

## HONORS

### Business, English, and Language Arts Division

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### Certificate of Achievement in Honors Scholar

Requirements: Participation in the Honors Transfer Program and completion of at least 15 units of honors courses, including ENGL 1A/1AH/1AMC/1AMCH/ESL 1A and/or LIBR 10/10H with a 3.4 or higher transferable GPA (total overall units for the Certificate is 16).

Nine (9) of the 16 units required must be completed from List A, "H" courses.

A maximum of six (6) units may be completed from List B courses with a Designated Honors Course Contract.

See the Honors Transfer Program webpage "Courses Available for Honors Credit" for the List A and List B courses.

Students achieving this Certificate of Achievement will have "Honors Scholar" posted on their transcript.

Petition for this Certificate of Achievement and Honors Scholar status will be processed by the Honors Transfer Program office. Information at [Go.Cabrillo.edu/honors](http://Go.Cabrillo.edu/honors).

#### Total Units

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16

## HONORS COURSES

Students must be enrolled in the Honors Transfer Program to register for the following honors courses:

ANTHR 1H, ANTHR 2H, AH 11H, AH 13H, COMM 1H, ENGL 1AH, ENGL 1AMCH, ENGL 1BH, ENGL 2H, ENGL 2MCH, HIST 4AH, HIST 4BH, HIST 14H, HIST 17AH, HIST 17BH, HIST 21AH, HIST 21BH, HONRS 1H\*, HONRS 2H\*, LIBR 10H, MATH 12H, PHILO 10H, PS 1H, PSYCH 1H, SOC 1H, SOC 2H

\*Note: HONRS 1H and 2H do not transfer to the UC system.

### HONRS 1H Honors Colloquium I

0.5 unit; 0.5 hour Lecture

Prerequisite: Honors Standing.

Repeatability: May be taken a total of 1 time.

Provides an interdisciplinary colloquium that introduces students to the seminar format, facilitates student transition into the Honors Program and guides students through the application process for the regional honors symposium.

*Transfer Credit:* Transfers to CSU.

### HONRS 2H Honors Colloquium II

0.5 unit; 0.5 hour Lecture

Prerequisite: HONRS 1H; Honors Standing.

Repeatability: May be taken a total of 1 time.

Provides an interdisciplinary colloquium focused on refining presentation skills for the Honors Symposium.

*Transfer Credit:* Transfers to CSU.

## HORTICULTURE

### Natural and Applied Sciences Division

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



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

### Agriculture Plant Science 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 |
| CHEM 1B  | General Chemistry II .....                | 5 |
| 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 (37-41 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.....          | 3     |
| HORT 58   | Irrigation Systems Design and Management ..... | 4     |
| 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     |

#### Approved Electives:

**Units**

|                               |       |
|-------------------------------|-------|
| Any Horticulture Course ..... | 0 - 2 |
|-------------------------------|-------|

**Total Units**

**60**

## General Horticulture and Crop Production Certificate of Achievement

*This program is currently NOT offered pending Chancellor's Office re-review. Students may pursue the AS degree above for the same Core Courses.*

### 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 (37-41 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.....          | 3 |
| HORT 58   | Irrigation Systems Design and Management ..... | 4 |
| 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/ESL 1A.....        |  | 3            |
| or  |  |              |
| CABT 157                                  | Business and Technical Writing .....     | 3            |
| <b>Total Units</b>                        |  | <b>40-47</b> |

## 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.....              | 3         |
| HORT 58            | Irrigation Systems Design and Management .....     | 4         |
| 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>Total Units</b> |  | <b>60</b> |

## 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.....              | 3              |
| HORT 58                                     | Irrigation Systems Design and Management .....     | 4              |
| 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/ESL 1A.....          |  | 3              |
| or  |  |                |
| CABT 157                                    | Business and Technical Writing .....               | 3              |
| <b>Total Units</b>                          |  | <b>42 - 45</b> |

## Sustainable Agriculture Technology A.S. Degree

The Sustainable Agriculture Technology degree is designed to prepare students for a career in the emerging agriculture technology industry. The course of study will cover all aspects of technology and horticultural study including hydroponics, aquaponics, organic substrate production, GIS/GPS, water and energy conservation, and computing and connecting technology tools and data streams on farm. Students will finish this degree program prepared for careers as precision agriculture technicians, greenhouse managers, hydroponic growers, farmers, ranch or operations managers, first line supervisors for agriculture and horticulture industries, biological technicians, among others. This program is designed for those wishing to go directly into employment in the agriculture and horticulture industries; therefore, students wishing to transfer courses should consult a counselor or consider the AS-T degree in Agriculture Plant Science.

### Learning Outcomes

1. Strong understanding of the plant science fundamentals of soil, plant, and water relationships to produce plants in a variety of high tech production systems.
2. Understanding of how to use technology tools to increase sustainability and production.
3. Ability to use, manage, and manipulate data and data streams from technology tools to inform management decisions.)

### General Education (21 units)

Units

#### Core Courses (26 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 58  | Irrigation Systems and Design Management ..... | 3 |
| HORT 71  | Organic Food Production .....                  | 4 |
| HORT 72  | Organic Food Production .....                  | 1 |
| HORT 125 | Hydroponic and Substrate Production.....       | 3 |

and

#### PATH 1 Breadth of Ag Tech (13 units)

|         |  |   |
|---------|--|---|
| ENGR 3  | How Things Work.....   | 3 |
| GEOG17  | Introduction to Geographic Information Systems and Techniques..... | 3 |
| CIS 71  | Information and Communication Technology Essentials.....           | 4 |
| CABT 41 | Excel .....  | 3 |

or

#### Path 2 Computing within Ag Tech (13 units)

|        |   |   |
|--------|---|---|
| CS 1L  | Technology Tools .....                  | 2 |
| CIS 15 | Cloud Programming with Python.....      | 4 |
| CIS 75 | Fundamentals of Computer Security ..... | 3 |
| CIS 81 | Computer Network Fundamentals.....      | 4 |

**Total Units**

**60**

## Sustainable Agriculture Technology Certificate of Achievement

### Core Courses (32-33 units)

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 58  | Irrigation Systems Design and Management .....         | 4 |
| HORT 71  | Organic Food Production .....                          | 4 |
| HORT 125 | Hydroponic and Substrate Production.....               | 3 |
| CABT 41  | Excel .....  | 3 |
| or       |  |   |
| CABT 43  | Beginning/Intermediate Spreadsheets .....              | 2 |
| and      |  |   |
| CABT 44  | Advanced Spreadsheets .....                            | 2 |
| CIS 71   | Information & Communication Technology Essentials..... | 4 |

### AND Any Two (2) Classes of the following (5-8 units)

|         |   |   |
|---------|---|---|
| ENGR 3  | How Things Work.....  | 3 |
| GEOG 17 | Introduction to Geographic Information Systems and Techniques ..... | 5 |
| CS 1L   | Technology Tools .....  | 2 |
| CIS 15  | Cloud Programming with Python.....                                  | 4 |
| CIS 75  | Fundamentals of Computer Security .....                             | 3 |
| CIS 81  | Computer Network Fundamentals.....                                  | 4 |

### Other Required Courses (3-6 Units)

|          |                                     |     |
|----------|-------------------------------------|-----|
| ENGL 100 | Elements of Writing.....            | 3   |
| or       |                                     |     |
| ESL 100  | High Advanced Academic ESL .....    | 4-6 |
| or       |                                     |     |
| ENGL     | 1A/1AH/1AMC/1AMCH/ESL 1A.....       | 3   |
| or       |                                     |     |
| CABT 157 | Business and Technical Writing..... | 3   |

**Total Units**

**40-47**

## Arboriculture Skills Certificate

### Learning Outcomes

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

### Required Course

Units

|           |   |   |
|-----------|---|---|
| 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)

| Required Courses   |   | Units     |
|--------------------|---|-----------|
| 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         |
| <b>Total Units</b> |   | <b>17</b> |

## 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)

| Required Courses   |   | Units          |
|--------------------|---|----------------|
| 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)

| Required Courses   |   | Units     |
|--------------------|---|-----------|
| 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)

| Required Courses   |  | Units     |
|--------------------|--|-----------|
| HORT 2             | Soil Science and Management.....               | 4         |
| HORT 58            | Irrigation Systems Design and Management ..... | 4         |
| 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>17</b> |

## Permaculture Skills Certificate

### Learning Outcomes

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

| Required Courses   |  | Units     |
|--------------------|--|-----------|
| HORT 2             | Soil Science and Management.....               | 4         |
| HORT 58            | Irrigation Systems Design and Management ..... | 4         |
| HORT 160B          | Edible Landscaping.....                        | 3         |
| HORT 176           | Permaculture Design.....                       | 3         |
| <b>Total Units</b> |  | <b>14</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)

| Required Courses   |  | Units     |
|--------------------|--|-----------|
| 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 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 MATH 154.

Repeatability: May be taken a total of 1 time.

Surveys the production and use of sustainable technology for greenhouse and nursery plants to gain a working knowledge of how light, temperature, water, fertilizers, and soilless media interact in a production environment. Also covers water sensors, light monitors and artificial lights, graphical tracking technology, pest management, and propagation of selected plants.

*Transfer Credit:* Transfers to CSU.

### HORT 2 Soil Science and Management

4 units; 3 hours Lecture, 3 hours Laboratory

Recommended Preparation: 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 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

3 units; 3 hours Lecture

Recommended Preparation: 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 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

4 units; 3 hours Lecture, 3 hours Laboratory

Recommended Preparation: 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, and installation, monitoring using sensors and recalculations systems 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 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, and plant selection software.

*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 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 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 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 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 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 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 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, grafting, and tissue culture. 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 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 options, water conservation, vertical indoor greens, and pest control.

*Transfer Credit:* Non-transferable.

**HORT 150 Pest Management**

4 units; 3 hours Lecture, 3 hours Laboratory

Recommended Preparation: 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 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 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 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 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 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 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

Recommended Preparation: Eligibility for MATH 154.

Repeatability: May be taken a total of 1 time.

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.