Landscape Design Technology Degree and Certificate

This program is a bi-disciplinary study of horticulture resources and design fundamentals. It includes an in-depth study of plant materials, irrigation, landscape design, and site planning. Topics such as landscape computer-aided design, surveying, and construction measurement techniques, are also covered.

Student Learning Outcomes

Upon completion of this program, the student will be able to:

• select plant materials that are used for landscapes.
• solve landscape design problems.
• analyze typical landscape design projects using the design process.
• communicate landscape design solutions effectively.

Career Opportunities

Landscape architects and landscape architect technicians are responsible for the overall design and detailed drawings of a wide range of projects in outdoor spaces including commercial and residential developments, parks and recreation areas, as well as master plans for the management of forested lands. Employment of landscape architects and landscape architect technicians is expected to increase as a result of the increasing emphasis on sustainability land development and design.

Requirements for Degree and Certificate 33 Units

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>HORT 110</td>
<td>Irrigation Design</td>
<td>2</td>
</tr>
<tr>
<td>HORT 300</td>
<td>Introduction to Horticulture</td>
<td>3</td>
</tr>
<tr>
<td>HORT 305</td>
<td>Plant Materials I (3)</td>
<td>3</td>
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<td>or HORT 306</td>
<td>Plant Materials II (3)</td>
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<tr>
<td>HORT 320</td>
<td>Sustainable Landscape Construction</td>
<td>3</td>
</tr>
<tr>
<td>HORT 322</td>
<td>Landscape Graphics</td>
<td>3</td>
</tr>
<tr>
<td>HORT 326</td>
<td>Landscape Design</td>
<td>3</td>
</tr>
<tr>
<td>HORT 329</td>
<td>Landscape CAD Design</td>
<td>3</td>
</tr>
<tr>
<td>DESGN 100</td>
<td>Introduction to Computer Aided Drafting and Design (CADD)</td>
<td>3</td>
</tr>
<tr>
<td>DESGN 102</td>
<td>Intermediate Computer Aided Drafting and Design (CADD)</td>
<td>3</td>
</tr>
<tr>
<td>DESGN 300</td>
<td>Introduction to Design Resources</td>
<td>3</td>
</tr>
<tr>
<td>DESGN 350</td>
<td>Surveying and Construction Measurement Techniques</td>
<td>4</td>
</tr>
</tbody>
</table>

Associate Degree Requirements: The Landscape Design Associate in Science (A.S.) Degree may be obtained by completion of the required program, plus general education requirements, plus sufficient electives to meet a 60-unit total. See ARC graduation requirements.

Landscape Industry Degree

The degree presents horticultural science and provides skills that relate to the landscape construction and maintenance industry. The program concentrates on plant identification, design, installation, irrigation, maintenance, soils sustainability, and disease and pest certification. Work experience is required.

Student Learning Outcomes

Upon completion of this program, the student will be able to:

• Identify and select plant materials that are used for landscapes in the northern California regions.
• Analyze a landscape site and create a complete landscape design for that site.
• Analyze a landscape design and apply the installation procedures necessary to implement the design.
• Assess a landscape and apply the maintenance operation techniques required.
• Assess a soil analysis and apply the appropriate steps for plants health and soil sustainability.
• Demonstrate horticulture skills in a work environment.
• Apply safe operating procedures and practices to all landscape operations.

Requirements for Degree 32-35 Units

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<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>HORT 100</td>
<td>Integrated Pest Management in the Landscape</td>
<td>3</td>
</tr>
<tr>
<td>HORT 105</td>
<td>Pest Control Licensing For Certification</td>
<td>2</td>
</tr>
<tr>
<td>HORT 110</td>
<td>Irrigation Design</td>
<td>2</td>
</tr>
<tr>
<td>HORT 298</td>
<td>Work Experience in Horticulture</td>
<td>1-4</td>
</tr>
<tr>
<td>HORT 300</td>
<td>Introduction to Horticulture</td>
<td>3</td>
</tr>
<tr>
<td>HORT 302</td>
<td>Soils and Plant Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>HORT 305</td>
<td>Plant Materials I</td>
<td>3</td>
</tr>
<tr>
<td>HORT 306</td>
<td>Plant Materials II</td>
<td>3</td>
</tr>
<tr>
<td>HORT 320</td>
<td>Sustainable Landscape Construction</td>
<td>3</td>
</tr>
<tr>
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<td>Landscape Graphics</td>
<td>3</td>
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Associate Degree Requirements: The Landscape Industry Associate in Science (A.S.) Degree may be obtained by completion of the required program, plus general education requirements, plus sufficient electives to meet a 60-unit total. See ARC graduation requirements.

Landscape Industry Certificate

This certificate presents horticultural science and provides skills that relate to the landscape construction and maintenance industry. The focus of this program concentrates on plant identification, design, installation, maintenance, soils sustainability, and disease and pest certification.

Student Learning Outcomes

Upon completion of this program, the student will be able to:

• Identify and select plant materials that are used for landscapes in northern California regions.
• Analyze a landscape site and create a complete landscape design for that site.
• Analyze a landscape design and apply the installation procedures necessary to implement the design.
• Assess a landscape and apply the maintenance operation techniques required.
• Asses a soil analysis and apply the appropriate procedures for plant health and soil sustainability.
• Apply safe operating procedures and practices to all landscape operations.

Requirements for Certificate  
HORT 100 Integrated Pest Management in the Landscape ..........3
HORT 105 Pest Control Licensing For Certification ..................2
HORT 110 Irrigation Design ..............................................2
HORT 300 Introduction to Horticulture ..............................3
HORT 302 Soils and Plant Nutrition ........................................3
HORT 305 Plant Materials I .............................................3
HORT 306 Plant Materials II .............................................3
HORT 320 Sustainable Landscape Construction ....................3
HORT 322 Landscape Graphics ...........................................3
HORT 324 Sustainable Landscape Maintenance ....................3
HORT 326 Landscape Design .............................................3

Nursery Industry Degree
This degree provides a broad overview of the science of horticulture as it relates to the nursery industry. The focus of the program covers plant production and sales, plant identification, soils and fertilizers, plant diseases and pests, design and pesticide certification. Work experience is required.

Student Learning Outcomes
Upon completion of this program, the student will be able to:
• list the propagation options for nursery plants.
• describe the merchandising practices used in retail nursery sales.
• apply the principles of soil science and pest identification to nursery plant production and sales.
• categorize plant material by specific use in the landscape.
• design a basic landscape plan.
• recommend solutions to various landscape practices and situations.

Requirements for Certificate  
HORT 100 Integrated Pest Management in the Landscape ..........3
HORT 105 Pest Control Licensing For Certification ..................2
HORT 300 Introduction to Horticulture ..............................3
HORT 302 Soils and Plant Nutrition ........................................3
HORT 305 Plant Materials I .............................................3
HORT 306 Plant Materials II .............................................3
HORT 310 Nursery Practices .............................................3
HORT 312 Plant Propagation .............................................3
HORT 322 Landscape Graphics ...........................................3
HORT 326 Landscape Design .............................................3

Floristry Certificate
The Floristry certificate provides well-balanced training in the fundamentals of floral design, the identification of flowers and foliage, the care of fresh cut product and the sources of floral materials. Courses cover special event floral design such as weddings, funerals and holidays, and prepares students to participate in the varied floral enterprises.

Student Learning Outcomes
Upon completion of this program, the student will be able to:
• Apply the distinctive marketing skills for both the retail and mass market floristry industries.
• Resource and purchase floral materials
• Demonstrate methods in the care and merchandising of floral materials
• Identify floral specimens used in commercial floristry by scientific name and availability
• Assess and utilize floral materials and design to create a visually appealing and salable arrangement
• Demonstrate methods in the care and merchandising of floral materials
• Recommend solutions to various landscape practices and situations.

Requirements for Certificate  
HORT 200 Introduction to Retail Floristry .............................2
HORT 201 Floral Design ..................................................2
HORT 202 Corsage and Wedding Floral Design .....................2
HORT 203 Multi Occasion, Sympathy Design and the Mass Market ....2

Career Opportunities
Completion of the certificate provides satisfactory qualification for employment in retail and mass market floristry industries. The program also is a means to upgrade skills of those already working in the industry.

Requirements for Certificate  
HORT 200 Introduction to Retail Floristry .............................2
HORT 201 Floral Design ..................................................2
HORT 202 Corsage and Wedding Floral Design .....................2
HORT 203 Multi Occasion, Sympathy Design and the Mass Market ....2

American River College Catalog 2010-2011
HORT 100 Integrated Pest Management in the Landscape 3 Units
Corequisite: HORT 300
Hours: 36 hours LEC; 54 hours LAB
This course is a study of local plant pests including weeds, diseases, invertebrates, and vertebrates. It includes recognition of symptoms and causes, life cycle of the pests, host and habitat relationships, and methods of control. Field trips may be required.

HORT 105 Pest Control Licensing For Certification 2 Units
Prerequisite: HORT 300 with a grade of “C” or better.
Hours: 36 hours LEC
This course covers the laws and regulations for operators, applicators, and advisors including the study of weeds, diseases and insects and accepted standards for control.

HORT 110 Irrigation Design 2 Units
Prerequisite: HORT 300 with a grade of “C” or better.
Hours: 36 hours LEC
This course is a study of water hydraulics, irrigation equipment inclusive of heads, pipes, pumps, clocks, and valves. Irrigation design, which includes preparing plans, dealing with measurement, head layout, pipe sizing and specifications, is covered.

HORT 140 Advanced Student Projects 2 Units
Prerequisite: HORT 300 with a grade of “C” or better.
Hours: 108 hours LAB
This course provides the student with an opportunity to pursue advanced projects which are selected by the department. This course may be taken twice for credit.

HORT 200 Introduction to Retail Floristry 2 Units
Hours: 18 hours LEC; 54 hours LAB
This course presents fundamentals of design techniques and skills practiced in the floral industry. Topics include design mechanics, guides to design, identification of flower and foliage shapes and their use, cut flower care, corsage practice, and containers and designers’ aids. Field trips may be required. This course may be taken two times using different seasonal product.

HORT 201 Floral Design 2 Units
Hours: 18 hours LEC; 54 hours LAB
This course builds on the theory, techniques and skills developed in HORT 200. Identification of wholesale sources, origin of product, and seasonal price fluctuations in the industry and market are discussed. The emphasis of the course is on design techniques. Field trips may be required. This course may be taken two times using different seasonal product.

HORT 202 Corsage and Wedding Floral Design 2 Units
Hours: 18 hours LEC; 54 hours LAB
This course presents the history and uses of wedding and body flower designs. The principles, methods, and practices used to create wedding bouquets and arrangements are explored and practiced. The techniques for wiring corsages, tools and materials for creating them, and other body flower designs are taught and experienced. Field trips may be required. This course may be taken two times using different seasonal product.

HORT 203 Multi Occasion, Sympathy Design and the Mass Market 2 Units
Hours: 18 hours LEC; 54 hours LAB
This course presents the theory of sympathy, tribute, party and multi-occasion floral design. Design applications for standing, flat sprays, set work, large multi-occasion arrangements and casket covers are included, as well as their delivery and set up. The mass market place in floral design is explored. Field trips may be required. This course may be taken two times using different seasonal product.

HORT 204 Sympathy Tributes 1 Unit
Hours: 18 hours LEC
This course emphasizes principles and elements of sympathy tributes in the funeral business. It also includes the practical application of sympathy design. It covers trends, care and handling, customs, etiquette, and display of sympathy tributes.

HORT 205 Oriental Floral Design .5 Unit
Hours: 9 hours LEC
This course provides an introduction and overview of oriental floral arranging. The art, principles, and skills of Asian floral design are explored. This course has a class material fee. This course can be taken four times for credit as different oriental schools are covered.

HORT 206 Floral Arranging for Bereavement .5 Unit
Hours: 9 hours LEC
This course provides an introduction and overview of floral arrangements used in burial rituals. It also covers significant trends in the use of sympathy flowers and how they have evolved over time. A material fee is required for this course. This course may be taken four times for credit emphasizing flowers available in each of the four seasons.

HORT 207 Floral Designs For Special Events .5 Unit
Hours: 9 hours LEC
This course provides an introduction and overview of floral arranging for special events. The art, principles, and skills of floral designs for weddings, corporate events, high school events and special occasion designs are explored. This course has a class materials fee. This course can be taken four times for credit as different types of events are covered.

HORT 208 Work Experience in Horticulture 1-4 Units
Advisory: ENGW 102 or 103, and ENGRD 116 with a grade of “C” or better; OR ESLR 320 and ESLW 320 with a grade of “C” or better; OR placement through assessment process.
General Education: AA/AS Area III(b)
Enrollment Limitation: Students must be in a paid or non-paid internship, volunteer position, or job related to Horticulture. Students must consult with the Horticulture Department faculty to review specific certificate and degree work experience requirements.
Hours: 60-300 hours LAB
This course provides students with opportunities to develop marketable skills in preparation for employment or advancement within the field of horticulture. It is designed for students interested in work experience and/or internships in associate degree level occupational programs. Course content includes understanding the application of education to the workforce; completion of required forms which document the student’s progress and hours spent at the work site; and developing workplace skills and competencies. Appropriate level learning objectives are established by the student and the employer. During the semester, the student is required to attend a weekly orientation and 75 hours of related paid work experience, or 60 hours of unpaid work experience for one unit. An additional 75 or 60 hours of related work experience is required for each additional unit. The weekly orientation is required for first time participants; returning participants are not required to attend the orientation weekly but are required to meet with the instructor as needed to complete all program forms and assignments. Work Experience may be taken for a total of 16 units when there are new or expanded learning objectives.
HORT 300  Introduction to Horticulture  3 Units  
General Education: AA/AS Area IV  
Course Transferable to CSU  
Hours: 54 hours LEC  
This course is a survey of principles and practices of horticulture designed to improve the knowledge of the home gardener as well as those seeking a career in horticulture. Topics include basic plant structure and function, general knowledge of plant usage, landscape planning and maintenance.

HORT 302  Soils and Plant Nutrition  3 Units  
Corequisite: HORT 300.  
Course Transferable to CSU  
Hours: 36 hours LEC; 54 hours LAB  
This course is a study of the nature and properties of soils and their relationship to plant needs. Topics include water and irrigation problems and control, composition, value and use of fertilizer materials, conditioners and agricultural minerals.

HORT 305  Plant Materials I  3 Units  
Corequisite: HORT 300.  
Course Transferable to UC/CSU  
Hours: 36 hours LEC; 54 hours LAB  
This course is a study of the identification, habits of growth, cultural requirements and uses of ornamental woody and herbaceous plants used in the California landscape. Emphasis is on those plants best observed in the fall and winter seasons.

HORT 306  Plant Materials II  3 Units  
Corequisite: HORT 300.  
Course Transferable to UC/CSU  
Hours: 36 hours LEC; 54 hours LAB  
This course is a study of the identification, habits of growth, cultural requirements and uses of ornamental woody and herbaceous plants used in the California landscape. Emphasis is on those plants best observed in the fall and winter seasons.

HORT 308  Viticulture-Vineyard Establishment  1 Unit  
Course Transferable to CSU  
Hours: 18 hours LEC  
This course is an introduction to grape crops for Sacramento and Placer counties. It covers the history and principles of the grape growing industry in California. Topics include site preparation, vine and rootstock selection, trellis and irrigation system selection, installation procedures, and vine training. Field trips may be required.

HORT 309  Viticulture - Sustainable Vineyard Management  1 Unit  
Course Transferable to CSU  
Hours: 18 hours LEC  
This course covers sustainable management of vineyards, large and small, to serve the needs of the owner while maintaining the environment. Topics include vine growth, fruit development, irrigation, nutrition, pruning systems and canopy management, grapes as a wildlife habitat, management of the vineyard floor, pest identification and control, harvest considerations, use of the fruit, and vineyard laws and ordinances. Field trips may be required.

HORT 310  Nursery Practices  3 Units  
Prerequisite: HORT 300 with a grade of “C” or better.  
Advisory: HORT 100, 302, 305, and 306.  
Course Transferable to CSU  
Hours: 36 hours LEC; 54 hours LAB  
This course is an overview of the practices involved in commercial nursery operations. Topics include selling techniques, displays and advertising, and customer assistance with basic garden practices.

HORT 312  Plant Propagation  3 Units  
Prerequisite: HORT 300 with a grade of “C” or better.  
Course Transferable to CSU  
Hours: 36 hours LEC; 54 hours LAB  
This course is a study of the fundamental principles involved in propagating plants including identification of facilities, equipment and techniques utilized in plant production. Topics include seed and vegetative propagation, media selection and structures.

HORT 314  Greenhouse Operations  3 Units  
Prerequisite: HORT 300 with a grade of “C” or better.  
Advisory: HORT 100, 302, 305, and 306.  
Course Transferable to CSU  
Hours: 36 hours LEC; 54 hours LAB  
This course is a study of the problems and practices in the management of greenhouses, including the production of specific greenhouse crops.

HORT 320  Sustainable Landscape Construction  3 Units  
Prerequisite: HORT 300 with a grade of “C” or better.  
Course Transferable to CSU  
Hours: 36 hours LEC; 54 hours LAB  
This course covers the theory and skills needed in the landscape construction industry. Landscape operations include carpentry, masonry, concrete pavers, water-conserving irrigation, watershed preservation and drainage, low-voltage lighting, sustainable soil preparation and drainage, plant materials/turf, plan reading, and estimating and bidding in the landscape trades. Field trips may be required.

HORT 321  Sustainable and Ecolandscape Practices  3 Units  
Course Transferable to CSU  
Hours: 54 hours LEC  
This course covers the application of ecologically sustainable design, construction, and maintenance practices for urban landscapes. Topics present a holistic approach to landscaping including, but not limited to, water conservation, green waste reduction, reduced chemical and inorganic fertilizer use, and the enhancement of natural ecosystems. Field trips may be required.

HORT 322  Landscape Graphics  3 Units  
Prerequisite: HORT 300 with a grade of “C” or better.  
Course Transferable to CSU  
Hours: 36 hours LEC; 54 hours LAB  
This course is the study of technical drafting skills and freehand graphics including line quality, lettering and organization as it relates to landscape design. It also includes an introduction to three dimensional sketching and the use of a variety of graphics skills and media.

HORT 324  Sustainable Landscape Maintenance  3 Units  
Prerequisite: HORT 300 with a grade of “C” or better.  
Course Transferable to CSU  
Hours: 36 hours LEC; 54 hours LAB  
This course covers the application of ecologically sustainable design, construction, and maintenance practices for urban landscapes. Topics present a holistic approach to landscaping including, but not limited to, water conservation, green waste reduction, reduced chemical and inorganic fertilizer use, and the enhancement of natural ecosystems. Field trips may be required.
HORT 326  Landscape Design  3 Units
Prerequisite: HORT 322 with a grade of "C" or better.
Course Transferable to CSU
Hours: 36 hours LEC; 54 hours LAB
This course is the study of the basic principles and elements of landscape design related to the problem solving process, design theory and composition, functional and design uses of landscape materials, and client and maintenance criteria.

HORT 327  Advanced Landscape Design  3 Units
Prerequisite: HORT 322 with a grade of "C" or better
Course Transferable to CSU
Hours: 36 hours LEC; 54 hours LAB
This course is the study of the advanced and in-depth principles of custom residential landscape design related to proposal writing, site analysis, design development and construction document preparation. Further exploration of design composition is studied as well as the development of spaces and the use of materials based upon a client's program desires.

HORT 328  Turf Grass Management  3 Units
Prerequisite: Horticulture 300 with a grade of "C" or better.
Course Transferable to CSU
Hours: 36 hours LEC; 54 hours LAB
This course is a study of the maintenance and management of turfgrass areas including golf greens, athletic fields, parks, as well as residential lawns.

HORT 329  Landscape CAD Design  3 Units
Prerequisite: HORT 322 with a grade of "C" or better
Advisory: DESGN 100
Course Transferable to CSU
Hours: 36 hours LEC; 54 hours LAB
This course is an introduction to computer assisted landscape design and drafting utilizing Computer Aided Drafting and Design (CADD) software to produce professional quality landscape designs for residential and commercial sites. Design emphasis includes site plan development and landscape planting and landscape irrigation plans, with the generation of materials lists based on the design created for the site.

HORT 330  Small Gas Engines, Outdoor Power Equipment  4 Units
Same As: AT 301
Course Transferable to CSU
Hours: 54 hours LEC; 54 hours LAB
This course covers the basic operational theory, servicing, adjusting, and maintenance of 2-cycle and 4-cycle small gas engines as they pertain to the automotive and horticulture industries. AT 301 and/or HORT 330 may be taken two times for credit for a maximum of 8 units, using different equipment.