

HORT 15: ORIENTATION TO ENVIRONMENTAL HORTICULTURE

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2023
Units:	4
Hours:	3.5 lecture, 1.5 laboratory per week (60 total per quarter)
Advisory:	Not open to students with credit in HORT 50A.
Degree & Credit Status:	Degree-Applicable Credit Course
Foothill GE:	Area III: Natural Sciences
Transferable:	CSU/UC
Grade Type:	Letter Grade (Request for Pass/No Pass)
Repeatability:	Not Repeatable

Student Learning Outcomes

- Demonstrate knowledge of career opportunities in the green industry through written examinations.
- Demonstrate knowledge of the environmental horticulture sciences, including plant terminology, on written examinations.

Description

Survey of the many facets and component sciences of environmental horticulture. Exploration of the multitude of career options available in the green industry. An introduction to the vocabulary of the environmental sciences, including the terminology used in the identification of plants. Foundations of plant science, such as plant structure, plant growth, and the environmental needs of plants.

Course Objectives

The student will be able to:

1. Demonstrate knowledge of the horticultural industry and career opportunities in the green industry
2. Demonstrate knowledge of the environmental horticulture sciences, including plant terminology, structure, and nomenclature
3. Demonstrate the safe and proper handling of tools and use of structures used in the production of horticultural crops
4. Explain horticultural production concepts, such as media mixes, plant propagation, plant fertilization, and cultural practices
5. Identify common horticultural and interior plant pests and pest damage
6. Identify common turfgrass species and turfgrass cultural practices
7. Use floral practices to create a design
8. Exhibit an understanding of the significance of environmental horticulture for different cultures from around the world

Course Content

1. The horticulture industry and green industry career opportunities
 - a. Variety of sciences which comprise or impact environmental horticulture
 - b. Cultural applications of horticultural science
 - c. Workplace diversity in the green industry
 - d. Green industry markets locally and in California
 - e. Career opportunities in the green industry
 - i. Environmental horticulture (interiorscaping, arboriculture, etc.)
 - ii. Nursery industry (retail and wholesale)
 - iii. Landscape design and landscape construction
 - iv. Parks, recreation, and golf course management
 - v. Sales and business management
 - vi. Scientific research and teaching
 - vii. Sustainable development
 - f. General horticultural business models
 - i. Growing operations
 - ii. Design business
 - iii. Construction business
 - iv. Maintenance operations
 - v. Other business types
2. Aspects of horticultural science
 - a. Role of higher plants in the living world
 - b. Structure of plants
 - c. Nomenclature, classification, and terminology used in plant identification
 - d. Origin, domestication, and improvement of cultivated plants
 - e. Plant propagation
 - f. Photosynthesis, respiration, and translocation
 - g. Soil and water
 - h. Climate and plant growth
 - i. Biological competitors
 - j. Flowering and fruiting
 - k. Horticultural terminology
3. Use and management of horticultural tools and equipment
 - a. Tool safety
 - b. Creating a safe working environment
 - c. Structure identification, use, and management
 - i. Growing structures
 - ii. Greenhouse structures
 - iii. Storage facilities
4. Plant production processes
 - a. Media mix formulas and characteristics
 - b. Plant sexual and asexual propagation techniques
 - c. Plant fertilization needs and fertilization techniques
 - d. Plant cultural management
 - i. Moisture control
 - ii. Pest management
 - iii. Temperature control
 - iv. Environmental controls
5. Pest management

- a. Pest identification
- b. Pest damage recognition
- c. Pest control methods
 - i. Use of IPM
 - ii. Use of biological controls
 - iii. Use of pesticides
6. Turfgrass management
 - a. Turf species identification
 - b. Turf cultural practices
 - i. Mowing
 - ii. Watering
 - iii. Fertilization
 - iv. Verticutting and aeration
7. Basic floral design
 - a. Floral design materials
 - b. Floral design concepts
8. Environmental horticulture in other cultures
 - a. Urban horticulture
 - b. Rural horticulture
 - c. International horticulture
 - i. Crop growing areas
 - ii. Use of horticulture for food production

Lab Content

1. Leaf classification lab
2. Plant cell lab
3. Plant tissue lab
4. Soil and fertility lab
5. Plant inheritance lab

Special Facilities and/or Equipment

1. Horticultural laboratory and related horticultural facilities and equipment.
2. Students provide pruning shears with sheath, and plant collecting and specimen mounting supplies.

Method(s) of Evaluation

Methods of Evaluation may include but are not limited to the following:

Participation through attendance
Mid-term and final examinations
Plant collection and/or research projects
Term project

Method(s) of Instruction

Methods of Instruction may include but are not limited to the following:

Lecture
Discussion
Laboratory
Oral presentations
Demonstration
Field trips
Speakers

Representative Text(s) and Other Materials

Dirr, Michael A.. Manual of Woody Landscape Plants, 6th ed.. 2009.

Capon, Brian. Botany for Gardeners - an Introduction and Guide, 3rd ed.. 2010.

Although both texts are older than the suggested "5 years or newer" standard, they remain seminal texts in this area of study.

Types and/or Examples of Required Reading, Writing, and Outside of Class Assignments

1. Reading assignments (approx. 7 hours):
 - a. One chapter per week (approx. 25 pages) in the assigned text
 - b. Approx. 10 pages per week in a required course reader and use of supplemental texts in identifying plants and as references for projects
2. Writing assignments:
 - a. Topical papers on careers in the green industry
 - b. Preparation of a "Plant Parts Project" involving plant terminology
3. Other:
 - a. Lectures will address reading topics and experiences of the instructor. Classroom discussion and demonstrations in support of lecture topics will be provided
 - b. Guest speakers from industry will provide supplemental lecture and demonstration

Discipline(s)

Ornamental Horticulture