HORT 10: ENVIRONMENTAL HORTICULTURE & THE URBAN LANDSCAPE

Foothill College Course Outline of Record

Heading	Value
Effective Term:	Summer 2023
Units:	3
Hours:	3 lecture per week (36 total per quarter)
Degree & Credit Status:	Degree-Applicable Credit Course
Foothill GE:	Non-GE
Transferable:	CSU/UC
Grade Type:	Letter Grade Only
Repeatability:	Not Repeatable

Student Learning Outcomes

- Student will describe scientific method
- Demonstrate knowledge of the impact of urban activities on environmental systems

Description

Environmental horticulture encompasses the planning, design, construction, and management of the urban landscape. Relevant topics include ecosystem restoration and management, landscape ecology, sustainable landscape management, sustainable use of natural resources, urban horticulture, and urban landscape design. This course is intended for students in the Environmental Horticulture & Design program but members of the public and professional community are invited to enroll.

Course Objectives

The student will be able to:

1. Describe the scientific method and explain its uses and limitations as it pertains to environmental biology and restoration ecology
2. Exhibit an understanding of the history of environmental horticulture, the application of ecological principles, and its impact on both American and international cultures
3. Demonstrate an understanding of the evolution of ecological concepts and the impacts of urban environments
4. Describe the process for planning, design, construction, and management of landscapes and gardens that follow ecological guidelines
5. Demonstrate knowledge of the impact of urban activities on environmental systems
6. Recognize the attributes of sustainable landscapes and methods for restorative practices in urban landscapes
7. Investigate theories in environmental horticulture through reading, research, practice, and use of scientific analysis
8. Evaluate theories and practices in environmental horticulture
9. Share ideas and discoveries with students and clients using design, written documents, and oral presentations
10. Participate in group projects regarding data collection and analysis

Course Content

1. Utilize the scientific method to examine environmental biology, restoration ecology, and sustainability hypotheses
    a. Evaluate the principles of sustainability
    b. Compare and contrast the sustainability of current landscape practices
    c. Examine the sustainability of historic cultures
    d. Examine local developments regarding sustainability
2. Examination of the history of environmental horticulture and the urban landscape, the application of ecological principles, and its impact on both American and international cultures
    a. Overview of the planning, design, construction, and management of urban landscapes
    b. Global, local, and cultural context for urban and suburban communities
    c. Sustainable urban environments
3. Landscape ecology of urban environments and the evolution of ecological concepts
    a. Ecosystem structure and function (plant, animal, environmental relationships)
    b. Sustainable resources (land, water, energy, food, etc.)
    c. Energy flow in ecosystems
    d. Controlling system inputs and outputs
    e. Population growth
    f. Overview of ecosystem restoration and management
4. Planning, design, management, and construction of landscapes and gardens that follow ecological guidelines
    a. Urban design issues
        i. City streetscapes
        ii. Parks
        iii. Commercial landscapes
        iv. Residential landscapes and gardens
    b. Environmental audits and planning for growth
    c. Legal, cultural, and economic issues
    d. Regulatory processes and mitigation measures
    e. Designing the urban forest
        i. Street tree programs, tree ordinances, and urban forest preservation
        ii. Heritage trees
    f. Wetlands restoration
    g. Community gardens
    h. Restorative gardens (horticultural therapy)
5. Demonstrate knowledge of the impact of urban activities on environmental systems
    a. Changes in ecosystem components
        i. Pollution
        ii. Erosion
        iii. Development
    b. Development of human support systems
        i. Parks and green spaces
        ii. Utility systems

iii. Social networks
iv. Housing

6. Investigate and identify methods and practices for sustainable landscape management and restorative practices in urban landscapes
   a. Sustainable urban landscape management
   b. Vegetation, insect, and disease management
   c. Water resource management
   d. Recycling and composting
   e. Hazardous materials management
7. Investigate theories in environmental horticulture through reading, research, practice, and use of scientific analysis
   a. Examine theories supporting Integrated Pest Management
   b. Review data on pesticide use
   c. Survey plant material types and usage in habitats
   d. Survey habitat classifications in natural areas
8. Evaluate theories and practices in environmental horticulture
   a. Identify root causes of the environmental crisis
   b. Examine current philosophies of sustainable horticulture
9. Share ideas and discoveries with students and clients using design, written documents, and oral presentations
   a. Classroom discussion on current events
   b. Develop design processes for review by class charettes
10. Participate in group projects regarding data collection analysis
    a. Identify salient topics regarding sustainability
    b. Collect data regarding selected topics
    c. Prepare a group presentation on the pros and cons of the selected topic
11. Field trips illustrating environmental issues; representative examples include:
    a. DeAnza Kirsch Center environmental study area
    b. Coyote Point Natural History Center
    c. Various Bay Area wetlands
    d. Strybing Arboretum
    e. Jasper Ridge Biological Preserve

Lab Content

Not applicable.

Special Facilities and/or Equipment

1. Horticultural classroom, sustainable garden, on-campus natural areas, and related horticultural facilities and equipment
2. Off-site facilities for data collection and analysis

Method(s) of Evaluation

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

Participation in class
Final examination
Term projects and reports
Project preparation and presentation to class

Method(s) of Instruction

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

Lectures
Discussions
Guest speakers
Small group discussions
Assigned reading activities
Self-guided research

Representative Text(s) and Other Materials

Chiras, Daniel D.. Environmental Science, 10th ed.. 2014.

Although this text is older than the suggested "5 years or newer" standard, it remains a seminal text in this area of study.

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

1. Typical reading assignments will include 1-2 readings per week (approximately 30 pages of reading) in representative text and similar textbooks, including:
   a. Garrett Eckbo, People in the Landscape
      i. Chapter 12, Urban Culture, pp. 56-60
      ii. Excerpt, Nationalism and Ecological Reconstruction, p. 96
   b. Ian McHarg, Design With Nature
      i. Nature in the Metropolis, pp. 55-65
   c. John Tillman Lyle, Design for Human Ecosystems
      i. Chapter 1, Introduction: Where Mind and Nature Meet, pp. 1-21

Discipline(s)

Ornamental Horticulture