

FOOTHILL COLLEGE

Credit Program Narrative

Certificate of Achievement Landscape Technician

Item 1. Program Goals and Objectives

The goal of this program is to provide instruction and field practice in the establishment and maintenance of landscapes, particularly landscapes in public areas. Students will receive instruction in identification of soil issues, safe equipment operation, plant problems, pruning, planting, fine gardening, plant fertilization and care and disposal of materials. The program will emphasize sustainable approaches to fine gardening where applicable. This program is consistent with the mission of community colleges in that is prepared to establish entry level career education to the following career choices:

- Grounds maintenance
- Parks maintenance
- Fine gardening
- Greens keeper

The primary program objective is for students to be able to safely, effectively and esthetically establish and maintain public landscapes. Specific objectives for this program area as follows:

- identify various types of soil structure and texture.
- collect soil samples, test for major, secondary and trace elements, pH, EC, water percolation and water holding capacity.
- demonstrate knowledge of the terms and principles of soil chemistry, physics, and commercial management.
- evaluate the health and value of nursery stock to be planted in the landscape.
- practice and achieve proficiency in the safe handling of various landscape maintenance equipment, including hand tools and power equipment.
- demonstrate skills required for proper pruning of various species of trees and shrubs.
- plant and transplant trees, shrubs, and perennials.
- identify routine maintenance requirements and special problems in several different landscape settings.
- demonstrate an understanding of specific practices for implementing and maintaining landscapes
- develop horticultural work skills under the guidance of a horticultural unit supervisor.
- discuss diversity in the workplace.
- identify edible, ornamental plants used in residential landscapes.
- list common applications for edible plants in the design of landscapes.
- identify nutrients required by plants.
- identify nutrient deficiencies in plants.
- select fertilizers for appropriate use..
- describe the formulations for fertilizers..

- discuss the benefits of healthy soils and the contribution composting makes to plant nutrition.
- demonstrate an understanding of the theory, techniques, and maintenance practices used in composting and vermicomposting.
- demonstrate the ability to construct and maintain a variety of composting and vermicomposting systems.

Item 2. Catalog Description

The Landscape Technician Certificate of Achievement is a low unit certificate to be conducted in partnership with academic organizations seeking credentials for students in a field-based program. This program is designed to provide enrollees engaged in a hands-on learning experience an opportunity to use their field experience combined with classroom instruction to obtain a Certificate that will aid in their employment after completion of their school experience. Students may be enrolled in a variety of academic programs in order to qualify for participation in this certificate. To complete the program students must successfully complete all of the courses listed below for a total of 18 units. Career options for this certificate include:

- Grounds maintenance
- Parks maintenance
- Fine gardening
- Greenskeeper

Item 3. Program Requirements

Requirements	Dept. Name/#	Name	Units	Sequence
Required Core (18 units)	HORT 30	Horticultural Practices: Soils	3	Yr 1, Fall Yr 1, Winter
	HORT 52C	Horticultural Practices: Plant Installation & Maintenance	3	
	HORT 80A	Environmental Horticulture Fall Skills	2	
	HORT 80B	Environmental Horticulture Winter Skills	2	
	HORT 80C	Environmental Horticulture Spring Skills	2	
	HORT 80D	Environmental Horticulture Summer Skills	1	
	HORT 90L	Plant Propagation: Basic Skills	1	
	HORT 90M	Plant Nutrition and Fertilization	1	
	HORT 90V	Sustainable Organic Gardening		
	HORT 91A	Composting Theory and Techniques		

TOTAL UNITS

18 units

Proposed Sequence:

Year 1, Fall = 10 units

Year 1, Winter = 8 units

TOTAL UNITS: 18 unit

(Sequence repeats every two quarters)

Item 4. Master Planning

One of the primary goals of Foothill College (and the Foothill DeAnza District) is the development of programs that support Career Technology Education goals. That statement is confirmed by the following excerpt from the Foothill-DeAnza Strategic Plan 2017-2023:

Strategic Priority #4: Career goals Key mission statement terms relative to strategic priority #4: (Mission) Student Success (Fosters) Innovation (Meeting) Career goals (Who we serve) Diversity (Developing) Broadly educated community (Developing) Socially responsible community

Student success can mean many things. For many at the community college, success comes in the form of professional development to advance one's career, earning a Career Technology Education (CTE) certificate or degree, and/or completing an academic pathway that leads to a four-year degree in the professional field of their choice. Consequently, FHDA places a priority in understanding the professional needs of its community as well as support in achieving their professional goals.

Goals:

CG 4.1: Partner with business and industry within the region to prepare students for the workforce. CG 4.2: Increase employment rates for CTE participants.

The proposed Foothill certificate for Landscape Technician is intended to address a specific need for employment within our region, landscape workers who have experience but also have an introductory level of formal education. Foothill, along with other colleges in the service area, offer AS degrees and high-unit certificates (40 to 80 units). The existence of these programs serves both as an opportunity and a barrier. For those with the means and preparation, obtaining such a degree provides the chance to be promoted from labor positions to management positions. The barrier appears when the prospective student cannot afford the cost and time to attend up to two years of courses. Additional barriers are created when courses are offered, but offered during hours the student must work and at locations long distances from the student's home.

The most recent program review for Horticulture (2016/17) indicates a large and growing percentage of the Foothill Horticulture students are of Latino/a descent. This demographic is also the primary group that suffers from time/money challenges to attend courses. Employment for this group continues to be good, as it is a dominant portion of the landscape industry employment. Latino/a students often enroll in the Horticulture program, only to drop out due to job opportunities or the need to work to support themselves and family. Creation of an intermediate level of academic achievement allows this groups of students the opportunity to obtain credentials without having to dedicate long periods of time to schooling and may also serve as a bridge to these students completing more advanced degrees.

Item 5. Enrollment and Completer Projections

It is anticipated that approximately 10 to 15 students will choose this program when established, with that number significantly higher if relationships with other organizations are established. There are current discussions being undertaken by the Apprenticeship Program at Foothill to establish a program for CTE based programs and schools in the south bay area. Students that are enrolled in a qualified sponsor organization may qualify to concurrently enroll in the Foothill College program. The program can be administered in cohorts of approximately 30 students, with enrollments being offered each year. Of this number, we anticipate between 25 and 28 of the enrollees will complete the program of study in the first year, with similar success numbers after 5 years of the program.

Course Department Number	Course Title	<Year 1>		<Year 2>	
		Annual # Sections	Annual Enrollment Total	Annual # Sections	Annual Enrollment Total
HORT 30	Horticultural Practices: Soils	1	42	1	21
HORT 52C	Horticultural Practices: Plant Installation & Maintenance	1	30	1	29
HORT 80A	Environmental Horticulture Fall Skills	1	27	1	27
HORT 80B	Environmental Horticulture Winter Skills	1	26	1	27
HORT 80C	Environmental Horticulture Spring Skills	1	27	1	17
HORT 80D	Environmental Horticulture Summer Skills	1	33	1	20
HORT 90L	Plant Propagation: Basic Skills	0	0	0	0
HORT 90M	Plant Nutrition & Fertilization	0	0	1	28
HORT 90V	Sustainable Organic Gardening	0	0	1	31
HORT 91A	Composting Theory & Techniques	0	0	1	19

Item 6. Place of Program in Curriculum/Similar Programs gardening and

Foothill College currently has a program in Environmental Horticulture and Design that offers a Certificate of Achievement (65 units) and an AS (90 units). There is no certificate with this title in the program or school curriculum. Reviewing the college curriculum shows:

- a. No active inventory records will require inactivation.
- b. The program does not replace any existing program.
- c. The closest related programs are the Certificated of Achievement and the AS in Environmental Horticulture and Design.

Item 7. Similar Programs at Other Colleges in Service Area (Full program descriptions and curriculum are in Appendix A)

Within the Foothill College service area there are four other community colleges that offer Horticulture programs, each offering AS degrees and one or more certificates. The certificates offered at these four colleges range from 17 units to 41 units and provide a general focus on a range of Hort related topics. While other certificates exist, the Foothill proposal is a compact, low-unit, lab and field based curriculum intended to provide balance of classroom learning with practical experience. Programs at other area colleges provide a general Horticultural background but are heavy in units (in most programs) and minimal in courses that put the student into field situations to obtain experience. The Foothill program has the advantage of being offered as designed to organizations interested in creating internship programs or apprenticeships. Another difference between the Foothill program and other colleges is the proximity to the bulk of the south bay population. The program is designed, in part, to serve local students who may not have the ability to travel 40 miles or longer distances to another school. Foothill is also capable of offering the program at remote sites hosted by a partner interested in the program.

The schools and their certificate program that is closest to the one proposed by Foothill include:

City College of San Francisco (32 unit is landscape maintenance)

This certificate compares to the proposed Foothill certificate in that students are preparing for employment in the landscape maintenance field with a focus on landscape gardening. The curriculum is more extensive in coursework than the proposed Foothill curriculum and includes plant identification and business related courses. The Foothill program will be more lab focused on the maintenance of plant materials and shorter in duration, and more easily adapted to programs seeking apprenticeship relationships.

Merritt College, Oakland (41 unit certificate in landscape and parks maintenance)

This certificate compares to the proposed Foothill certificate in that students are being directed towards careers in parks and grounds. The program is very extensive in required coursework with courses in pest identification and management and arboriculture. The Foothill certificate is, again, shorter and more lab oriented with extensive field experience.

Cabrillo College, Aptos (17 unit certificate in general Horticultural skills)

The program at Cabrillo is the closest to the Foothill proposal in length (17 units vs. 18 units) and includes courses focused on crop production and pest management. The only course identified as providing field experience is a 1 unit work experience course. As with the other related programs, the Cabrillo course is heaviest in the classroom experience and minimal in field/lab experience. Cabrillo's certificate is also one that is generally focused rather than specifically targeting the maintenance aspect of the field.

Mt. Diablo College, Pleasant Hill (24.5 unit certificate in landscape construction and management)

Mt. Diablo's certificate provides some opportunity for lab/field work (up to 4 units), but is more focused on turf, plant id, and construction related courses. Mt. Diablo would also be a considerable distance (70 miles) for local students to commute to work on their certificate.

Research was also done in an attempt to find within the service area alternative programs, including those based on internships or apprenticeships, that might offer programs similar to the Foothill proposal. The only related program was a Landscape Technician program offered in San Ramon CA operated by a labor based organization. They currently did not display any agreements or show any history of landscape related contracts. The full list of apprenticeship programs is included in Appendix B.

Item 8. Identification of any resources that would be needed to establish the program

The following resources will be required to operate the proposed certificate. The sources of the resource fulfillment is noted.

Classrooms;

1 classroom will be required on Saturdays (Charter School classroom will be used for all classes)

Equipment:

Basic landscape maintenance equipment will be required for most classes. (Equipment is already owned by Charter School or Foothill College)

Staffing:

Adjunct and full-time faculty will be required to teach courses. Stipends for lab assistants provided by Charter School will be required. (salary for adjunct and full-time faculty will be offset by enrollment in courses by students, stipends must be budgeted from College funds.)

Support:

Assistance will be required from the Foothill staff for registering students, admitting students, coordinating Dual enrollment, and (if necessary) applying for financial aid and other student support activities.

Appendix A Landscape Certificate and Associate Degrees in the Bay Area

Environmental Horticulture City College of San Francisco 40 miles
50 Phelan Avenue
San Francisco, CA 94112

(32 unit certificate in landscape maintenance, AS in landscape gardening and contracting)
The program of study for this certificate is designed to give students both broad and specialized training for entry level employment or to add to their capabilities in landscape maintenance.

Course Units

Required courses:

- O H 50 Introduction to Environmental Horticulture 3.00
 - O H 56 Horticultural Machines 3.00
 - O H 60 Business Practices 3.00
 - O H 63 Soils 3.00
 - O H 75 Pest Management 3.00
 - O H 76 Fall and Winter Plant Identification 4.00
 - O H 77 Spring and Summer Plant Identification 4.00
 - CMST 11 Basic Public Speaking 3.00
 - O H 53A Beginning Landscape Horticulture 3.00
 - O H 53B Advanced Landscape Horticulture 3.00
- Total: 32.00

Environmental Horticulture Merritt College 50 miles
12500 Campus Drive
Oakland, CA 94619

(41 unit certificate in landscape and parks maintenance, AS in landscape and parks maintenance)
The Intermediate Landscape and Parks Maintenance certificate program trains students to work as grounds maintenance workers in a variety of settings, including public or private parks, golf courses, and commercial or residential gardens. The curriculum provides studies in basic horticulture, plant ID, and maintenance practices. These areas of emphasis can help a student gain employment in the field of landscape and parks maintenance with public works departments, landscape maintenance companies, golf courses, parks and recreation departments, or start their own landscape maintenance companies. A Certificate of Achievement will be awarded upon satisfactory completion of the certificate requirements specified below.

LH 1 OR LH 1E	Introduction to Landscape Horticulture (Day w/lab) OR Introduction to Landscape Horticulture (Eve)	3
LH 1E	Introduction to Landscape Horticulture (Eve)	3

LH 23	Plant Terminology	2.5
LH 26	Pruning	.5
Select one plant ID course from the following:		
LH 2 or 2E; 3 or 3E; 4 or 4E; 5A ,5B, 5EA or 5EB; 6A, 6B, 6EA, or 6EB; 7 or 7E; 40 or 40E		3
Select one course from the following:		
LH 8 or 8E	Turf Management with lab (Day) OR Turf Management (Eve)	3
OR		
LH 13 or 13E	Arboriculture with Lab (Day) or Arboriculture (Eve)	3
Select one course from the following:		
LH 10	Insects	3
LH 11	Plant Diseases and Their Control	3
LH 12	Weeds in the Urban Landscape	3
Select one course from the following:		
LH 16	Soil Management	3
LH 19	Plant Nutrition	3
Level A Total Required Units:		18
Level A Requirements:		18
Plus Level B Requirements:		
Dept/No.	Title	Units
LH 201	Landscape Maintenance Practices	3
Select one additional course from the following*:		
*Select course not previously taken.		
LH 8 or 8E	Turf Management with Lab (Day) OR Turf Management (Eve)	3
LH 13 or LH 13E	Arboriculture with Lab (Day) or Arboriculture (Eve)	3
Select one additional plant ID course from the following:		
*Select course not previously taken.		
LH 2 or 2E; 3 or 3E; 4 or 4E; 5A ,5B, 5EA or 5EB; 6A, 6B, 6EA, or 6EB; 7 or 7E; 40 or 40E		3
Select one additional course from the following:		
LH 10	Insects	3
LH 11	Plant Diseases & Their Control	3
LH 12	Weeds in the Urban Landscape	3
Select one additional course from the following:		

LH16	Soil Management	3
LH19	Plant Nutrition	3
Level B Total Required Units:		30

Environmental Horticulture Cabrillo College 30 miles
6500 Soquel Drive
Aptos CA 95003
(17 unit general horticulture skills certificate)

Required Courses U nits

HORT 1A Basic Horticulture.....	4
HORT 1B Basic Horticulture: Crop Production.....	4
HORT 2 Soil Science and Management.....	4
HORT 150 Pest Management.....	4
HORT 199C Career Work Experience Education.....	1

Total Units 17

Environmental Horticulture Diablo Valley College 70 miles
321 Gold Club Road
Pleasant Hill. CA 94523
(24.5 unit certificate in landscape construction and management)

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

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.

Appendix B

Apprenticeship sponsors in the State of California:

<u>Apprenticeship Name</u>	<u>Apprenticeship Sponsor</u>	<u>Distance</u>
LANDSCAPE GARDENER	Terminal Island Adult School - San Pedro, CA 1299 S. Seaside Avenue SAN PEDRO CA 90731-7359 310-732-5469	N/A
LANDSCAPE GARDENER	Naval Consolidated Brig, Miramar 46141 Miramar Way SAN DIEGO CA 92145 858-577-7372	N/A
LANDSCAPE TECHNICIAN	NO. CA DISTRICT COUNCIL OF LABORERS JATC 1001 WESTSIDE DR SAN RAMON CA 94583-4099 925-556-0858	43 miles
LANDSCAPE TECHNICIAN	LABORERS SOUTHERN CA APPRENTICESHIP PROGRAM 1385 W SIERRA MADRE AVE AZUSA CA 91702-1651 626-610-1700	N/A
LANDSCAPE TECHNICIAN	SO CA Laborers Landscape and Irrigation Fitter JAC 1385 W. Sierra Madre Avenue AZUSA CA 91702 626-610-1700	N/A

Appendix C Employment data

Overall employment outlook taken from the GETLMI data source (<https://www.onetonline.org/>)

SOC Code	Occupational Title	Typical Entry Level	2014 Jobs	2017 Jobs	2014-17 Change	% Change 2014-17	Openings (New + Replacements)	Annual Openings	10% Hourly Earnings	Median Hourly Earnings
37-1012	First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers	HS diploma or equivalent	3,889	4,060	171	4.4%	363	121	\$14.42	\$21.05
37-3011	Landscaping and Groundskeeping Workers	Less than HS	36,012	38,341	2,328	6.5%	5,302	1,767	\$10.54	\$14.34
37-3019	Grounds Maintenance Workers, All Other	Less than HS	626	675	50	7.9%	100	33	\$11.50	\$15.35
Grand Total			217,714	226,721	9,007	4.1%	30,776	10,259	\$10.05	\$12.75