Discipline: Agriculture	Sub-discipline: Environmental Horticulture
General Course Title: **Introduction to Environmental Horticulture**	Min. Units: **3 Semester**
	Proposed Suffix: **L**

Course Description:
General course in environmental horticulture with emphasis on nursery operations, landscaping, turf management, and floral industries including; basic botany, cultural practices, propagation, structures and layout, pest management, planting, container gardening and houseplants, floral design, plant identification, turfgrass installation and care, and survey of career opportunities. Laboratory required.

Required Prerequisites or Co-Requisites[1]

Advisories/Recommended Preparation[2]

Course Objectives: *At the conclusion of this course, the student should be able to:*

- Name and explain how the major markets of the environmental horticulture industry function in their county and California
- Identify various horticultural occupations and their employment requirements
- Identify and safely use common tools and equipment used for plant propagation and landscaping
- List and describe the major structures of plants and their functions
- Formulate soils and container media following a given recipe
- Propagate plants utilizing both sexual and asexual methods
- Explain the requirements needed for plant growth
- Identify watering needs of plants
- Explain fertilizer analysis, ratios, and applications following label directions
- Recognize pest and disease damage on indoor and landscape plants
- Identify the various types of horticultural structures used for the growing crops
- Describe the basic operations of various environmental horticulture businesses
- Demonstrate how to plant and care for given horticultural crops
- Explain plant identification and nomenclature
- Describe common turf and landscape practices, both conventional and sustainable
- Construct a basic floral design

Course Content:

1. The Environmental Horticulture Industry in California
   a. History
   b. Current scope
   c. Future growth/employment

2. Awareness of Environmental Issues
   a. Waste
   b. Water
   c. Fertilizers
   d. Pesticides
   e. Sustainability

Introduction to Environmental Horticulture
(Content Continued)

[1] Prerequisite or co-requisite course need to be validated at the CCC level in accordance with Title 5 regulations; co-requisites for CCCs are the linked courses that must be taken at the same time as the primary or target course.

[2] Advisories or recommended preparation will not require validation but are recommendations to be considered by the student prior to enrolling.

3. Horticultural Occupations and Their Employment Requirements
   a. Nursery
   b. Landscape
   c. Turf
   d. Floral design
   e. Education
   f. Public service

4. Tools, Equipment, and Safety Practices
   a. Use of tools, specialized equipment, and nomenclature
   b. Safety in handling equipment
   c. Safety in handling pesticides

5. Plant Structures and Functions
   a. Stems
   b. Leaves
   c. Flowers
   d. Fruit/Seeds
   e. Roots

6. Soils and Container Media
   a. Types of soils
   b. Soil reactions
   c. Amending soils

7. Plant Propagation
   a. Seeds
   b. Cuttings

8. Requirements of Plant Growth
   a. Light
   b. Air
   c. Water
   d. Mineral
   e. Anchorage

9. Irrigation and Fertilizing
   a. Plant needs
   b. Deficiency symptoms
   c. Methods of application/techniques
   d. Application Rates
   e. Fertilizer schedules

10. Pest and Disease Overview
   a. Pests/disease identification
   b. Damage assessment
   c. Control measures

11. Horticultural Structures
   a. General layout
   b. Greenhouses
   c. Propagation units
   d. Systems - heating/cooling, irrigation/mist

Introduction to Environmental Horticulture
(Content Continued)

12. Environmental Horticulture Business
   a. Retail nursery and garden centers

b. Wholesale production nursery
c. Landscape contractor
d. Landscape maintenance/gardening company
e. Flower shop
f. Interiorscape company
g. Arboriculture company

13. Nursery and Greenhouse Crops - Planting and Care
a. Planting - propagation by sexual and asexual means
b. Transplanting larger sizes
c. Prune and maintain container stock

14. Plant Identification and Nomenclature
a. Basic plant identification, terminology, and techniques
b. Grouping of plants according to horticultural characteristics, i.e., size, rate of growth, environmental preferences
c. Shrubs, trees, ground covers, vines, annuals-perennials, house plants

15. Common Turf and Landscape Practices
a. Landscape planting
b. General care
c. Sustainable landscape practices

16. Basic Floral Design
a. Introduction to floristry
b. Corsage flowers and types of corsages
c. Various types of floral arrangements

Laboratory Activities: Individual Laboratory Activities are designed to support course objectives.

Methods of Evaluation: Lecture	Methods of Evaluation: Laboratory
Comprehensive Quizzes and Exams	Laboratory Skill Validation by Observation
Written Critical Thinking Scenarios	Laboratory Projects and Reports
Problem Analysis and Solution	Laboratory Research Projects and Reports
Research and Term Papers	Laboratory Skill Practicum Exams

Typical Textbooks, Manuals, or Other Support Materials

Horticulture Principles and Practices, Acquaah, George, Prentice Hall, NJ (978-0131592476) 2008
Practical Horticulture 7E, Rice, Laura Williams and Robert P., Prentice – Hall, NJ. (ISBN: 9780135038666), 2011
Ornamental Horticulture: Science, Operations and Management, Ingels, Jack E., Del Mar, NY (ISBN: 0-7668-1417-3), 2010

Other References

Hartmann's Plant Science: Growth, Development, and Utilization of Cultivated Plants, McMahon, Margaret, Kofranek, Anton and Rubatzky, Vincent, Prentice-Hall, NJ, (ISBN: 0-13- **978-0131140752**), 2006

Web site: ipm.ucdavis.edu

Statewide Articulation: CPSLO-EHS 230, CPP-PLT 131/L, CSUF-OH 1, UCD-ENH 1, other universities lower division elective

FDRG Lead Signature: Date:

Mark E. Bender, PhD CSU Stanislaus

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