University of Southern California School of Architecture
Master of Landscape Architecture Program

Architecture 537
Urban Plant Ecology: Natural Perspectives
4 Units: 3 Hour Lecture + 3 Hour Plant ID Lab per week
Fall 2013
Tuesday and Thursday 1:00-4:00 p.m.
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Office hours: Tuesday and Thursday12:00-1:00 p.m.

Background:

We are increasingly challenged to pursue and achieve higher levels of sustainability and benefit in all areas of our urban environment, including the landscapes. Many conventional landscape practices rely upon the heavy use of energy, water and other resources to build and maintain them. As a result, urban landscapes typically lead to a net depletion of environmental resources as well as add to greenhouse gas production and other forms of urban pollution.

Information found in the study of plant physiology and the principles and concepts of plant ecology can provide a framework that can help achieve urban landscapes with increased levels of sustainability and benefit. This framework can be refined through the focused study of California native plant communities and species that can be incorporated into urban landscapes with increased levels of sustainability. Such information and effort is fully consistent with the USC 2010 Imperative Statement supporting ecological literacy among faculty and students: "The design should engage the environment in a way that dramatically reduces or eliminates the need for fossil fuel."

Introduction and Purpose:

Architecture 537 involves (1) the review of information found in plant physiology, and ecological principles and concepts of sustainability found in natural systems, (2) the study of native and introduced plant species and plant associations of Southern California and (3) calculations and data used to estimate water and energy use associated with urban landscapes.

The primary purpose of this course is to develop a foundation for the design of urban landscapes that provide greater benefits and achieve higher levels of sustainability than current landscapes. Learning will be achieved through lectures, discussions, campus planting identification walks and field trips. Lectures will incorporate a series of weekly exercises and readings.

Course Objectives:

a. To achieve a working knowledge of the principal native plant communities, species and cultivars of California, including: coastal sage scrub, chaparral, riparian, oak woodland, mixed evergreen forest and low desert.
b. To build a foundation of plant identification skill and knowledge through weekly plant study walks, lectures and local field trip activities.
c. To describe ways the principles and concepts of plant ecology and plant physiology can be applied to urban landscapes for increased levels of sustainability.
d. To establish a framework for the ongoing study of plants for use in urban landscapes with awareness of climate, habitat, water and energy factors.
e. To describe an energy-based approach for measuring landscape sustainability modeled after natural landscape systems.
f. To achieve an introductory knowledge for preparing landscape plant palettes, water and energy budgets, and addressing fire safety and invasive plant issues.

Expected Results:

Upon completion of this course each student should be able to:

a. Identify and describe the key native plant communities and environmental conditions of southern California.
b. Be capable of identifying a minimum of 125 California native and introduced tree, shrub, vine and ground cover species commonly planted in urban landscapes in southern California.
c. Prepare sustainable urban planting concepts based on the understanding of ecological principles, and the plant communities and species studied.
d. Prepare ecological planting palettes, landscape water budget calculations, and energy/carbon budgets for urban landscapes.

Course Methodology

A number of learning techniques are planned for this course, including:

a. Lectures and discussions on topics of principles of ecology, plant communities, and sustainability.
b. Weekly outdoor plant studies along with 3 required weekend field trips are planned for identification of plant species and communities, and to see local planting project examples.
c. Assigned reading and research, and preparation of written profiles on plant species and communities, and special topic written papers.
d. Plant palette, water budget and carbon/energy budget sketch exercises.

Attendance and Grading:

Attendance is required for all lectures, campus plant identification walks and off-campus field trips. Absence from field trips requires independent field trip completion within one week of the initial field trip date.

More than one absence can result in the lowering of the course grade by 1/3 for each additional absence up to a maximum lowering of 1 letter grade in the course. Classroom activities missed during an absence must be completed prior to the next class. All late work must be submitted no later than one week following the posted deadline and can receive a maximum 90% value. The basis for the course grade is divided among the following activities.

Plant Identification & Palette Exams	20%
Plant ID Profiles	10%
Lecture Exercises/Assignments	20%
Midterm Exam	25%
Final Course Exercise	25%
	100%

Points are assigned for all plant ID profiles, exercises, assignments, papers, quizzes and exams. Grades for each assignment, project and exams for the course is based upon the following scale:

94-100%	=	A
90-93%	=	A-
86-89%	=	B+
83-85%	=	B
80-82%	=	B-
76-79%	=	C+
73-75%	=	C
70-72%	=	C-
66-69%	=	D+
63-65%	=	D
60-62%	=	D-

Academic Integrity

This course supports the goal of USC to maintain an optimal learning environment. Students are expected to do their own work and follow General principles of academic honesty including respect for the intellectual property by citing sources of information and ideas that are incorporated into written papers and exercises in this course. All students are expected to understand and abide by the Student Conduct Code found in *Scampus,* the Student Guidebook.

Students with Disabilities
Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or to TA) as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m.–5:00 p.m., Monday through Friday. The phone number for DSP is (213) 740-0776.

LAAB Conditions for Accreditation
The USC School of Architecture's Master of Landscape Architecture First Professional Degree 6-semester curriculum (+3) and Advanced Placement 4-semester curriculum (+2) have been awarded candidacy status towards becoming an accredited professional degree program. All students can access and review the LAAB Conditions of Accreditation (including the Student Performance Criteria) on the ASLA Website.

http://www.asla.org/nonmembers/education/pdf/2005_LAAB_Accreditation_Standards_Procedures.pdf

Required Texts:

Bornstein, Carol; Fross, David, and O'Brien, Bart, California Native Plants for the Garden, Cachuma Press

Suggested Reading:

Perry, Bob, Landscape Plants for California Gardens,
Land Design Publishing

Keator, Glenn; and Middlebrook, Alrie
Designing California Native Gardens
The Plant Community Approach to Artful, Ecological Gardens
UC Press, 2007

Thompson, William J., and Sorvig, Kim, Sustainable Landscape Construction,
Island Press. Second Edition.

Sunset Western Garden Book, latest edition

Capra, Fritjof, The Web of Life, Anchor Books

References:

Bakker, Elna, An Island Called California, University of California Press, Berkeley

Barbour, Michael G. and Major, Jack, Terrestrial Vegetation of California, John Wiley and Sons.

Hickman, James, ed., The Jepson Manual, Higher Plants of California, University of California Press

Hatch, Charles, Trees of the California Landscape, University of California Press

Sawyer, John O., Keeler-Wolf, Todd, A Manual of California Vegetation California Native Plant Society