

# PST-1351: PLANT PRODUCTION

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## Cuyahoga Community College

### Viewing: PST-1351 : Plant Production

**Board of Trustees:**

December 2021

**Academic Term:**

Fall 2022

**Subject Code**

PST - Plant Science/Landscape Tech.

**Course Number:**

1351

**Title:**

Plant Production

**Catalog Description:**

Exploration of production and marketing of ornamental and food plant materials. Emphasis on basic greenhouse, garden center, small farm, and nursery operations from off season planning, crop timing, pest management, marketing, production, harvesting, and selling. Alternative growing methods including hydroponics, high tunnel aeroponics and other soil-less methods.

**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):**

Practice the selection of plant crops, propagation methods, and growing methods to produce and harvest new crop plants for garden center, small farm, and nursery operations.

**Essential Learning Outcome Mapping:**

Critical/Creative Thinking: Analyze, evaluate, and synthesize information in order to consider problems/ideas and transform them in innovative or imaginative ways.

**Objective(s):**

1. Determine what types of crop plants should be grown for the desired market.
2. Discuss benefits of various propagation methods.
3. Determine appropriate propagation method to utilize for specific crops.
4. Discuss sourcing of plants.
5. Successfully start new crops of plug, whip, and liner plant materials.

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**Course Outcome(s):**

Create marketing plans, record keeping methods, and integrated pest management techniques for an efficient plant production business.

**Essential Learning Outcome Mapping:**

Written Communication: Demonstrate effective written communication for an intended audience that follows genre/disciplinary conventions that reflect clarity, organization, and editing skills.

**Objective(s):**

1. Identify packaging methods needed for various types of plants.
  2. Identify shipping methods used for various types of plants.
  3. Maintain a record keeping system for the use of pesticides.
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**Course Outcome(s):**

Characterize the state of agriculture and ornamental horticulture from a regional/urban perspective and what impact the need for local food has on the production of various crops.

**Objective(s):**

1. Develop a planting schedule for a specific crop rotation.
  2. Compare and contrast different types of growing structures.
  3. Produce a selection of crops for a garden center, small farm or nursery operation.
  4. Discuss various harvesting methods and the benefits of each.
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**Course Outcome(s):**

Describe the impact of alternative growing methods on the global need for advanced agricultural techniques.

**Essential Learning Outcome Mapping:**

Civic Responsibility: Analyze the results of actions and inactions with the likely effects on the larger local and/or global communities.

**Objective(s):**

1. Discuss various integrated pest management techniques.
  2. Discuss benefits and costs of various growing methods.
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**Methods of Evaluation:**

1. Quizzes
2. Midterm
3. Laboratory exercises
4. Assignments
  - a. Case studies related to local crop production
  - b. Report on global agriculture focused on present and future food requirements
  - c. Survey of ornamental horticulture on a local scale
  - d. Marketing plan with implemented pilot project
  - e. Text exercises

**Course Content Outline:**

1. Producing plant crops
  - a. Selecting crops to raise for profit
  - b. Selecting propagation methods
  - c. Sourcing plants
  - d. Selecting growing methods
    - i. Plug production
    - ii. Hydroponics
    - iii. Aeroponics
    - iv. Trays/Flats
  - e. Production of crops
2. Growing structures
  - a. Environmental control
  - b. Watering systems
  - c. Types of structure
3. Harvesting
  - a. Manual
  - b. Mechanized
  - c. Protection of materials
4. Marketing

- a. Packaging
  - b. Market targeting
  - c. Sales techniques
  - d. Distribution methods
5. Record keeping
    - a. Plant scheduling
    - b. Crop sequencing
    - c. Integrated pest management monitoring schedules
    - d. Pesticide use
  6. Integrated pest management in practice
    - a. Scouting
    - b. Thresholds
    - c. Management tactics

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## Resources

Ball, Vic, ed. *Ball Red Book*. 17th ed. George J. Ball, 2003.

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Boodley, James W. *The Commercial Greenhouse*. 3rd ed. Delmar, 2008.

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Hartmann, H.T., Kester, D.E., Davies, F.T., Geneve, R.L., Wilson, S.B. *Plant Propagation*. 9th ed. Pearson AG, 2018.

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Smith, Miranda. *Plant Propagators Bible: A Step-by-Step Guide to Propogating Every Plant in Your Garden*. Rodale Books, 2021.

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

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Resh, Howard M. *Hydroponic Food Production*. 7th ed. CRC Press, 2013.

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## Resources Other

1. Commercial greenhouse catalogs.
2. County extension bulletins.

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