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| Discipline: Agriculture | Sub-discipline: Environmental Horticulture |
| General Course Title: Landscape Construction and Installation | Min. Units: 3 Semester |
| Proposed Suffix: L | |
| <p>Course Description: The fundamentals of landscape construction, including soil preparation, paving and construction materials, hand and power tool use, turf and plant installation, plan reading, estimating, and bid preparation; also covers local codes, state requirements, and new technologies. Prepares students to pass the C-27 Landscaping Contractor's License exam. Laboratory required.</p> | |
| Required Prerequisites or Co-Requisites ¹ | |
| Advisories/Recommended Preparation ² | |
| <p>Course Objectives: <i>At the conclusion of this course, the student should be able to:</i></p> <ul style="list-style-type: none"> • Identify landscape professions and summarize licensing requirements • Demonstrate safety-consciousness in dress/apparel, tool use, job site demeanor, and personal safety equipment • Select appropriate hand tools for a variety of landscape projects • Use hand and power tools to construct wood projects • Use appropriate tools to construct masonry and concrete projects • List the steps of deck, patio or fence construction • List the steps of water feature installation • List the steps of landscape lighting installation • Recommend soil preparation methods for various soil conditions • Use leveling devices to establish finish grades and control drainage/runoff • Identify irrigation systems and components • Describe the steps required in the installation of a lawn by seed and sod method • Demonstrate proper shrub and tree planting methods, including staking systems • Using landscape plans, prepare bid documents which include material quantities and costs • Describe new technologies and sustainability used in landscape practices and operations • Describe the importance of professionalism in the landscape industry and list industry associations and certification programs • Interpret a landscape plan to identify hardscape and softscape components | |
| <p>Course Content:</p> <ol style="list-style-type: none"> 1. Scope of the landscape industry in California <ol style="list-style-type: none"> a. Related professions b. Employment opportunities c. Sustainability and New Technologies 2. Legal requirements to operate as a C-27 Landscape Contractor <ol style="list-style-type: none"> a. Scope of work of C-27 b. License requirements <ol style="list-style-type: none"> (1) Documented experience and education credit (2) C-27 exam <ul style="list-style-type: none"> Contractors license laws and regulations C-27 specialty trade requirements (3) Insurance bond | |
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¹ Prerequisite or co-requisite course need to be validated at the CCC level in accordance with Title 5 regulations; co-requisites for CCCs are the linked courses that must be taken at the same time as the primary or target course.

² Advisories or recommended preparation will not require validation but are recommendations to be considered by the student prior to enrolling.

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3. Safety
 - a. Importance of safe work habits
 - b. Clothing and shoes
 - c. Vehicles, machinery and power equipment
 - d. Job site behavior
 - e. Accident and injury procedures
 - f. Safety training and record-keeping

4. Scheduling and sequence of installation activities
 - a. Permits
 - b. Location of overhead and underground utilities
 - c. Site clearing and preparation
 - d. Rough grade
 - e. Irrigation and drainage
 - f. Hardscape installation
 - g. Soil amendments
 - h. Tree and shrub planting
 - i. Lawn installation
 - j. Finish grade and mulches
 - k. Landscape Construction and Installation

5. Grading/drainage
 - a. Dealing with excess water and runoff
 - b. Interpreting slopes/contours on landscape plans
 - c. Use of transit and other leveling tools, including laser equipment
 - d. Rough and finish/final grading
 - e. Drainage systems
 - (1) Collection of excess water
 - Swales and surface drainage
 - Area drains
 - French drains
 - Catch basins
 - (2) Conveying water
 - Rigid/flexible pipe
 - Solid/perforated pipe
 - Pumps

6. Irrigation
 - a. Identification of system components on plan
 - b. System check and adjustment

7. Wood and composite construction
 - a. Characteristics of wood materials
 - (1) Types of lumber, wood and composite products
 - (2) Structural strength
 - (3) Decay resistance for above and below ground use
 - (4) Dimensions, grades and finishes

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(Content Continued)**

- b. Tools and associated materials
 - (1) Safety in tool use
 - Handling and operation
 - Personal protective equipment
 - (2) Hand tool selection and use
 - (3) Power tool selection and operation
 - Drills
 - Saws
 - (4) Types of fasteners and hardware
 - Nails
 - Screws/Bolts
 - Connectors/anchors/hangers
- c. Application in the landscape
 - (1) Fences and gates
 - (2) Decks, railings and steps
 - (3) Arbors, pergolas and overhead structures
 - (4) Other landscape structures
 - (5) Construction procedures/steps

8. Concrete construction

- a. Materials and methods
 - (1) Concrete mixes
 - (2) Form construction
 - (3) Steel reinforcement
 - (4) Pouring
 - (5) Finishing
 - Types of finishes
 - Tools
- b. Application in the landscape
 - (1) Walks
 - (2) Patios
 - (3) Other paving applications
 - (4) Footings, piers

9. Masonry construction

- a. Materials and Methods
 - (1) Brick
 - (2) Concrete block
 - (3) Pavers and interlocking units
 - (4) Stone/flagstone/rock
- b. Application in the landscape
 - (1) Paving
 - (2) Edging
 - (3) Retaining walls

10. Water features

- a. Pond design and construction
- b. Fountains, waterfalls, rain swales and stream beds
- c. Pumps and filtration systems and solar powered systems

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- d. Plumbing requirements
- e. Construction procedures/steps

11. Landscape lighting

- a. Power source, transformers and wiring
 - b. Pathway lighting
 - c. Decorative and accent lighting
 - d. Lighting fixtures, switches and sensors
 - e. Installation procedures/steps
 - f. Solar lighting
12. Planting methods
- a. Soil preparation and amendments
 - b. Placing and facing plants
 - c. Planting holes and backfill materials
 - d. Planting and securing trees
 - e. Shrubs, vines and perennials
 - f. Ground covers
 - g. Annuals
 - h. Identify and describe appropriate irrigation system for planter areas and lawns
13. Lawn installation
- a. Seed
 - b. Sod
 - c. Hydroseeding, sprigs, stolons, plugs
14. Job costs, estimating and bidding
- a. Reading and interpreting landscape plans and construction details
 - b. Materials take-off
 - c. Supplier catalogs, publications and materials
 - d. Estimating methods
 - (1) Time and materials
 - (2) Per unit cost
 - e. Bid proposals and standard contracts.
15. Industry associations and certification
- a. California Landscape Contractors Association
 - b. Professional Landcare Network (PLANET)
 - c. Certified Landscape Technician program

Laboratory Activities: Individual Laboratory Activities are designed to support course objectives.

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| Methods of Evaluation: Lecture Comprehensive Quizzes and Exams Written Critical Thinking Scenarios Problem Analysis and Solution Research and Term Papers | Methods of Evaluation: Laboratory Laboratory Skill Validation by Observation Laboratory Projects and Reports Laboratory Research Projects and Reports Laboratory Skill Practicum Exams |
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Typical Textbooks, Manuals, or Other Support Materials
 Sauter, David. (2011) Landscape Construction. Del Mar, NY
 ISBN: 9781435497184
 Ingels, Jack E. (2010). Landscaping Principles and Practices.
 Del Mar, NY (ISBN-13: 9781428376410).

References:
 Sauter, David. (2003) Plan It, Dig It, Build It. Del Mar, NY
 ISBN: 1401810446
 ALCA now PLANET Landscape Training Manual for Installation Technicians (2003) www.landcarenetwork.org (Available in Spanish)

Biondo, Ronald J. and Schroeder, Charles B. (2003). Introduction to Landscaping: Design, Construction, and Maintenance. 3rd Edition Full Color, Prentice-Hall, NJ (ISBN: 10: 0-8134-32367).

Field, Harry (2004) Landscape Surveying. Del Mar, NY ISBN: 1401809618

Angley, Horsey and Roberts (2002) Landscape Estimating and Contract Administration. Del Mar, NY ISBN: 0766825736

California Landscape Contractors Association (2000).

Landscape Data Manual. CLCA, Sacramento, CA.

California Landscape Contractors Association (1989). CLS

California Landscape Standards, CLCA, Sacramento, CA

Statewide Articulation: CPSLO-EHS 126, CPP-directed elective, other universities as lower division elective

FDRG Lead Signature:

Date:

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Internal Tracking Number