Subject:	SUST
Course Number:	181
Descriptive Title:	Urban Plant Ecology
Division:	Industry and Technology
Department:	Sustainable Design
Course Disciplines:	Architecture
Catalog Description:	This course introduces principles that define the planning, design, construction, and management of the urban landscape. Topics for the course include the study of California plant communities and identification, ecological systems, urban landscape ecology, natural resource conservation, sustainable horticulture, lifecycle assessment, and urban systems design. Students will learn about the materials and processes that shape the urban landscape and reconnect it to the natural systems beyond.
Prerequisite:	
Co-requisite:	
Recommended Preparation:	English 1A/English C1000
Enrollment Limitation:	
Hours Lecture (per week):	3
Hours Laboratory (per week):	0
Outside Study Hours:	6
Total Course Hours:	54
Course Units:	3
Grading Method:	Letter Grade only
Credit Status:	Credit, degree applicable
Transfer CSU:	Yes
Effective Date:	
Transfer UC:	Yes
Effective Date:	
General Education ECC:	
Term:	
Other:	
CSU GE:	
Term:	
Other:	
IGETC:	
Term:	

Other:	
CalGETC:	
Term:	
Other:	
Student Learning Outcomes:	**SLO #1 – Plant Identification** Students will demonstrate a knowledge of local plant communities and taxonomies, and the planting processes in an urbanized environment. **SLO #2 – Urban Ecosystems** Students will apply knowledge on the physical, social and environmental characteristics that define the urban setting to make informed decisions about the concept and design features. **SLO #3 – Sustainable Practices** Students will be able to integrate sustainable methods, systems, and programs that manage limited natural resources, strengthen connections with the natural environment, and promote healthy outcomes.
Course Objectives:	1. Demonstrate knowledge of environmental horticulture and the application of ecological principles 2. Utilize industry standard terminology in urban horticulture 3. Describe the impact of urban activities on environmental systems 4. Develop analysis skills for field/site research 5. Investigate theories in environmental horticulture through research, practice, and scientific data 6. Evaluate theories, application, and outcomes of urban ecosystems
Major Topics:	I. Introduction to Plant Ecology in the Urban Setting (Lecture, 3 hours) A. Overview of principles associated with urban ecology B. Identifying impacts of urban environment C. Plant and landscape infrastructure D. Terminology and typical urban processes II. Natural Systems, Urban Ecology, and Sustainability (Lecture, 6 hours) A. Discuss the principles of sustainability B. Sustainability of current landscape practices C. Examine local development activity D. Demonstrate sustainable measures III. Urban Environments and Ecological Concepts (Lecture, 12 hours) A. Urban habitats and functionality B. Land, water, energy, and food C. Energy flow in ecosystems D. Impacts of human development E. Ecosystem restoration and management

	IV. Planning, Design, and Management (Lecture, 6 hours) A. Survey of local demographics B. Establish groups or wide audiences C. Understanding of flexible spaces and multi-use spaces V. Ecological Processes (Lecture, 3 hours) A. The role of biological, physical, and chemical modalities B. Process outcomes: organic matter, carbon transfer, and nutrient cycling C. Urban ecosystems and microclimates VI. The Impact of Human Activities (Lecture, 3 hours) A. Human vs. nature interaction B. Habitat fragmentation and disruption of flow for eco-processes C. Decline of biodiversity and genetic homogeneity VII. Sustainable Landscape Management and Restorative Practices (Lecture, 9 hours) A. Water conservation and healthy soil B. Psychological and physiological responses C. Taking a biophilic approach D. Socially Restorative Urbanism VIII. Theories and Practices of Urban Horticulture (Lecture, 6 hours) A. Factors that define urban horticulture B. Development and management of green urban spaces C. Mitigation measures to ensure a healthy urban landscape D. Identifying the urban plant palette
Total Lecture Hours:	54
Total Laboratory Hours:	0
Total Hours:	54
A.1. Primary Methods of Evaluation (Part 1 - CCN courses only):	
Primary Method of Evaluation:	2) Problem solving demonstrations (computational or non-computational)
Typical Assignment Using Primary Method of Evaluation:	Create a site layout located in USDA's Planting Zone 24, that identifies a planting palette to demonstrate performative factors such as the use of native or naturalized species, sun and shade analysis, and plant specifications to determine size appropriate to the site. Submit site layout to the instructor.
Critical Thinking Assignment 1:	**Ecological Restoration:** Using a pre-determined project area, identify existing conditions, circulation patterns, and user groups for a predesign study that proposes alterations that increases public safety and better activates the street. Submit a three- to four-page report to the instructor.

Critical Thinking Assignment 2:	**Ecosystems Integration:** Using the data derived from the site analysis, develop a site landscape plan with integration of ecological systems that address both programmatic and regulatory requirements and is responsive to the site. Submit a site plan to the instructor.
Other Evaluation Methods:	Class Performance, Completion, Fieldwork, Presentation, Quizzes
If Other:	
Instructional Methods:	Demonstration, Discussion, Field trips, Lecture, Multimedia presentations
If other:	
Work Outside of Class:	Problem solving activity, Required reading, Skill practice, Study
If Other:	
Up-To-Date Representative Texts:	Charles Waldheim, Landscape as Urbanism: A General Theory, 1st Edition, 2022, Princeton Urban Press
Alternative Texts:	
Required Supplementary Readings:	
Other Required Materials:	Handouts prepared by instructor
Requisite	
Category	
Requisite course:	
Requisite and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s).	
Requisite Skill:	
Requisite Skill and Matching skill(s): Bold the requisite skill(s). if applicable	
Requisite course:	English 1A/English C1000
Requisite and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s).	**Ability research, analyze and summarize.** English 1A/C1000 - Read and apply critical-thinking skills to numerous published articles and to college-level, book-length works for the purpose of writing and discussion. **Ability to compose a written report.** English 1A/C1000 - Apply appropriate strategies in the writing process including dissecting and understanding prompts, prewriting, composing, revising, and editing techniques. English 1A/C1000 - Compose coherent, multi-paragraph, thesis-driven essays with logical and appropriate supporting ideas, including in-text citations.

Requisite Skill:	
Requisite Skill and Matching skill(s): Bold the requisite skill. List the corresponding course objective under each skill(s). if applicable	
Enrollment Limitations and Category:	
Enrollment Limitations Impact:	
Course Created by:	Marc Yeber
Date:	11/30/2024
Original Board Approval Date:	03/24/2025
Effective Term:	FA 2025