PST-1331: PLANT PROPAGATION

Cuyahoga Community College

Viewing: PST-1331 : Plant Propagation

Board of Trustees:
December 2021

Academic Term:
Fall 2022

Subject Code
PST - Plant Science/Landscape Tech.

Course Number:
1331

Title:
Plant Propagation

Catalog Description:
Introduction to the techniques used to create new food and ornamental plant crops.

Credit Hour(s):
3

Lecture Hour(s):
1

Lab Hour(s):
6

Requisites

Prerequisite and Corequisite
PST-1301 Horticultural Botany, or concurrent enrollment; or departmental approval.

Outcomes

Course Outcome(s):
Generate new plants via sexual and asexual propagation methods most common in the wholesale plant production industry.

Objective(s):
1. Compare and contrast various types of sexual propagation methods.
2. Determine best sexual propagation method for creating specific types of plants/specific planting situations.
3. Compare and contrast various asexual propagation methods.
4. Determine best asexual propagation methods for creating specific types of plants/specific planting situations.
5. Identify cultural conditions most conducive to each propagation method to ensure highest percentage of survival.

Course Outcome(s):
Successfully establish crops of new plugs, liners, and whips following the standards set by the American Nursery and Landscape Association (ANLA).

Objective(s):
1. Identify the standards for nursery stock as defined by the American National Standard Institute (ANSI) Z60.1, American Standard for Nursery Stock.
2. Use the ANSI Z60.1 standards to calculate bulk material volume and cost to produce nursery crops for sale in the United States.
3. Generate plant material to specific grades within ANSI Z60.1.

Course Outcome(s):
Identify favorable conditions for plant growth and development

Objective(s):
1. Identify the most favorable conditions for growth and development for plant groups.
2. Manipulate the greenhouse environment to produce the most favorable conditions for growth.
3. Identify root media components for use in plant development.

Course Outcome(s):
Identify water, fertilization, and pest control systems.

Objective(s):
1. Identify the industry best practices for water use.
2. Identify the industry best practices for fertilization.
3. Identify the industry best practices for pest control.

Methods of Evaluation:
1. Quizzes
2. Midterm examination
3. Final examination
4. Laboratory exercises

Course Content Outline:
1. Sexual Propagation
   a. Seed
   b. Hybridization
   c. Generations
   d. Intergeneric
   e. Intrageneric
2. Asexual Propagation
   a. Softwood cutting
   b. Hardwood cutting
   c. Semi-hardwood cutting
   d. Layering
   e. Air layering
   f. Grafting
   g. Tissue culture
3. American National Standard Institute Z60.1
   a. Section 1: Shade and Flowering Trees
   b. Section 2: Deciduous Shrubs
   c. Section 3: Coniferous Evergreens
   d. Section 4: Broadleaf Evergreens
   e. Section 5: Rose Grades
   f. Section 6: Young Plants
   g. Section 7: Fruit Tree Grades
   h. Section 8: Small Fruits
   i. Section 9: Understock
   j. Section 10: Seedling Trees and Shrubs
   k. Section 11: Bulbs, Corms, Tubers
   l. Section 12: Perennials
   m. Section 13: Christmas Tree Standards
4. Estimating
   a. Material quantity
   b. Material volume

c. Material cost
d. Labor units

Resources

Beytes, Chris, ed. *Ball Redbook: Greenhouse Structures, Equipment, and Technology*. 19th ed. Ball Publishing, 2021.

Geoff Bryant. *Plant Propagation A to Z: Growing Plants for Free*. 1st ed. Firefly Books, 2006.

Davies, Fred T., Greene, R.L., Wilson, S.B., Hartmann, H.T. *Hartmann Kester's Plant Propagation: Principles and Practices*. 9th ed. Prentice Hall, 2018.

Dirr, M. *The Reference Manual of Woody Plant Propagation: From Seed to Tissue Culture, 2nd ed*. Timber Press, 2006.

Druse, Ken. *Making More Plants*. 2012.

Miranda Smith. *Plant Propagators Bible: A-Step-By-Step Guide to Propagating Every Plant in Your Garden*. Cool Springs Press, 2021.

Toogood, A. *American Horticultural Society Plant Propagation: The Fully Illustrated Plant-by-Plant Manual of Practical Techniques*. 1. DK Adult, 1999.

Toogood, Alan. *RHS Propagating Plants*. Royal Horticultural Society, 2019.

Vincent, Alice. *How to Grow Stuff: Easy, No-Stress Gardening for Beginners*. Penguin Random House, 2017.

Top of page
Key: 3743