

# Environmental Horticulture

The Environmental Horticulture Program teaches the basic skills and provides state-of-the-art information required to develop a strong foundation for a variety of career specialties within the landscaping, ornamental horticulture and the regenerative and restoration industry. The program encourages professional standards, a strong work ethic and environmentally sound management practices.

Horticulture industry professionals from throughout the community serve as members of the college's Environmental Horticulture Advisory Committee. These "hands-on" professionals provide guidance, expertise and leadership in enhancing the program's response to community and industry needs. They meet yearly with program staff members, college administrators and student representatives to review program goals and objectives. Course offerings and content have been determined through this participation and are geared to meet the needs of the landscape, ornamental horticulture and habitat management trades.

On the college's East Campus, practical lab classes utilize two outdoor classroom gardens, the SBCC Lifescape and Chumash Point Ethnobotanical Preserve. The gardens are also the site of the nursery/greenhouse unit.

The Environmental Horticulture (EH) Program is designed to provide the student with the necessary skills at the apprentice level to begin work in a wide range of landscape trades. There are three vocational approaches within the Environmental Horticulture program: (1) the one-semester Skills Competency Award approach; (2) the Certificate of Achievement approach, where the certificate is awarded after the one-year (two-semester) format is successfully completed; and (3) the certificate can lead to any one of the four two-year A.S. Degree options in:

- a. Landscape Contracting, C-27 License (satisfying one or more years of State requirements)
- b. Environmental Landscape Design
- c. Nursery & Greenhouse Technology
- d. Ecological Restoration and Management

The program cannot guarantee job placement; however, many landscape industry employers, in search of energetic and skilled apprentices, contact the college to request referral of program graduates. The EH Program Skills Competency Award, EH Certificate and Certified Green Gardener, and Associate Degrees often provide expanding job opportunities.

## Faculty & Offices

Dr. Michael Gonella, *Chair* (A-162A, ext. 3042)

## Degrees & Certificates Awarded

Associate in Science Degree, Environmental Horticulture, with four emphases:

Ecological Restoration and Management

Environmental Landscape Design

Landscape Contracting C-27 License

Nursery and Greenhouse Technology

Certificate of Achievement, Environmental Horticulture

Skills Competency Award, Landscape Operations

Skills Competency Award, Sustainable Horticulture

## A.S. Degree: Environmental Horticulture

*Emphasis in Ecological Restoration and Management*

### Department Requirements (38-42 units)

BIOL 120 — Natural History <i>or</i> .....	4
BIOL 122 — Ecology .....	3
BOT 122 — Flowering Plant Identification.....	3
BOT 123 — Field Botany.....	3
DRFT 126 — Landscape Drafting I .....	3
EH 102 — Soils and Plant Nutrients and Plant Installation ..	3
EH 104 — Landscape Maintenance.....	3
EH 110 — Introduction to Horticulture .....	3
EH 112 — Ecological Restoration I .....	3
EH 113 — Ecological Restoration II .....	3
ENVS 110 — Humans and the Biological Environment .....	3
ENVS 111 — Environmental Field Studies.....	1
GEOG 171/ERTH 171 — Introduction to Geog Information Systems & Maps.....	2
GEOG 172/ERTH 172 — Geographic Information Systems Software Applications .....	2

*Electives (Choose at least one course from the following)*

EH 290 — Work Experience in Horticulture .....6  
 EARTH 111\* — Dynamic Earth-Physical Geology *or* .....3  
     ERTH 111H\* — Dynamic Earth-Physical Geology,  
     Honors .....4  
 GEOG 101/ERTH 141\* — Physical Geography .....3  
 \*ERTH 111 or 111H will satisfy area A of the SBCC GE requirements if taken with EARTH 111L. EARTH 141/GEOG101 will satisfy area A of the SBCC GE requirements if taken with EARTH 141L/GEOG 101L.

**A.S. Degree: Environmental Horticulture**

Emphasis in: Environmental Landscape Design  
 Emphasis in: Landscape Contracting C-27 License  
 Emphasis in: Nursery and Greenhouse Technology

**Department Requirements (40-44 units)**

DRFT 126 — Landscape Drafting I .....3  
 EH 101 — Plant Identification and Culture .....3  
 EH 102 — Soils and Plant Nutrients and Plant Installation ..3  
 EH 103 — Irrigation and Garden Waterworks .....3  
 EH 104 — Landscape Maintenance.....3  
 EH 105 — Landscape Construction .....3  
 EH 106 — Greenhouse/Nursery Operations,  
     Plant Propagation & Plant Recognition .....3  
 EH 110 — Introduction to Horticulture .....3  
 EH 290 — Work Experience in Environ. Horticulture ..... 2-4  
 EH 290 — Work Experience in Environ. Horticulture ..... 2-4

An additional 12 units of controlled electives are required. See counselor for list of required courses for each option.

The Associate Degree will be awarded upon completion of both department *and* college requirements.

**Certificate: Environmental Horticulture**

**Department Requirements (28-32 units)**

DRFT 126 — Landscape Drafting I .....3  
 EH 101 — Plant Identification and Culture .....3  
 EH 102 — Soils and Plant Nutrients and Plant Installation ..3  
 EH 103 — Irrigation and Garden Waterworks .....3  
 EH 104 — Landscape Maintenance.....3  
 EH 105 — Landscape Construction .....3  
 EH 106 — Greenhouse/Nursery Operations,  
     Plant Propagation & Plant Recognition .....3  
 EH 110 — Introduction to Horticulture .....3  
 EH 290 — Work Experience in Environ. Horticulture ..... 2-4  
 EH 290 — Work Experience in Environ. Horticulture ..... 2-4

**Certificate Requirements**

Upon successful completion of program requirements, as outlined above, SBCC awards the student a Certificate of Achievement in Environmental Horticulture. It is recognized by landscape industries throughout the region as verification of the graduate's achievement in acquiring requisite horticulture skills. Students may start the program in either the Fall or Spring Semester.

**Skills Competency Award:  
Sustainable Horticulture**

**Department Requirements (12 units)**

*Fall*

EH 101 — Plant Identification and Culture .....3  
 EH 103 — Irrigation and Garden Waterworks .....3  
 EH 104 — Landscape Maintenance.....3  
 EH 110 — Introduction to Horticulture .....3

*Optional:*

EH 290 — Work Experience in Environ. Horticulture ..... 2-4

## Skills Competency Award: Landscape Operations

### Department Requirements (12 units)

#### Spring

EH 102 — Soils and Plant Nutrients and Plant Installation ..3	
EH 105 — Landscape Construction .....	3
EH 106 — Greenhouse/Nursery Operations: Plant Propagation & Plant Recognition.....	3
EH 110 — Introduction to Horticulture .....	3

#### Optional:

EH 290 — Work Experience in Environ. Horticulture .....	2-4
---	-----

*Students must achieve a grade of “C” or higher or credit in all courses, for all degrees, certificates and skills competency awards.*

### College Requirements

For complete information, see “Graduation Requirements” in the *Catalog* Index.

### Planning a Program of Study

Most EH lecture classes are now conducted on Monday, Tuesday, Wednesday and Thursday evenings and accompanying EH labs are conducted on Friday afternoons, Saturday mornings and Saturday afternoons. During non-class times, students perform “hands-on” work in the field—on either a paid or volunteer basis under Work Experience.

Some students work on campus. Others work in the private landscape contracting industry (under the supervision of licensed contractors), in the nursery/greenhouse industry, or in the landscape or maintenance field. Still other program participants work as free-lancers in the various environmental horticulture specialties, including habitat management.

EH 290, Work Experience in Environmental Horticulture, is considered a vital aspect of the program—generating two to four units of credit each semester for enrollees. The college, the student and job supervisor work together to develop meaningful work experience situations and projects. It is the responsibility of the individual student to acquire such experience under the program.

*One-year Certificate students also need to take Drafting 126, Landscape Drafting I, and EH 110, Introduction to Horticulture, to earn the State-issued Certificate.*

Units earned under the one-year Certificate of Achievement program are applied toward the Associate Degree; many articulate toward the Horticulture degree program offered by California Polytechnic State University.

## Course Descriptions

### EH 100AB — History of Gardens (1-1) - CSU

### EH 100A — History of Gardens (1) – CSU

Introduces the student to four centuries of formal and classic gardens of Europe and the United States. Through direct visual media, slides and video, the elements of classic garden design are highlighted.

### EH 100B — History of Santa Barbara Gardens (1) — CSU

Introduces the student to two centuries of landscape gardens and presentations that have become part of Santa Barbara’s horticultural heritage. Through direct visual media, slides and video, the elements of classic garden design are highlighted.

### EH 101 — Plant Identification and Culture (3) F — CSU, UC

Designed to acquaint the student with woody ornamental plants and selected accent plants used in the Santa Barbara region. Approximately 200 trees, shrubs, vines and various herbaceous ornamentals are presented for identification and close scrutiny.

### EH 102 — Soils and Plant Nutrients and Plant Installation (3) S — CSU

Defines the properties of soil, nutrients needed by plant materials to thrive, fertilizers, and the interaction of basic soil components as they relate to the total landscape environment. Proper techniques of ornamental plant installation are covered. Biodynamic and sustainable horticulture is emphasized.

**EH 103 — Irrigation and Garden Waterworks**  
(3) F — CSU

Designated as an introductory format detailing the materials and methods used in the landscape irrigation trade. Emphasis placed on maintenance and repair of irrigation systems. Trouble-shooting and retrofitting are also highlighted. Water conservation, xeriscaping and irrigation management are featured. Simple plan reading and development are reviewed.

**EH 104 — Landscape Maintenance**  
(3) F — CSU

The most challenging phase of landscape horticulture is the long-term upkeep of an existing garden plan. Every talent, skill, artform and scientific discovery is a useful tool in landscape maintenance. The understanding, use and care of tools, both manual and power, is key to this course. Safety is essential. Trees, shrubs, vines, ground covers, turf, herbaceous perennials, annuals and bedding plants are cared for in numerous ways. Pest and disease control is ongoing, as is weed management. Irrigation systems need constant attention. Landscape soil management, including erosion control, drainage, fertilization, mulching, etc., is necessary. (Students may earn the Green Gardener Certificate, with a grade of "B" or better.)

**EH 105 — Landscape Construction**  
(3) S — CSU

Designed to familiarize students with basic landscape construction work, equipment and materials. Explores plan reading, grading, drainage, concrete, masonry, carpentry, electrical and plumbing, as well as C-27 landscape contractor's license requirements, business practices and legalities of this specialty.

**EH 106 — Greenhouse/Nursery Operations, Plant Propagation and Plant Recognition**  
(3) S — CSU

Introduces students to the greenhouse/nursery. Plant recognition is required for indoor plants, turf/groundcovers, bedding plants and herbaceous perennials. Greenhouse management includes maintenance, management and structure development.

**EH 110 — Introduction to Horticulture**  
(3) — CSU

Introduction to central concepts of environmental horticulture, covering horticultural practices and methods, with focus on long-term sustainability and local ecological issues. Students build foundational knowledge through projects, lectures and discussions in management of a variety of horticultural projects and enterprises.

**EH 111 — Introduction to Environmental Horticulture**  
(4) — CSU

*Course Advisories: EH 110*

The second of a two-class series completing the introduction to environmental horticulture. Explores applied practices of environmental horticulture; develops advanced skills; and covers horticultural jobs and methods, focusing on long-term sustainability and local ecological issues.

**EH 112 — Ecological Restoration I**  
(3) — CSU

Examines the principles and techniques of regional habitat restoration. Class work emphasizes the identification, collection, propagation and care of native plants.

**EH 113 — Ecological Restoration II**  
(3) — CSU

Review of the concepts and implementation of habitat restoration. Santa Barbara region habitats studied include chaparral, coastal sage scrub, oak woodland, and riparian Eco-niches. Emphasis on watersheds and riparian restoration. Principles of ecological re-creation and restoration techniques include seed collection, propagation and project evaluation.

---

**EH 200 A-Z and 200A AA-ZZ — Topics in Environmental Horticulture (0.5- 3) F, S, Summer — CSU**

Diverse environmental horticulture topics discussed in this series of elective and industry “upgrade” courses, offered outside of the one-year credit core program. See the *Schedule of Credit Classes* for specific topics. EH 200 classes may be credited toward two-year degrees. During some semesters, various EH 200 controlled electives (for credit) are also offered by SBCC Adult Education, the Santa Barbara Botanic Garden and Santa Barbara High School.

**EH 201 — Arboriculture (2) — CSU**

Introduces the student to the field of arboriculture, including the selection and ongoing care of the three categories of woody plants associated with urban landscapes. Direct visual media, slides, video and online methods used to highlight subject matter.

**EH 202 — Residential Landscape Design (1) — CSU**

Introduces the student to the field of arboriculture, including the selection and ongoing care of the three categories of woody plants associated with urban landscapes. Direct visual media, slides, video and online methods used to highlight subject matter.

**EH 203 — Pest Management (1) — CSU**

Designed for professionals or others who need to become familiar with sustainable and Integrated Pest Management (IPM) techniques. Helps students prepare for state certification or licensing and satisfy state safety requirements.

**EH 204 — Edible Landscaping (1) – CSU**

Course reviews some 300 edible trees, shrubs, vines and herbaceous perennials and includes their care and origins.

**EH 205 — Ground Covers and Turf (1) – CSU**

Explores various turf selections, including sustainable turf substitutes, and various groundcover plants adaptable to Southern California.

**EH 206 — Water Efficient Landscapes (1) - CSU**

Covers the design and implementation of low water use landscapes by reviewing water-efficient plant selection, design and issues of water sustainability in landscapes.

**EH 207 — Biodynamic Horticulture (1) Summer – CSU**

Explores the natural and sustainable techniques and skills used to promote a biodynamically vibrant landscape biosystem. Soil development, plant selection, animal inclusion and organic catalyst methods are explored.

**EH 208 — Chumash Landscaping (1) Summer – CSU**

Covers design, implementation and sustainable care and maintenance of local native plants of cultural importance to the Chumash people.

**EH 210/ENVS 210 — Permaculture Design (1) F — CSU**

*Co-requisite: ENVS 110 or EH 110*

*Skills Advisories: Eligibility for ENG 110 or ENG 110H or ENG 110GB*

Application of ecological and environmental principles to designing human systems that are locally sustainable and require reduced inputs. When taken with ENVS 110 or EH 110, the successful student is certified as a Permaculture Design Trainee and receives a Permaculture Design Certificate recognized worldwide.

*(EH 200-level classes may be credited toward two-year degrees. During some semesters, various EH 200 controlled electives (for credit) are also offered by SBCC Adult Education, the Santa Barbara Botanic Garden and Santa Barbara High School.)*

---

---

**EH 290 — Work Experience in Environmental Horticulture**

**(2-4) F, S — CSU**

*Limitation on Enrollment: Must be enrolled in Environmental Horticulture Program, taking at least one EH prefix class.*

*Students attend six evening classes for three hours approximately every three weeks.*

Explores elements for success in horticulture through lectures and guest speakers, including job preparation, work ethics and planning. Students get credit for paid or volunteer outside-class work overseen by a supervisor. Two units in each of two semesters minimum required for A.S. degree two units in one semester for a 1-year certificate.

**EH 299 — Independent Study in Environmental Horticulture**

**(1-4) F, S — CSU**

*Limitation on Enrollment: Completion of a minimum of 12 units at SBCC, with a 2.5 G.P.A., and a minimum of 6 units, with a 3.0 G.P.A. within the department.*

For complete information, see "Independent Study" in the *Catalog* Index.