HORTICULTURE – HORT

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Possible career opportunities

The horticulture program prepares students for numerous state licenses and industry certificates. State licenses include landscape contractor and pest control operator. Industry certifications include: nursery person, arborist, landscape technician, maintenance technician, and irrigation designer. Career choices in horticulture include: nursery technician, propagator, plant breeder, nursery manager, greenhouse grower, greenhouse manager, garden center manager, arborist/tree worker, landscape architect, landscape designer, grounds manager/municipal, landscape contractor, landscape maintenance contractor, golf course manager, and pest controller/advisor. Some career options may require more than two year of college work.

Program-level student learning outcomes

Program learning outcomes are subject to change. The most current list of program learning outcomes for each program is published on the DVC website at **www.dvc.edu/slo**.

Certificate of achievement

Arboriculture

Students completing the program will be able to...

A. understand and implement safety procedures.
B. use field examinations to determine plant problems.
C. diagnose plant suitability for a given site.
D. recognize plant species and the characteristics of a given species.

Certificate of achievement

Horticulture foundations

Students completing the program will be able to...

A. apply knowledge of plant selection and care to the landscape or nursery setting.
B. assess environmental factors such as soil and light conditions and microclimates that impact plant success.
C. recognize common plant problems and needs and apply effective remedies.
D. apply sustainability principles in the nursery and landscape settings.

Certificate of achievement

Landscape construction and management

Students completing the program will be able to...

A. prepare, model and contour ground prior to planting.
B. stake and plant a tree.
C. plant shrubs from a design plan.
D. design and plant a winter or spring bedding scheme.
E. recognize the features and use of the following displays: annuals, perennials, and bulbs.
F. establish an effective management program.

Certificate of achievement

Landscape architecture and design

Students completing the program will be able to...

A. develop fundamental designer and client communication techniques.
B. perform a site analysis and inventory.
C. recognize and develop a personal landscape design process.
D. create presentations through graphic sketching and drafting.
E. identify plant and non-plant material suitable for specific site design.
F. produce a portfolio and related documents necessary to enter the marketplace.

Certificate of achievement

Retail nursery

Students completing the program will be able to...

A. develop “soft” skills required for customer interactions.
B. understand the principle of “tie-in” sales.
C. recognize the need to stage plant species.
D. develop procedures to ensure the health of plants in a nursery setting.
E. know the applications of plant species to specific landscape needs.
F. know and understand the landscape design and construction process.

Horticulture

Certificate of achievement - Arboriculture

This program prepares students for employment as arborists (also called tree trimmers or pruners), fallers, and grounds maintenance workers in a variety of settings including public and private gardens, parks, golf courses, institutions, municipalities, utilities, government agencies, and commercial tree care services. The program is designed to meet ISA (International Society of Arboriculture) Certification requirements. It includes classroom, laboratory, and cooperative work experience/internship.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a "C" grade or higher. Required courses are available in the evening and on weekends.

required courses:		*units*
HORT-110	Introduction to Horticulture	4
HORT-120	Soil Science and Management	3
HORT-120L	Soil Science and Management Laboratory	1
HORT-134	Landscape Irrigation	3
HORT-137L	Pruning Laboratory	1
HORT-141	Tree Identification	3
HORT-141L	Tree Identification Laboratory	1
HORT-143	Shrub Identification	3
HORT-179	Arboriculture	3
HORT-179L	Arboriculture Laboratory	1
HORT-187	Sustainable Water Practices	2.5
HORT-296	Internship Occupational Work Experience Education in HORT	1-4
	total minimum required units	**26.5**

Certificate of achievement - Horticulture foundations

This foundational program introduces students to the broad field of horticulture, which encompasses the functional, aesthetic, and environmentally sound creation and care of our landscapes. Green industry professionals work with urban and natural spaces on a daily basis, improving our quality of life and ensuring the sustainability of our environment. The courses have been designed both for full-time students planning to enter the horticulture field and for those people working in one of the many interesting areas of horticulture who wish to expand their horticultural knowledge. The courses of the horticulture foundations certificate are incorporated into other horticulture certificates, and form the introduction to those programs. Most classes are conducted during convenient evening hours to allow working students to study for a new career and those with jobs in the field of ornamental horticulture to upgrade their skills.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a "C" grade or higher. Required courses are available in the evening and on
weekends.

required courses:		*units*
HORT-110	Introduction to Horticulture	4
HORT-120	Soil Science and Management	3
plus at least 3 units from:		
HORT-111	Plant Propagation and Production: Winter and Spring	3
HORT-112	Plant Propagation and Production: Summer and Fall	3
plus at least 3 units from:		
HORT-113	Plant Materials and their Uses: Winter and Spring	3
HORT-114	Plant Materials and their Uses: Summer and Fall	3
plus at least 2 units from:		
HORT-125	Plants and Diseases	3
HORT-132	Pest Management	1
HORT-134	Landscape Irrigation	3
HORT-137L	Pruning Laboratory	1
	total minimum required units	**15**

Certificate of achievement - Landscape architecture and design

This program prepares students for entry-level positions in landscape architecture and design. The program focuses primarily on design for residential landscape situations and small commercial sites. Projects may range from the design of small focal planting beds and perennial borders to complete garden layouts. Garden designers provide the planting design in addition to developing the landscape spatial composition. The advent of computer-assisted design (CAD) technology in the landscape industry adds a new dimension to skill and training requirements for landscape and garden designers. Contra Costa County's landscape industry is expanding, and demand for employees with landscape design skills including CAD contributes to the need for students to augment their design and drafting expertise with CAD skills. Elements of the program will assist students to prepare for the California Association of Nurseryperson's certification examination. Students will develop portfolios that may be necessary for entrance into landscape design baccalaureate degree programs at University of California, Davis, California Polytechnic State University at San Luis Obispo, and Pomona.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a "C" grade or higher. Required courses are available in the evening and on weekends.

required courses:		*units*
ARCHI-135	Digital Tools for Design	3
HORT-180	Introduction to Landscape Architecture	3
HORT-181	Landscape Design I: Graphics	3
HORT-182	Landscape Design II	3
HORT-184	Planting Design	3
HORT-296	Internship in Occupational Work Experience Education in HORT	1-4

plus at least 6 units from:

HORT-113	Plant Materials and their Uses: Winter and Spring	3
HORT-114	Plant Materials and their Uses: Summer and Fall	3
HORT-141	Tree Identification	3
HORT-148L	California Native Plants Laboratory	1
	total minimum required units	**22**

Certificate of achievement - Landscape construction and management

People working in the landscape field derive job satisfaction from enhancing the function and beauty of the environment while being physically active outdoors or helping support that activity in allied sales and service occupations. Landscape work involves construction and planting projects, irrigation system design and water management, and specialty fields such as turf management and tree care. This program provides an introductory base of plant knowledge and landscape skills, allowing students the option of entering a variety of jobs with the preparation for rapid advancement within their chosen occupations. The program emphasizes hands-on learning and most courses incorporate laboratory activities that apply knowledge and skills in realistic settings. The program is actively supported by the local horticulture industry. This program prepares students to enter the landscape construction and management industry. Students are prepared to take the California C-27 Landscape Contracting examination. Elements of the program will also assist students to prepare for the California Landscape Contractors Association's CLT examination and /or the California Association of Nurseryperson's certification examination.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a "C" grade or higher. Required courses are available in the evening and on weekends.

required courses:		*units*
HORT-110	Introduction to Horticulture	4
HORT-120	Soil Science and Management	3
HORT-120L	Soil Science and Management Laboratory	1
HORT-132	Pest Management	1
HORT-133	Landscape Construction	3
HORT-134	Landscape Irrigation	3
HORT-135	Landscape Estimating and Contract Documents	3
HORT-137L	Pruning Laboratory	1
HORT-296	Internship in Occupational Work Experience Education in HORT	1-4

plus at least 3 units from:

HORT-113	Plant Materials and their Uses: Winter and Spring	3
HORT-114	Plant Materials and their Uses: Summer and Fall	3

plus at least 1.5 units from:

HORT-130	Turf Grass Management	1.5
HORT-146	Ornamental Grasses	1.5
	total minimum required units	**24.5**

Certificate of achievement - Retail nursery

This program prepares students for employment in garden centers, landscape companies, greenhouses, florists, and retail nurseries. It will assist students preparing for the California Association of Nurseryperson's exam. The program design includes classroom, laboratory, and cooperative work experience/internship.

To earn a certificate of achievement, students must complete each course used to meet a certificate requirement with a "C" grade or higher. Required courses are available in the evening, and on weekends.

required courses:		*units*
HORT-110	Introduction to Horticulture	4
HORT-113	Plant Materials and their Uses: Winter and Spring	3
HORT-114	Plant Materials and their Uses: Summer and Fall	3
HORT-120	Soil Science and Management	3
HORT-132	Pest Management	1
HORT-134	Landscape Irrigation	3
HORT-137L	Pruning Laboratory	1
HORT-163	Nursery and Greenhouse Practices	3
HORT-165	New Plant Introductions	3
HORT-183	Residential Garden Design	1
HORT-187	Sustainable Water Practices	2.5
HORT-296	Internship in Occupational Work Experience Education in HORT	1-4

plus at least 3 units from:

HORT-111	Plant Propagation and Production: Winter and Spring	3
HORT-112	Plant Propagation and Production: Summer and Fall	3
	total minimum required units	**31.5**

HORT-110 Introduction to Horticulture

4 units SC

- *54 hours lecture/54 hours laboratory per term*
- *Recommended: Eligibility for ENGL-122 or equivalent*

This course will explore the biology and economics of growing and caring for plants, emphasizing basic horticulture practices and the biological and environmental principles on which they are based. The students are exposed to practical applications of horticulture science: propagation, plant identification, pest/disease identification and control options, environmentally safe use of pesticides, and factors that influence plant growth. There will also be an overview of the different aspects of the horticulture industry. CSU, UC

Horticulture

HORT-111 Plant Propagation and Production: Winter and Spring

3 units SC

- *36 hours lecture/54 hours laboratory per term*
- *Prerequisite: HORT-110 or equivalent*
- *Recommended: HORT-125 or equivalent*

This course introduces plant propagation and production practices for nursery operations, with an emphasis on sexual and asexual reproduction of winter and spring plants. Topics include winter and spring planting specifications, transplanting, fertilizing, plant pest and disease control; structures and site layout; preparation and use of propagating and planting mediums; use and maintenance of common tools and equipment; regulations pertaining to plant production; and new plant introductions in the nursery industry. Students will also participate in greenhouse management, scheduling of plant production, seed-starting, vegetative propagation and the marketing of winter and spring containerized nursery stock. CSU

HORT-112 Plant Propagation and Production: Summer and Fall

3 units SC

- *36 hours lecture/54 hours laboratory per term*
- *Prerequisite: HORT-110 or equivalent*
- *Recommended: HORT-125 or equivalent*

This course introduces plant propagation and production practices for nursery operations, with an emphasis on sexual and asexual reproduction of summer and fall plants. Topics include summer and fall planting specifications, transplanting, fertilizing, plant pest and disease control; structures and site layout; preparation and use of propagating and planting mediums; use and maintenance of common tools and equipment; regulations pertaining to plant production; and new plant introductions in the nursery industry. Students will also participate in greenhouse management, scheduling of plant production, seed-starting, vegetative propagation and the marketing of summer and fall containerized nursery stock. CSU

HORT-113 Plant Materials and their Uses: Winter and Spring

3 units SC

- *36 hours lecture/54 hours laboratory per term*
- *Recommended: HORT-110 or equivalent*

This course introduces the identification and uses of common plants in the California landscape that are of special interest in the winter or spring. Topics include native and introduced plant identification, growth habits, cultural and environmental requirements, uses in the landscape. Plants emphasized will come from the current California Association of Nurseries & Garden Centers (CANGC) and Professional Landcare Network (PLANET) Certification Tests Plant Lists. C-ID AG-EH 108L, CSU

HORT-114 Plant Materials and their Uses: Summer and Fall

3 units SC

- *36 hours lecture/54 hours laboratory per term*
- *Recommended: HORT-110 or equivalent*

This course introduces the identification and uses of common plants in the California landscape that are of special interest in the summer or fall. Topics include native and introduced plant identification, growth habits, cultural and environmental requirements, uses in the landscape. Plants emphasized will come from the current California Association of Nurseries & Garden Centers (CANGC) and Professional Landcare Network (PLANET) Certification Tests Plant Lists. C-ID AG-EH 112L, CSU

HORT-120 Soil Science and Management

3 units SC

- *54 hours lecture per term*
- *Prerequisite: HORT-110 or equivalent*
- *Recommended: Eligibility for ENGL-122 or equivalent*

This course is a study of soil science and management of soils. Soil biology, physics and chemistry are integrated with geological concepts. Topics include soil classification, derivation, use, function and management including erosion, moisture retention, structure, cultivation, organic matter and microbiology. C-ID AG-PS 128L, CSU, UC

HORT-120L Soil Science and Management Laboratory

1 unit SC

- *54 hours laboratory per term*
- *Prerequisite: HORT-120 or equivalent (may be taken concurrently)*
- *Recommended: Eligibility for ENGL-122 or equivalent*

This is a laboratory course that supplements HORT-120, Soil Science and Management. Field trips, demonstrations and experiments will deepen the methodological knowledge of students in this field. C-ID AG-PS 128L, CSU

HORT-125 Plant Pests and Diseases

3 units SC

- *54 hours lecture per term*
- *Recommended: HORT-110 and eligibility for ENGL-122 or equivalents*
- *Note: This course meets the California State Pest Control Advisor, California Association of Nurserymen, and International Society of Arboriculture Continuing Education Units (CEU) license certification for CEUs necessary for pest control operators and advisors*

This course will introduce students to insect and disease pests associated with plants. Key concepts in applied ecology of pest and beneficial species, disease identification, and control methodologies using Integrated Pest Management (IPM) and Plant Health Care models are emphasized. CSU

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HORT-130 Turf Grass Management
1.5 units SC
- *18 hours lecture/27 hours laboratory per term*

This course will introduce the study of turf grass management including identification, production, installation, and maintenance. Regional irrigation methodology, fertilization regimes, pests and diseases of turf, and new cultivars are emphasized. CSU

HORT-132 Pest Management
1 unit SC
- *9 hours lecture/27 hours laboratory per term*
- *Recommended: HORT-110 and eligibility for ENGL-122 or equivalents*

This course presents principles of integrated pest management governed by California regulation. Students will collect, preserve, and handle seasonal plant pests, and use pest identification and remediation methods, tools and equipment. Pest control methods will be analyzed and pest reports required by the State of California will be written. CSU

HORT-133 Landscape Construction
3 units SC
- *36 hours lecture/54 hours laboratory per term*
- *Recommended: HORT-110 and eligibility for ENGL-122 or equivalents*
- *Note: This course provides preparation for the C-27 landscape contracting license.*

This course introduces students to the information and skills required to install residential hardscapes using SITESv2 standards. SITES v2's rating system was developed from research, peer-reviewed literature, case-study precedents, and projects registered in the SITES Pilot Program by a diverse group of experts in soils, water, vegetation, materials, and human health and well-being. It includes best practices in landscape architecture, ecological restoration and related fields. Water conservation, plan reading, tool use and safety, and core sustainability principles are covered. CSU

HORT-134 Landscape Irrigation
3 units SC
- *36 hours lecture/54 hours laboratory per term*
- *Recommended: HORT-110, eligibility for ENGL-122 and placement through the assessment process or MATH-090 or MATH-090SP or MATH-090E or equivalents*
- *Note: The course provides preparation for the C-27 landscape contracting license.*

This course introduces irrigation system design, installation, maintenance, and auditing while focusing on plant health, water conservation, and system efficiency. Alternative sources for irrigation water will be explored. CSU

HORT-135 Landscape Estimating and Contract Documents
3 units SC
- *54 hours lecture per term*
- *Recommended: HORT-133 or equivalent*

This course is an introduction to professional landscape estimating, bidding and contract document preparation based on landscape plans. CSU

HORT-137L Pruning Laboratory
1 unit SC
- *54 hours laboratory per term*
- *Recommended: HORT-110 or equivalent*

This course will familiarize students with basic pruning techniques necessary for landscape management and maintenance. This course is part of the basic training in the Horticulture program. CSU

HORT-141 Tree Identification
3 units SC
- *54 hours lecture per term*
- *Recommended: HORT-110 and eligibility for ENGL-122 or equivalents*
- *Note: This course meets the plant certification for California Association for Nurserymen; California Landscape Contractor's Licensing and satisfies International Society of Arboriculture Continuing Education units*

This course presents classification and naming conventions, habits of growth, liabilities, and geographical origin of landscape trees. Topics include tree structural evaluation, landscape use, and structural analysis of species from nursery stock to mature specimens. CSU

HORT-141L Tree Identification Laboratory
1 unit SC
- *54 hours laboratory per term*
- *Recommended: HORT-110 and HORT-141 or equivalents*
- *Note: This course satisfies continuing education unit requirements for the International Society of Arboriculture Professional upgrades*

Students in this class will practice field identification of landscape trees, including the cultural requirements, landscape design criteria and functional values. Field outings to local gardens and arboreta are included. Tree planting site analysis requirements will be linked to standard arboricultural rating systems. CSU

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HORT-143 Shrub Identification
3 units SC
- *54 hours lecture per term*
- *Recommended: HORT-110 and eligibility for ENGL-122 or equivalents*
- *Note: This course meets the plant certification for California Association of Nurserymen, California Landscape Contractor's Licensing and satisfies International Society of Arboriculture Continuing Education units.*

Students will learn the taxonomy, identification, growth habits, landscape values and nativities of shrubs used in the urban landscape. Emphasis will be placed on contemporary and historical landscape design with a focus on regional appropriateness. CSU

HORT-143L Shrub Identification Laboratory
1 unit SC
- *54 hours laboratory per term*
- *Recommended: HORT-110 or equivalent*
- *Note: This course satisfies California Association of Nurserymen's continuing education requirements for members*

In this course students will practice the skills necessary to identify common and uncommon shrubs in the field. Cultural care requirements, landscape design criteria, and functional values will also be covered. Students will participate in field outings to local gardens, arboreta and parks. CSU

HORT-145 Groundcovers and Vines Identification
3 units SC
- *54 hours lecture per term*
- *Recommended: HORT-110 or equivalent*
- *Note: This course meets the plant certification requirements for California Association of Nurserymen and current guidelines for State of California Landscape Contractors Association*

This course presents taxonomy, identification, growth habits, cultural requirements and geographical origin of regionally appropriate native and exotic ground covers and vines. CSU

HORT-146 Ornamental Grass Identification
1.5 units SC
- *27 hours lecture per term*
- *Note: Field trips will be required for this course*

This course will acquaint students with ornamental grasses and grass-like plants available for use in developing landscapes. Discussion will include native and non-native species suitable for a wide variety of environments. CSU

HORT-147 Annuals and Perennials Identification
3 units SC
- *54 hours lecture per term*
- *Recommended: HORT-110 or equivalent*
- *Note: This course meets the plant certification requirements for California Association of Nurserymen and current guidelines for the state of California licensing for landscape contractors*

This class covers the taxonomic identity, growth habits, liabilities, cultural preferences and geographical origin of annuals and perennials used in Bay Area urban landscapes. CSU

HORT-147L Annuals and Perennials Identification Laboratory
1 unit SC
- *54 hours laboratory per term*
- *Recommended: HORT-110 and HORT 147 or equivalents*

Annual and perennial plants used in Bay Area landscapes will be identified. The cultural requirements, landscape design criteria, and functional values of those plants will be explored in depth. This class includes field outings to local gardens and arboreta. CSU

HORT-148L California Native Plants Laboratory
1 unit SC
- *54 hours laboratory per term*
- *Recommended: HORT-110 or equivalent*

This course presents a study of California plant communities and the environments that shape them. The dominant and typical plant constituents of each vegetation unit, focusing on native species currently used in the nursery industry will be covered. Habitat, soil, and climatic factors will be discussed as related to the plant species established in their natural and horticultural environment, exploring possibilities of integration into residential landscapes. Multiple day field trips to select California vegetation environments are taken to record relevant plant and habitat data. Destinations will vary based on season and term. CSU

HORT-150 Topics in Horticulture
.3-4 units SC
- *Variable hours*

A supplemental course in horticulture to provide a study of current concepts and problems in horticulture and related subdivisions. Specific topics will be announced in the schedule of classes. CSU

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HORT-160 Plant Propagation
1.5 units SC
- *18 hours lecture/27 hours laboratory per term*
- *Recommended: HORT-110 and eligibility for ENGL-122 or equivalents*

This course will introduce students to the principles and practices of plant propagation from seed and vegetative material to marketable nursery stock. The key concepts of physiological processes, environmental requirements and techniques required for successful plant production will be covered. CSU

HORT-163 Nursery and Greenhouse Practices
3 units SC
- *54 hours lecture per term*
- *Recommended: Eligibility for ENGL-122 or equivalent*

This course is designed to introduce the student to the nursery industry and explore the science of greenhouse management. Topics include greenhouse design and structure, manufacturing and operation, and business structure and management of a nursery. CSU

HORT-165 New Plant Introductions
3 units SC
- *54 hours lecture per term*
- *Recommended: HORT-110 and eligibility for ENGL-122 or equivalents*

In this course students learn the application of newly released plants in the nursery industry. Students are instructed in the selecting, testing and marketing processes of new plant introductions. Topics covered include the taxonomic identity, growth habits, climactic requirements, liabilities, and geographical origins of new plants. CSU

HORT-166 Fall Plant Production
1 unit SC
- *54 hours laboratory per term*
- *Recommended: HORT-160 and eligibility for ENGL-122 or equivalents*

This laboratory course will provide instruction on the principles and practices of fall plant production. Students will participate in greenhouse management, scheduling of plant production, seed-starting, vegetative propagation and the marketing of fall and winter grown containerized nursery stock. CSU

HORT-167 Spring Plant Production
1 unit SC
- *54 hours laboratory per term*
- *Recommended: HORT-160 and eligibility for ENGL-122 or equivalents*

This laboratory course will provide instruction on the principles and practices of spring container production. Greenhouse management, the scheduling of spring and summer plant production, seed starting and vegetative propagation, and the marketing of spring and summer grown containerized nursery stock will be examined. CSU

HORT-179 Arboriculture
3 units SC
- *54 hours lecture per term*
- *Recommended: HORT-110 and HORT-141 and eligibility for ENGL-122 or equivalents*
- *Note: This course satisfies the continuing education requirement for the International Society of Arboriculture and the California Association of Nurserymen*

Introduction to arboriculture, applied tree biology and forest ecology. How to care for and maintain trees in urban, rural and wildland settings. This course is a survey of current knowledge of trees as applied to tree care, landscape maintenance and landscape design fields. CSU

HORT-179L Arboriculture Laboratory
1 unit SC
- *54 hours laboratory per term*
- *Recommended: HORT-141, HORT-179 (should be taken concurrently) and eligibility for ENGL-122 or equivalents*

Designed for new horticulture students and professionals alike, this course introduces the concepts and features required to prune woody species for aesthetics and health. Topics include but are not limited to: tree anatomy and structure, positioning and timing of limb removal, crown reduction and rejuvenation techniques, as well as fruit stimulation of orchard species. This course will prepare career-oriented students for employment and eventual testing for the International Society of Arboriculture (ISA) Certified Arborist, or Certified Tree Worker Program(s); HORT-179L will follow study guides prepared by the ISA, and include exposure to climbing techniques, knots safety, chainsaw operation, and equipment maintenance. CSU

HORT-180 Introduction to Landscape Architecture
3 units SC
- *54 hours lecture per term*
- *Recommended: HORT-110 and ENGL-122 or equivalents*

This course is an introduction to the basic principles and concepts in the field of landscape architecture and landscape design. It will explore the history of human impact on natural environments and methods to mitigate those impacts. Design standards and practices governing landscape architecture and design like site analysis, planning and construction design will be covered. CSU, UC

HORT-181 Landscape Design I: Graphics
3 units SC
- *36 hours lecture/54 hours laboratory per term*
- *Recommended: HORT-110 and eligibility for ENGL-122 or equivalents*

This is the first out of two courses in landscape design techniques and concepts. It will cover the basics of the landscape design process; site analysis, methods of graphic representation of vegetation, topography, and other landscape elements. Students will explore different landscape design documents. CSU, UC

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HORT-182 Landscape Design II

3 units SC

- *36 hours lecture/54 hours laboratory per term*
- *Recommended: HORT-181, ARCHI-130 or equivalents, and eligibility for ENGL-122 or equivalent*

This is the second of two courses in landscape design techniques and concepts. It will continue to cover and broaden the landscape design process including analysis, evaluation and application of various landscape principles based upon historical and ecological values. CSU, UC

HORT-183 Residential Garden Design

1 unit SC

- *18 hours lecture per term*

This course is intended for students in the nursery industry and landscape construction as well as interested laypersons. Principles and techniques will be addressed as they apply to established residential landscapes. Students will be required to develop a conceptual plan for a residential garden. CSU

HORT-184 Planting Design

2.5 units SC

- *36 hours lecture/18 hours laboratory per term*
- *Recommended: HORT-181 and HORT-182 or equivalents*

This course will acquaint the student with the principles of design as they specifically apply to landscape plant material. Design principles will address various plant and hardscape palettes to develop an aesthetically pleasing, water-wise and environmentally sensitive landscape planting design. CSU

HORT-185 Site Analysis

1.5 units SC

- *18 hours lecture/27 hours laboratory per term*
- *Recommended: HORT-182 or equivalent*

This course is an introduction to the field of landscape design and the profession of landscape architecture. Landscape fundamentals are introduced, with an emphasis on the understanding of space and form in the landscape, and how a sustainable landscape design can convey meaning while fulfilling functional requirements. CSU

HORT-186 Grading and Drainage

1.5 units SC

- *18 hours lecture/27 hours laboratory per term*
- *Recommended: HORT-182 or equivalent*

In this course students will evaluate a landscape site and create and modify topography plans for proper grading and drainage of the site. CSU

HORT-187 Sustainable Water Practices

2.5 units SC

- *36 hours lecture/18 hours laboratory per term*

This course in landscape irrigation and sustainable water practices is designed for landscape professionals. It includes an overview of state and local water delivery systems and important water use and supply issues in California. It examines relationships among plants, soils, and water. Water audits, proper irrigation design and monitoring techniques that aid in the efficient use of local water resources will be addressed. CSU

HORT-296 Internship in Occupational Work Experience Education in HORT

1-4 units SC

- *May be repeated three times*
- *Variable hours*
- *Note: In order to enroll in the HORT-296 course, students must be interning or volunteering, register for the course, complete an online Employment Form, and participate in an orientation. The Employment Form can be accessed at https://insite.4cd.edu/orgs/dept/dvc/coopapp/default.aspx. Incomplete grades are not awarded for this course.*

HORT-296 is a supervised internship in a skilled or professional level assignment in the student's major field of study or area of career interest. Under the supervision of a college instructor, students will engage in on-the-job and other learning experiences that contribute to their employability skills and occupational or educational goals. Internships may be paid, non-paid, or some partial compensation provided. Five hours work per week or seventy-five hours work per term is equal to one unit (paid) or one unit for four hours work per week or sixty hours per term (unpaid work). Students may earn up to a maximum of sixteen units; repetition allowed per Title 5 Section 55253. CSU

HORT-298 Independent Study

.5-3 units SC

- *Variable hours*
- *Note: Submission of acceptable educational contract to department and Instruction Office is required.*

This course is designed for advanced students who wish to conduct additional research, a special project, or learning activities in a specific discipline/subject area and is not intended to replace an existing course. The student and instructor develop a written contract that includes objectives to be achieved, activities and procedures to accomplish the study project, and the means by which the supervising instructor may assess accomplishment. CSU

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HORT-299 Student Instructional Assistant

.5-3 units SC

- *Variable hours*
- *Note: Applications must be approved through the Instruction Office. Students must be supervised by a DVC instructor.*

Students work as instructional assistants, lab assistants and research assistants in this department. The instructional assistants function as group discussion leaders, meet and assist students with problems and projects, or help instructors by setting up laboratory or demonstration apparatus. Students may not assist in course sections in which they are currently enrolled. CSU