

## HORTICULTURE

### Natural and Applied Sciences Division

Jamie Alonzo, Division Dean

Division Office, Room 701

Peter Shaw, Department Chair, (831) 479-6241

Aptos Counseling: (831) 479-6274 for appointment

Watsonville Counseling: (831) 786-4734

Call (831) 479-6328 for more information

<http://www.cabrillo.edu/programs>



Associate Degree  
for Transfer  
*A Degree with a Guarantee.™*

### Agriculture Plant Sciences A.S.-T Transfer Degree

The Horticulture program prepares students for entry level to management jobs and self-employment in diverse horticulture businesses, as well as preparing students to transfer to the CSU to pursue baccalaureate degrees in Agriculture, Agriculture and Environmental Plant Sciences, Agricultural Education, and Sustainable Agriculture. Students will demonstrate knowledge of basic plant science, soil and soil testing, integrated pest management, evaluating the cost of production using different production techniques, and developing crop production plans for various crops. Careers related to this field include ornamental and edible crop production and landscape horticulture. The program also provides a foundation for students in Ornamental Horticulture and Landscape Architecture, and affords local horticulturists and working professionals the means to upgrade their skills and knowledge. Opportunities to obtain valuable experience are provided in the greenhouse/farm facility and by working to enhance campus landscapes.

1. Analyze a soil test and pest management plan to produce a common crop in Santa Cruz County.

2. Evaluate production techniques to achieve a cost-effective crop.

Cabrillo offers options for degrees in Agriculture. The first option listed below is the Associate in Science in Agriculture Plant Science for Transfer (A.S.-T in Agriculture Plant Science), which is intended for students who plan to transfer and complete a bachelor's degree in Agriculture or a similar major at a CSU campus (CSU Chico, CSU Cal Poly Pomona and CSU Stanislaus). Students completing the Agriculture Plant Science for Transfer are guaranteed admission to the CSU system, but not to a particular campus or major. This Associate in Science in Agriculture Plant Science for Transfer A.S.-T may not be the best option for students intending to transfer to a particular CSU campus or to a university or college that is not part of the CSU system. See Associate Degree for Transfer information in the Cabrillo College Catalog.

The college also offers Horticulture degrees, including A.S. degrees in General and Crop Science. Separate Certificates of Achievement may be obtained in other areas of concentration, and eight Skills Certificates in Horticulture are available.

The following is required for all A.A.-T or A.S.-T degrees:

- Completion of 60 CSU-transferable semester units.
- Minimum grade-point average (GPA) of at least 2.0 in all CSU-transferable coursework. While a minimum of 2.0 is required for admission, some majors may require a higher GPA.
- Completion of a minimum of 18 semester units in the major with a

letter grade of "C" or better, or a "P" if the course is taken on a "Pass/No Pass" basis.

- Certified completion of the California State University General Education- Breadth pattern (CSU GE Breadth) or the Intersegmental General Education Transfer Curriculum (IGETC) pattern.

### Learning Outcomes

The Cabrillo College Core Competencies (with an emphasis in the study of Agriculture):

1. Communication: Reading, Writing, Listening, Speaking, and/or Conversing
2. Critical Thinking and Information Competency: Analysis, Computation, Research, Problem Solving
3. Global Awareness: An appreciation of Scientific processes, Global Systems and Civics, and Artistic Variety
4. Personal Responsibility and Professional Development: Self-Management and Self-Awareness, Social and Physical Wellness, Workplace Skills

### CSU or IGETC General Education Requirements 37-39 Units

#### Core Courses - Take all Core Courses

HORT 1A	Basic Horticulture .....	4
HORT 2	Soil Science and Management.....	4
CHEM 1A	General Chemistry I .....	5
ECON 1B	Introduction to Microeconomics .....	3
BUS 9	Business Statistics .....	3
or		
MATH 12	Elementary Statistics .....	5
or		
MATH 12H	Honors Elementary Statistics .....	5
or		
PSYCH 2A	Statistics for Behavioral Sciences.....	3

#### List A - Select one course from:

HORT 62	Fall Plant Materials and Design .....	3
or		
HORT 63	Spring Plant Materials and Design .....	3

#### List B - Other courses recommended, if needed on specific CSU campus requirements (see [www.ASSIST.org](http://www.ASSIST.org)):

BIO 11A	General Biology .....	4
HORT 1B	Basic Horticulture: Crop Production .....	4
PHYS 10	Introduction to Physics.....	3
and		
PHYS 10L	Introduction to Physics Lab .....	1

### Total Units 60

*BIO, CHEM, PHYS and all Statistics courses are also General Education courses.*

**General Horticulture & Crop Production A.S. Degree**

**Learning Outcomes**

1. Analyze a soil test and pest management plan to produce a common crop in Santa Cruz County. (Communication, Critical Thinking)
2. Evaluate production techniques to achieve a cost-effective crop. (Communication, Global Awareness)

**A.S. General Education 21 Units**

**Core Courses (37-40 units)**

HORT 1A	Basic Horticulture .....	4
HORT 1B	Basic Horticulture: Crop Production .....	4
HORT 2	Soil Science and Management.....	4
HORT 52	Greenhouse Design and Operation .....	3
HORT 54	Business Aspects of Horticulture.....	4
HORT 58	Irrigation Systems Design and Management .....	3
HORT 62	Fall Plant Materials and Design .....	3
and		
HORT 63	Spring Plant Materials and Design .....	3
and		
HORT 199C	Career Work Experience Education .....	1
or		
HORT 70	Organic Agriculture.....	4
and		
HORT 71	Organic Food Production 1 .....	4
and		
HORT 72	Organic Food Production 2 .....	1
HORT 100A	Plant Propagation.....	1 - 3
HORT 125	Hydroponic and Substrate Production.....	3
HORT 150	Pest Management .....	4

<b>Approved Electives:</b>	<b>Units</b>
Any Horticulture Course .....	0 - 2

**Total Units 60**

**General Horticulture and Crop Production Certificate of Achievement**

**Learning Outcomes**

1. Analyze a soil test and pest management plan to produce a common crop in Santa Cruz County. (Communication, Critical Thinking)
2. Evaluate production techniques to achieve a cost-effective crop. (Communication, Global Awareness)

**Core Courses (37-40 units)**

HORT 1A	Basic Horticulture .....	4
HORT 1B	Basic Horticulture: Crop Production .....	4
HORT 2	Soil Science and Management.....	4
HORT 52	Greenhouse Design and Operation .....	3
HORT 54	Business Aspects of Horticulture.....	4
HORT 58	Irrigation Systems Design and Management .....	3
HORT 62	Fall Plant Materials and Design .....	3
and		
HORT 63	Spring Plant Materials and Design .....	3
and		
HORT 199C	Career Work Experience Education .....	1
or		
HORT 70	Organic Agriculture.....	4
and		

HORT 71	Organic Food Production 1 .....	4
and		
HORT 72	Organic Food Production 2 .....	1
HORT 100A	Plant Propagation.....	1 - 3
HORT 125	Hydroponic and Substrate Production.....	3
HORT 150	Pest Management .....	4
<b>Other Required Courses (3-6 Units)</b>		<b>Units</b>
ENGL 100	Elements of Writing.....	3
or		
ESL 100	High Advanced Academic ESL .....	4-6
or		
ENGL 1A/1AH/1AMC/1AMCH .....		3
or		
CABT 157	Business and Technical Writing .....	3

**Total Units 40-47**

**Landscape Horticulture A.S. Degree**

**Learning Outcomes**

1. Analyze a soil test and pest management plan to produce a common crop in Santa Cruz County. (Communication, Critical Thinking)
2. Evaluate production techniques to achieve a cost-effective crop. (Communication, Global Awareness)

**A.S. General Education 21 Units**

**Core Courses (39 units)**

HORT 1A	Basic Horticulture .....	4
HORT 2	Soil Science and Management.....	4
HORT 54	Business Aspects of Horticulture.....	4
HORT 58	Irrigation Systems Design and Management .....	3
HORT 62	Fall Plant Materials and Design .....	3
HORT 63	Spring Plant Materials and Design .....	3
HORT 65	Landscape CADD and Surveying .....	2
HORT 66	Landscape Design .....	3
HORT 150	Pest Management .....	4
HORT 164	California Native Plants & Plant Communities.....	2
HORT 172	Arboriculture .....	3
or		
HORT 160B	Edible Landscaping.....	3
or		
HORT 176	Permaculture Design.....	3
HORT 175	Sustainable Landscaping.....	4

**Total Units 60**

**Landscape Horticulture Certificate of Achievement**

**Learning Outcomes**

1. Analyze a soil test and pest management plan to produce a common crop in Santa Cruz County. (Communication, Critical Thinking)
2. Evaluate production techniques to achieve a cost-effective crop. (Communication, Global Awareness)

**Core Courses (39 units)**

HORT 1A	Basic Horticulture .....	4
HORT 2	Soil Science and Management.....	4
HORT 54	Business Aspects of Horticulture.....	4
HORT 58	Irrigation Systems Design and Management .....	3

HORT 62	Fall Plant Materials and Design .....	3
HORT 63	Spring Plant Materials and Design .....	3
HORT 65	Landscape CADD and Surveying .....	2
HORT 66	Landscape Design .....	3
HORT 150	Pest Management .....	4
HORT 164	California Native Plants & Plant Communities.....	2
HORT 172	Arboriculture .....	3
or		
HORT 160B	Edible Landscaping.....	3
or		
HORT 176	Permaculture Design.....	3
HORT 175	Sustainable Landscaping.....	4
<b>Other Required Courses (3 - 6 Units)</b>		<b>Units</b>
ENGL 100	Elements of Writing.....	3
or		
ESL 100	High Advanced Academic ESL .....	4-6
or		
ENGL 1A/1AH/1AMC/1AMCH	.....	3
or		
CABT 157	Business and Technical Writing .....	3
<b>Total Units</b>		<b>42 - 45</b>

**Arboriculture Skills Certificate**

**Learning Outcomes**

1. Accurately identify local trees found in Santa Cruz County. (Critical Thinking, Professional Development)

<b>Required Course</b>		<b>Units</b>
HORT 62	Fall Plant Materials and Design .....	3
HORT 63	Spring Plant Materials and Design .....	3
HORT 150	Pest Management .....	4
HORT 172	Arboriculture .....	3
HORT 173	Landscape Pruning .....	1
HORT 199C	Career Work Experience Education .....	1

**Total Units 15**

**General Horticulture Skills Certificate**

**Learning Outcomes**

1. Analyze a soil test for suitability for common landscape plants. (Communication, Critical Thinking)

<b>Required Courses</b>		<b>Units</b>
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**

**Greenhouse and Nursery Management Skills Certificate**

**Learning Outcomes**

1. Evaluate production techniques to achieve a cost effective crop. (Communication, Critical Thinking Problem Solving)
2. Recommend appropriate propagation techniques for native nursery crops. (Communication, Problem Solving)

<b>Required Courses</b>		<b>Units</b>
HORT 1A	Basic Horticulture .....	4
HORT 1B	Basic Horticulture: Crop Production .....	4
HORT 52	Greenhouse Design and Operation .....	3
HORT 100A	Plant Propagation .....	1 - 3
HORT 150	Pest Management .....	4
<b>Total Units</b>		<b>16 - 18</b>

**Landscape Design Skills Certificate**

**Learning Outcomes**

1. Evaluate a local garden for sustainability. (Global Awareness, Professional Development)

<b>Required Courses</b>		<b>Units</b>
HORT 62	Fall Plant Materials and Design .....	3
HORT 63	Spring Plant Materials and Design .....	3
HORT 65	Landscape CADD and Surveying .....	2
HORT 66	Landscape Design .....	3
HORT 175	Sustainable Landscaping.....	4
HORT 199C	Career Work Experience Education .....	1
<b>Total Units</b>		<b>16</b>

**Landscaping Skills Certificate**

**Learning Outcomes**

1. Analyze a soil test for suitability for common landscape plants. (Communication, Critical Thinking)
2. Identify plants using correct botanical nomenclature and suggest proper use in a landscape. (Critical Thinking, Professional Development)

<b>Required Courses</b>		<b>Units</b>
HORT 2	Soil Science and Management.....	4
HORT 58	Irrigation Systems Design and Management .....	3
HORT 62	Fall Plant Materials and Design .....	3
or		
HORT 63	Spring Plant Materials and Design .....	3
HORT 65	Landscape CADD and Surveying .....	2
HORT 175	Sustainable Landscaping.....	4
<b>Total Units</b>		<b>16</b>

**Permaculture Skills Certificate**

**Learning Outcomes**

1. Evaluate a site and identify its assets for permaculture.
2. Design a landscape using permaculture principles.

<b>Required Courses</b>		<b>Units</b>
HORT 2	Soil Science and Management.....	4
HORT 58	Irrigation Systems Design and Management .....	3
HORT 160B	Edible Landscaping.....	3
HORT 175	Sustainable Landscaping.....	4
HORT 176	Permaculture Design.....	3
<b>Total Units</b>		<b>17</b>

**Sustainable and Organic Food Production Skills Certificate**

**Learning Outcomes**

1. Evaluate the best organic management practices for locally grown crops. (Global Awareness, Critical Thinking, Professional Development)
2. Evaluate a nutritional program for selected crops. (Critical Thinking, Professional Development)

<b>Required Courses</b>		<b>Units</b>
HORT 2	Soil Science and Management.....	4
HORT 70	Organic Agriculture.....	4
HORT 71	Organic Food Production 1 .....	4
HORT 72	Organic Food Production 2 .....	1
HORT 125	Hydroponic and Substrate Production.....	3
HORT 199C	Career Work Experience Education .....	1
<b>Total Units</b>		<b>17</b>

**Horticulture Courses**

**HORT 1A Basic Horticulture**

4 units; 3 hours Lecture, 3 hours Laboratory  
 Recommended Preparation: Eligibility for ENGL 100 or ESL 100 and READ 100; Eligibility for MATH 154.  
 Repeatability: May be taken a total of 1 time.  
 Introduces plant science including structure, growth process, physiology, soils, propagation, history, and plant adaptations for survival in a Mediterranean climate.  
*Transfer Credit:* Transfers to CSU; UC. C-ID: AG-PS 104

**HORT 1B Basic Horticulture: Crop Production**

4 units; 3 hours Lecture, 3 hours Laboratory  
 Recommended Preparation: Eligibility for ENGL 100 or ESL 100 and READ 100; Eligibility for MATH 154.  
 Repeatability: May be taken a total of 1 time.  
 Surveys the production of ornamental and landscape plants to gain a working knowledge of how light, temperature, water, fertilizers, and soilless media interact in a controlled environment. Also covers pest management and propagation of selected ornamentals.  
*Transfer Credit:* Transfers to CSU.

**HORT 2 Soil Science and Management**

4 units; 3 hours Lecture, 3 hours Laboratory  
 Recommended Preparation: Eligibility for ENGL 100 or ESL 100 and READ 100; Eligibility for MATH 154.  
 Repeatability: May be taken a total of 1 time.  
 Examines physical, chemical, and biological composition of soils, local soil formations, methods of soil sampling and testing, fertilizer and liming techniques, production and use of organic and chemical fertilizers, green manures, and relationship between soils and human culture. Includes the use and testing of soils for production plus septic and gray water systems.  
*Transfer Credit:* Transfers to CSU; UC. C-ID: AG-PS 128L

**HORT 52 Greenhouse Design and Operation**

3 units; 3 hours Lecture

Recommended Preparation: Eligibility for ENGL 100 or ESL 100 and READ 100; Eligibility for MATH 154.

Repeatability: May be taken a total of 1 time.

Presents the design and management of commercial and residential greenhouses including site analysis, greenhouse styles, glazing, circulation, cooling, venting, heating systems, and control systems. This class also covers general growing conditions of plants in a controlled environment. The business of nurseries and greenhouses is also covered briefly.

*Transfer Credit:* Transfers to CSU.

**HORT 54 Business Aspects of Horticulture**

4 units; 3 hours Lecture, 3 hours Laboratory

Recommended Preparation: Eligibility for ENGL 100 or ESL 100 and READ 100; Eligibility for MATH 154.

Repeatability: May be taken a total of 1 time.

Focuses on starting and managing horticultural businesses, including licenses required, developing a business plan, sales, marketing, computer invoicing, and record keeping and legal requirements of employers. Discusses myriad of employment opportunities, especially niche markets. Labs include field trips and retail/inventory training for departmental plant sales.

*Transfer Credit:* Transfers to CSU.

**HORT 57 Sustainable Landscape Construction**

3 units; 2 hours Lecture, 3 hours Laboratory

Recommended Preparation: Eligibility for ENGL 100 or ESL 100 and READ 100; Eligibility for MATH 154.

Repeatability: May be taken a total of 1 time.

Encompasses sustainable landscaping theories and practices including installing and maintaining ecologically sound landscapes through renovating existing gardens with appropriate hardscapes, plant selection, water conservation and irrigation.

*Transfer Credit:* Transfers to CSU.

**HORT 58 Irrigation Systems Design and Management**

3 units; 3 hours Lecture, 1 hour Laboratory

Recommended Preparation: Eligibility for ENGL 100 or ESL 100 and READ 100; Eligibility for MATH 154.

Repeatability: May be taken a total of 1 time.

Introduces the fundamentals of agricultural, residential, and commercial landscape irrigation systems design, installation, and maintenance with an emphasis on the efficient use of irrigation water in the semi-arid Central Coast climate.

*Transfer Credit:* Transfers to CSU.

**HORT 62 Fall Plant Materials and Design**

3 units; 2 hours Lecture, 3 hours Laboratory

Recommended Preparation: Eligibility for ENGL 100 or ESL 100 and READ 100; Eligibility for MATH 154.

Repeatability: May be taken a total of 1 time.

Covers the identification of the common plants used in local landscapes including native and introduced trees, shrubs, groundcovers, and vines. Also covers the uses of plants in the landscape, California natives firescaping, history of gardens, selecting groundcovers, plant selection software, and planting design.

*Transfer Credit:* Transfers to CSU. C-ID: AG-EH 108L

**HORT 63 Spring Plant Materials and Design**

3 units; 2 hours Lecture, 3 hours Laboratory

Recommended Preparation: Eligibility for ENGL 100 or ESL 100 and READ 100; Eligibility for MATH 154.

Repeatability: May be taken a total of 1 time.

Covers the identification of the plants used in California landscapes including ornamental grasses, perennials, trees, and shrubs. Also covers selecting proper plants for landscape needs including flowering trees, and plants for hedges, screens and espaliers.

*Transfer Credit:* Transfers to CSU.

**HORT 65 Landscape CADD and Surveying**

2 units; 1 hour Lecture, 3 hours Laboratory

Recommended Preparation: Eligibility for ENGL 100 or ESL 100 and READ 100; Eligibility for MATH 154.

Repeatability: May be taken a total of 1 time.

Introduces Landscape Computer-Aided Design-and-Drafting software as well as measures and surveying fundamentals. Prepares for entry-level skills in the field of landscape design.

*Transfer Credit:* Transfers to CSU.

**HORT 66 Landscape Design**

3 units; 2 hours Lecture, 3 hours Laboratory

Recommended Preparation: Eligibility for ENGL 100 or ESL 100 and READ 100; Eligibility for MATH 154.

Repeatability: May be taken a total of 1 time.

Presents principles of landscape design theory; analysis and functional diagrams, form and spatial composition; creative problem solving; and in-depth study of hardscape materials. Meet and work with an actual client while designing a typical residential landscape.

*Transfer Credit:* Transfers to CSU.

**HORT 70 Organic Agriculture**

4 units; 3 hours Lecture, 3 hours Laboratory

Recommended Preparation: Eligibility for ENGL 100 or ESL 100 and READ 100; Eligibility for MATH 154.

Repeatability: May be taken a total of 1 time.

Introduces organic agriculture with an emphasis on organic food production and a practical understanding of the philosophy, principles, and practices of organic crops.

*Transfer Credit:* Transfers to CSU.

**HORT 71 Organic Food Production 1**

4 units; 3 hours Lecture, 3 hours Laboratory

Prerequisite: HORT 70 or equivalent experience.

Recommended Preparation: Eligibility for ENGL 100 or ESL 100 and READ 100; Eligibility for MATH 154.

Repeatability: May be taken a total of 1 time.

Continues the theory and practices of good management begun in HORT 70 emphasizing springtime, commercial scale, local area, organic vegetable, fruit, and flower crops. Emphasizes the scientific, economic, and social basis for good management practices. Designed primarily for students planning a management career in organic horticulture. Includes instruction for obtaining the IOIA Certificate: USDA NOP Organic Crop Standards Training.

*Transfer Credit:* Transfers to CSU; UC.

**HORT 72      Organic Food Production 2**

1 unit; 0.5 hour Lecture, 1.5 hours Laboratory

Prerequisite: HORT 71 or equivalent experience.

Recommended Preparation: Eligibility for ENGL 100 or ESL 100 and READ 100; Eligibility for MATH 154.

Repeatability: May be taken a total of 1 time.

Continues the theory and practices of good management agriculture begun in HORT 71 emphasizing summertime, commercial scale, local area, organic vegetable, fruit, and flower crops. Emphasizes the scientific, economic, and social basis for good management practices. Explores organic farming and farm business, and is designed primarily for students planning a management career in organic horticulture.

*Transfer Credit:* Transfers to CSU.

**HORT 100A    Plant Propagation**

1 – 3 units; 3 – 9 hours Laboratory

Recommended Preparation: Eligibility for ENGL 100 or ESL 100 and READ 100; Eligibility for MATH 154.

Repeatability: May be taken a total of 1 time.

Presents techniques in plant propagation including seed collection, handling, and sowing as well as producing plants from cuttings, layering, leaf pieces, division, and grafting. Includes equipment and facilities commonly used in nursery and greenhouse production, appropriate chemicals and hormones, growing mediums and fertilizers appropriate for propagation, sanitation procedures, propagation scheduling, lining out and potting up.

*Transfer Credit:* Non-transferable.

**HORT 125    Hydroponic and Substrate Production**

3 units; 2 hours Lecture, 3 hours Laboratory

Recommended Preparation: Eligibility for ENGL 100 or ESL 100 and READ 100; Eligibility for MATH 154.

Repeatability: May be taken a total of 1 time.

Introduces concepts and practices of growing crops hydroponically and with substrates including set up, nutrient solution preparation, lighting needs, and pest control.

*Transfer Credit:* Non-transferable.

**HORT 150    Pest Management**

4 units; 3 hours Lecture, 3 hours Laboratory

Recommended Preparation: Eligibility for ENGL 100 or ESL 100 and READ 100; Eligibility for MATH 154.

Repeatability: May be taken a total of 1 time.

Introduces the concepts and practices of integrated pest management emphasizing identification of insects, vertebrates, diseases and weeds in managed landscapes, crops, nurseries and greenhouses on the Central Coast. Covers pesticide use and safety and the techniques of integrated pest management including: biological control, resistant varieties, cultural controls and mixed cropping.

*Transfer Credit:* Non-transferable.

**HORT 160B    Edible Landscaping**

3 units; 3 hours Lecture

Recommended Preparation: Eligibility for ENGL 100 or ESL 100 and READ 100; Eligibility for MATH 154.

Repeatability: May be taken a total of 1 time.

Provides an introduction to designing, growing, and harvesting edible plants in the landscape with a focus on fruits and vegetables as well as food issues highlighting the value of whole food diets using documentary films.

*Transfer Credit:* Non-transferable.

**HORT 162A-Z   Current Topics in Horticulture**

0.5 – 4 units; 0.5 – 4 hours Lecture or 1.5 – 12 hours Laboratory

Recommended Preparation: Eligibility for ENGL 100 or ESL 100 and READ 100; Eligibility for MATH 154.

Repeatability: May be taken a total of 1 time.

Presents selected topics in horticulture not covered by regular catalog offerings. Each special topic course will be announced, described, and given its own title and letter designation in the Schedule of Classes. The structure and format of each class will vary depending on the subject matter and may consist of lecture, lab, or both.

*Transfer Credit:* Non-transferable.

**HORT 164      California Native Plants & Plant Communities**

2 units; 1 hour Lecture, 3 hours Laboratory

Recommended Preparation: Eligibility for ENGL 100 or ESL 100 and READ 100; Eligibility for MATH 154.

Repeatability: May be taken a total of 1 time.

Covers the identification of native plants and their best uses in the developed landscape, and includes discussion of the diverse native plant communities of California.

*Transfer Credit:* Non-transferable.

**HORT 172      Arboriculture**

3 units; 2 hours Lecture, 3 hours Laboratory

Recommended Preparation: Eligibility for ENGL 100 or ESL 100 and READ 100; Eligibility for MATH 154.

Repeatability: May be taken a total of 1 time.

Introduces the care and management of trees in the landscape providing preparation for the International Society of Arboriculture (ISA) certification exam and covers the selection, training, protecting, fertilizing, and the basics of pruning. Soil, water and nutrient management, and plant biology will be discussed as well as the operation of a tree maintenance business. Trees common to the ISA exam will be covered.

*Transfer Credit:* Non-transferable.

**HORT 173 Landscape Pruning**

1 unit; 0.75 hours Lecture, 1.5 hours Laboratory

Recommended Preparation: Eligibility for ENGL 100 or ESL 100 and READ 100; Eligibility for MATH 154.

Repeatability: May be taken a total of 1 time.

Provides hands-on experience using pruning equipment and presents general and specific pruning techniques of common plants in the landscape including ornamental trees, shrubs and vines, roses, and fruit trees. Discusses the advantages and disadvantages of winter versus summer pruning and the selection of plants for special pruning techniques such as topiary, hedging, winter interest and blooming.

*Transfer Credit:* Non-transferable.

**HORT 175 Sustainable Landscaping**

4 units; 3 hours Lecture, 3 hours Laboratory

Recommended Preparation: Eligibility for ENGL 100 or ESL 100 and READ 100; Eligibility for MATH 154.

Repeatability: May be taken a total of 1 time.

Encompasses sustainable landscaping theories and practices including designing, installing and maintaining ecologically sound landscapes through renovating existing gardens with living walls, green roofs, permeable hardscapes and rain water catchment systems, appropriate plant selection, and water conservation and irrigation.

*Transfer Credit:* Non-transferable.

**HORT 176 Permaculture Design**

3 units; 2 hours Lecture, 3 hours Laboratory

Repeatability: May be taken a total of 1 time.

Recommended Preparation: Eligibility for ENGL 100 or ESL 100 and READ 100; Eligibility for MATH 154.

Introduces principles and practices of permaculture design through collaboration on real-world projects with a focus towards repairing, restoring, and regenerating human ecosystems.

*Transfer Credit:* Non-transferable.