

Program SLOs Horticulture

A.S. Degree – Landscape technology, Nursery Management, Sustainable Landscape and Irrigation Systems Design, General Agriculture

Certificates of Achievement –Nursery Operations, Sustainable Landscape and Irrigation Systems Designs, Sustainable Irrigation and Water Management Technology, Green Buildings: Environmental Design, Energy Management and Performance Based Construction, Landscape Technology, Plant-Based Nutrition and Sustainable Agriculture

Horticulture Program Student Learning Outcomes From the PrOF 2015 (Program Review) Update

1	Program Student Learning Outcome (P-SLO)	Job Market Preparation	<ul style="list-style-type: none"> Compete in the job market in plant science and the sustainable landscape design, sustainable landscape construction, sustainable landscape and grounds maintenance, integrated pest management, turf management, and nursery fields of horticulture.
2	Program Student Learning Outcome (P-SLO)	Licensing and Certification Preparation	<ul style="list-style-type: none"> Prepare students to be successful on California State and/or professional plant science / horticulture association licensing and/or certification exams.
3	Program Student Learning Outcome (P-SLO)	Technical Expertise	<ul style="list-style-type: none"> Provide the necessary technical plant science / horticultural knowledge and skills to successfully operate a small horticulture business.
4	Program Student Learning Outcome (P-SLO)	Transfer	<ul style="list-style-type: none"> Prepare students for transfer to plant science / horticulture programs at institutions of higher learning.
5	Program Student Learning Outcome (P-SLO)	Skill Development	<ul style="list-style-type: none"> Basic and advanced plant science / horticultural skills development and improvement

A.S Degree Horticulture – Landscape Technology Student Learning Outcomes*

SLO 1 Demonstrate a fundamental understanding of basic horticultural principles and practices.

SLO 2 Demonstrate a fundamental understanding of soils, soil development, soil building and preparation, and sustainable soil management.

SLO 3 Demonstrate a fundamental understanding of plant identification, selection, use, and maintenance of plant material best suited for conventional and sustainable landscapes.

SLO 4 Demonstrate a fundamental understanding of basic landscape design principles and practices.

SLO 5 Demonstrate a fundamental understanding of sustainable landscape construction and maintenance principles and practices.

SLO 6 Demonstrate proficiency at implementing the principles and practices of conventional and sustainable landscape

construction to install landscapes and landscape systems.
SLO 7 Demonstrate proficiency at implementing the principles and practices of sustainable landscape maintenance, turf management, and integrated pest management to care for and maintain landscapes and green spaces.
SLO 8 Demonstrate a fundamental understanding of hydraulics and irrigation design, installation, and water management principles and practices.
SLO 9 Demonstrate proficiency at implementing the principles and practices of irrigation design and installation to design, install, and manage water efficient irrigation systems.
SLO 10 Recommend ideal irrigation schedules that meet or exceed local water efficient landscape ordinances.
SLO 11 Validate the water efficiency of an installed landscape.
SLO12 Propose on-going integrated pest management practices and solutions for landscapes and green spaces.
SLO 13 Demonstrate proficiency at safely operating landscape construction and maintenance power equipment to complete various landscape operations.
SLO 14 Diagnose and repair mechanical problems and perform required regular maintenance on small engine power equipment.
SLO 15 Demonstrate a fundamental understanding of the licensing, certification, and specialized business and marketing practices unique to landscape construction and maintenance businesses.
SLO 16 Demonstrate success on the California Department of Pesticides Regulation's Qualified Applicator's License and/or Qualified Applicator's Certification exams. (Individuals must meet CDPR requirements)
SLO 17 Demonstrate success on the California State License Board's C-27 Landscape Contractor Trade exam. (Individuals must meet CSLB requirements)

A.S Degree Nursery Management Student Learning Outcomes*
SLO 1 Demonstrate a fundamental understanding of basic horticultural principles and practices.
SLO 2 Demonstrate a fundamental understanding of soils, soil development, soil building and preparation, and sustainable soil management.
SLO 3 Demonstrate a fundamental understanding of container media, media development, blending, and preparation.
SLO 4 Demonstrate a fundamental understanding of plant identification, selection, use, and maintenance of plant material best suited for conventional and sustainable landscapes.
SLO 5 Demonstrate a fundamental understanding of plant propagation through various methods and processes.
SLO 6 Validate methods of propagation and select appropriate propagation methods for plant species based on plant type, production schedule, and available facilities and resources.
SLO 7 Assess various production methods and develop nursery crop production and management strategies for various nursery operations.
SLO 8 Demonstrate a fundamental understanding of basic landscape design principles and practices.
SLO 9 Create demonstration garden and landscape design concepts.
SLO 10 Demonstrate a fundamental understanding of wholesale and retail nursery practices and operations.
SLO 11 Demonstrate a fundamental understanding of greenhouse practices and operations.
SLO 12 Demonstrate a fundamental understanding of hydraulics and irrigation design, installation, and water management principles and practices.
SLO 13 Demonstrate proficiency at implementing the principles and practices of irrigation design and installation to design, install, and manage water efficient irrigation systems.
SLO 14 Demonstrate a fundamental understanding of the Integrated Pest Management principles and practices best suited for container crops and nursery environments.
SLO 15 Propose on-going integrated pest management practices and solutions for nursery environments.
SLO 16 Demonstrate a fundamental understanding of the licensing, certification, and specialized business and marketing practices unique to wholesale and retail nurseries, as well as other producers of nursery crops and products.

SLO 17 Create container media blends for short and long-term production of various nursery crops.

SLO 18 Devise creative marketing and promotion techniques retailing nursery products.

SLO 19 Demonstrate success on the California Department of Pesticides Regulation's Qualified Applicator's License and/or Qualified Applicator's Certification exams. (Individuals must meet CDPR requirements)

A.S Degree Sustainable Landscape and Irrigation Systems Design Student Learning Outcomes*

SLO 1 Demonstrate a fundamental understanding of basic horticultural principles and practices.

SLO 2 Demonstrate a fundamental understanding of soils, soil development, soil building and preparation, and sustainable soil management.

SLO 3 Demonstrate a fundamental understanding of plant identification, selection, and use of plant material best suited for sustainable landscapes.

SLO 4 Demonstrate a fundamental understanding of basic landscape design principles and practices.

SLO 5 Demonstrate a fundamental understanding of sustainable landscape construction and maintenance principles and practices.

SLO 6 Demonstrate a fundamental understanding of hydraulics and irrigation design, installation, and water management principles and practices.

SLO 7 Evaluate the sustainability potential of landscape projects sites.

SLO 8 Propose landscape design concepts based on sound, sustainable soil management, water conservation, construction and maintenance, and integrated pest management best practices.

SLO 9 Create sustainable landscape designs that meet or exceed local water efficient landscape ordinances.

SLO 10 Create water efficient irrigation system plans.

SLO 11 Recommend ideal irrigation schedules that meet or exceed local water efficient landscape ordinances.

SLO 12 Validate the water efficiency of an installed landscape.

SLO 13 Propose on-going integrated pest management practices and solutions for sustainable landscapes.

SLO 14 Demonstrate a fundamental understanding of the specialized business and marketing practices unique to landscape design businesses.

Certificate – Nursery Operations Student Learning Outcomes*

SLO 1 Demonstrate a fundamental understanding of basic horticultural principles and practices.

SLO 2 Demonstrate a fundamental understanding of soils, soil development, soil building and preparation, and sustainable soil management.

SLO 3 Demonstrate a fundamental understanding of container media, media development, blending, and preparation.

SLO 4 Create container media blends for short and long-term production of various nursery crops.

SLO 5 Demonstrate a fundamental understanding of plant identification, selection, use, and maintenance of plant material best suited for conventional and sustainable landscapes.

SLO 6 Demonstrate a fundamental understanding of plant propagation through various methods and processes.

SLO 7 Validate methods of propagation and select appropriate propagation methods for plant species based on plant type, production schedule, and available facilities and resources.

SLO 8 Assess various production methods and develop nursery crop production and management strategies for various nursery operations.

SLO 9 Demonstrate a fundamental understanding of wholesale and retail nursery practices and operations.

SLO 10 Demonstrate a fundamental understanding of greenhouse practices and operations.

SLO 11 Demonstrate a fundamental understanding of the Integrated Pest Management principles and practices best suited for container crops and nursery environments.

SLO 12 Propose on-going integrated pest management practices and solutions for nursery environments

**Certificate – Sustainable Irrigation and Water Management Technology
Student Learning Outcomes***

SLO 1 Demonstrate a fundamental understanding of soils, soil development and preparation, and sustainable soil management.
SLO 2 Demonstrate a fundamental understanding of hydraulics and water efficient irrigation design and installation principles and practices.
SLO 3 Create water efficient irrigation system designs based on industry approved principles and model water efficient landscape ordinance requirements.
SLO 4 Recommend best soil management practices to improve soil/water relationships and maximize water use and efficiency.
SLO 5 Recommend best landscape practices to capture applied water, reduce waste and runoff, and protect storm water systems.
SLO 6 Evaluate the efficiency of existing irrigation systems.
SLO 7 Diagnose irrigation system problems and repair/retrofit existing irrigation systems to maximize irrigation efficiency.
SLO 8 Validate irrigation system efficiency through the water audit process.
SLO 9 Create and implement irrigation system management plans that follow established water budgets and meet or exceed state and local water efficient landscape ordinance requirements.

**Certificate – Horticulture, Sustainable Landscape and Irrigation Systems Design
Student Learning Outcomes***

SLO 1 Demonstrate a fundamental understanding of basic horticultural principles and practices.
SLO 2 Demonstrate a fundamental understanding of soils, soil development, soil building and preparation, and sustainable soil management.
SLO 3 Demonstrate a fundamental understanding of plant identification, selection, and use of plant material best suited for sustainable landscapes.
SLO 4 Demonstrate a fundamental understanding of basic landscape design principles and practices.
SLO 5 Demonstrate a fundamental understanding of sustainable landscape construction and maintenance principles and practices.
SLO 6 Demonstrate a fundamental understanding of hydraulics and irrigation design, installation, and water management principles and practices.
SLO 7 Evaluate the sustainability potential of landscape projects sites.
SLO 8 Propose landscape design concepts based on sound, sustainable soil management, water conservation, construction and maintenance, and integrated pest management best practices.
SLO 9 Create sustainable landscape designs that meet or exceed local water efficient landscape ordinances.
SLO 10 Create water efficient irrigation system plans.
SLO 11 Recommend ideal irrigation schedules that meet or exceed local water efficient landscape ordinances.
SLO 12 Validate the water efficiency of an installed landscape.
SLO 13 Propose on-going integrated pest management practices and solutions for sustainable landscapes.

**Certificate – Green Buildings: Environmental Design, Energy Management and Performance
Based Construction Student Learning Outcomes***

SLO 1 Establish meaningful ethical, social and environmental objectives for buildings and communities based on the

values of energy and resource conscious design.

- Compare and contrast societal and economic implications of utilizing renewable and non-renewable energy sources.
- Compare and contrast the effect of contextual issues and evaluate their impact on energy consumption, environment and the beneficial experience of interior and exterior spaces.

SLO 2 Identify and articulate issues related to the choice of various building, landscape and environmental systems; ideate responsive solutions; and compare the alternatives in making effective, sustainable decisions.

- Analyze and calculate energy use to make informed, environmentally-sound and economic choices to satisfy human needs for comfort and aesthetics.
- Explain the concepts of resource conservation and waste reduction and make sustainable design choices related to materials and construction.
- Develop a comprehensive understanding of green rating systems, livable communities strategies and the ability to apply these concepts in decision-making.

SLO 3 Demonstrate independent learning, teamwork and continuing education habits that will help to encourage a lifelong pursuit of knowledge.

- To use a team work process to identify issues, analyze criteria, research and apply learned principles to synthesize solutions to specific design projects.
- To demonstrate habits of visual note making and independent research by developing a sketch and notebook to record learning.

Certificate – Landscape Technology Horticulture

Student Learning Outcomes*

SLO 1 Demonstrate a fundamental understanding of basic horticultural principles and practices.

SLO 2 Demonstrate a fundamental understanding of soils, soil development, soil building and preparation, and sustainable soil management.

SLO 3 Demonstrate a fundamental understanding of plant identification, selection, use, and maintenance of plant material best suited for conventional and sustainable landscapes.

SLO 4 Demonstrate a fundamental understanding of sustainable landscape construction and maintenance principles and practices.

SLO 5 Demonstrate proficiency at implementing the principles and practices of conventional and sustainable landscape construction to install landscapes and landscape systems.

SLO 6 Demonstrate proficiency at implementing the principles and practices of sustainable landscape maintenance, turf management, and integrated pest management to care for and maintain landscapes and green spaces.

SLO 7 Demonstrate a fundamental understanding of hydraulics and irrigation design, installation, and water management principles and practices.

SLO 8 Demonstrate proficiency at implementing the principles and practices of irrigation design and installation to design, install, and manage water efficient irrigation systems.

SLO 9 Recommend ideal irrigation schedules that meet or exceed local water efficient landscape ordinances.

SLO 10 Propose on-going integrated pest management practices and solutions for landscapes and green spaces.

SLO 11 Demonstrate proficiency at safely operating landscape construction and maintenance power equipment to complete various landscape operations.

SLO 12 Diagnose and repair mechanical problems and perform required regular maintenance on small engine power equipment.

Certificate – Plant-Based Nutrition and Sustainable Agriculture Student Learning Outcomes*

SLO 1 Demonstrate independent learning and effective communication skills.

- Demonstrate responsibility for personal action and choices.
- Communicate effectively both orally and in writing.

SLO 2 Explain the principles of nutrition and its effect on health.

- Relate the dietary causes of chronic diseases.
- Evaluate the role of plant-based foods on health and the environment.

SLO 3 Demonstrate a fundamental understanding of health behaviors on nutritional and health status.

- Schematize the effects of personal food choice on health, the environment and public policy.

SLO 4 Basic and advanced plant science/horticulture skills development and improvement.

- Demonstrate and apply the theories of sustainable and organic agriculture.
- Demonstrate a fundamental understanding of soils, soil development, soil building and preparation and sustainable soil management.
- Demonstrate a fundamental understanding of hydraulics and irrigation design, installation, and water management principles and practices.
- Create agriculture design concepts based on sound, sustainable soil management, water conservation, construction and maintenance, and integrated pest management best practices.

SLO 5 Effectively and accurately prepare and analyze raw ingredients and prepared foods.

- Evaluate food through sensory evaluation of texture, taste, color, presentation, smell and umami.
- Identify optimal cooking procedures/heat transfer to maximize nutrient content as well as the quality of the ingredients and dish as a whole.
- Analyze quality defects in cooked products and specify possible errors in techniques or ingredient selection.

SLO 6 Implement proper sanitary and safety techniques.

- Demonstrate appropriate food handling and sanitary techniques.
- Utilize kitchen tools/equipment appropriately.

*Developed through the College's Curriculum Processes