAdvisor.