

## CUMBERLAND COUNTY COLLEGE

Course: AG 107: Plant Propagation

Credits: 3

Prerequisites: RD 100, EN 060

Description: An introduction to the techniques and facilities needed for plant propagation in the green house and nursery industry.

### Learning Outcomes

At the completion of this course, students should be able to:

- Analyze and select appropriate propagating methods for specific plants
- Explain the differences between sexual and asexual plant propagation
- Demonstrate an aptitude in asexual propagation techniques, including grafting, budding, layering, micro- propagation and cuttings, including stem, root and leaf
- Explain how plant propagators take advantage of a plant's natural asexual reproductive abilities
- Demonstrate the ability to identify and use plant propagating tools and equipment in a safe, proper and efficient manner
- Demonstrate an aptitude in seed propagation methods, including control of environmental factors, seed selection preparation for germination and seedling management
- Design a bedding plant seeding schedule and produce a crop of bedding plants for retail sale
- Analyze and identify pests and diseases associated with plant propagation
- Analyze and determine solutions to propagation problems arising from environmental, moisture, nutrition and temperature problems.

### Topical Outline

- Plant Propagation Overview
- Propagation media, tools, equipment, facilities
- Plant Propagation Environment
- Greenhouse environmental controls; macro & micro climates
- Art and Science of propagation; sexual vs Asexual
- Propagation Techniques
- Cell Division: Mitosis vs Meiosis
- Cell Division: Plant Tissues
- Plant Hormones and Seed Development

- Developing Seeding Schedules
- Stages of Seed Development
- Seed Propagation Media
- Physiological Basis of Grafting and Budding
- Grafting Propagation
- Seed Selection; Production and Handling
- Seeding of Bedding Plants
- Principles of Propagation by Cuttings

Text: Hartmann, H.T., Kester, D. E., Davies, F. T., and Geneve, R. L.

*Plant Propagation; Principles and Practices*, 8<sup>th</sup> ed. 2011. Prentice Hall, Upper Saddle River, NJ.

Student Assessment: Assessment may be accomplished through projects, portfolios, exams, presentations and/or papers.

Academic Integrity: Plagiarism is cheating. Plagiarism is presenting in written work, in public speaking, and in oral reports the ideas or exact words of someone else without proper documentation. Whether the act of plagiarism is deliberate or accidental [ignorance of the proper rules for handling material is no excuse], plagiarism is, indeed, a “criminal” offense. As such, a plagiarized paper or report automatically receives a grade of **ZERO** and the student may receive a grade of **F** for the semester at the discretion of the instructor.

Note: If you are having difficulty with work in this class tutoring is available through the Center for Academic & Student Success. If you think that you might have a learning disability, contact Project Assist at 856.691.8600 x 1282 for information on assistance that can be provided to eligible students.

#### Before Withdrawing From This Course

If a student experiences adverse circumstances while enrolled in this course and considers withdrawing, s/he should see an advisor (division or advisement center) **BEFORE** withdrawing from the class. A withdrawal may cause harmful repercussions to completion rate standards and overall GPA which can limit or eliminate future financial aid in addition to causing academic suspension.