

Las Positas College  
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## Course Outline for HORT 56

### ARBORICULTURE

Effective: Fall 2004

#### I. CATALOG DESCRIPTION:

HORT 56 — ARBORICULTURE — 2.00 units

Care, maintenance, planting, and pruning of trees, shrubs, and vines. Specific pruning techniques for ornamental trees, fruit trees, shrubs, roses, and other woody plants. Tree preservation, health, growth characteristics, plant selection, planting, irrigation, fertilization, damage repair, cabling, and bracing. Methods and techniques of tree climbing, tree felling, tree removal, work hazards, and safety precautions.

1.00 Units Lecture 1.00 Units Lab

#### Grading Methods:

Letter or P/NP

#### Discipline:

	<b>MIN</b>
<b>Lecture Hours:</b>	18.00
<b>Lab Hours:</b>	54.00
<b>Total Hours:</b>	72.00

#### II. NUMBER OF TIMES COURSE MAY BE TAKEN FOR CREDIT: 1

#### III. PREREQUISITE AND/OR ADVISORY SKILLS:

#### IV. MEASURABLE OBJECTIVES:

**Upon completion of this course, the student should be able to:**

- A. demonstrate proper, safe use and application of tools and equipment used in arboriculture;
- B. prune trees, shrubs, and vines in accordance with proper pruning standards and techniques adopted by the International Society of Arboriculture;
- C. demonstrate proper methods of tree planting, care, and ongoing maintenance;
- D. safely climb, fell, and remove large trees;
- E. evaluate and identify tree hazards and tree health problems;
- F. prune and care for plants to ensure good flower and fruit production.

#### V. CONTENT:

- A. Plant structure and function
  1. Structure and function of the cells, roots, stems and leaves
  2. Shoot stem and trunk development
  3. Conductive tissues
  4. Wound healing and callus tissue development
  5. Wood decay in trees and compartmentalization
  6. Trunk development and reaction wood
- B. Tree and shrub pruning
  1. Pruning techniques for fruit and ornamental trees
  2. Proper pruning of deciduous, evergreen, and coniferous plants
  3. Pruning in relation to plant structure and growth response
  4. Common branching systems of various plants
  5. Making proper pruning cuts
  6. Purposes of pruning
  7. Pruning shrubs
  8. Cost estimating for contract pruning
- C. Tree and shrub planting, tree staking and training
  1. Planting and staking techniques
  2. Training and care of young plants
- D. Plant maintenance and care
  1. Site conditions and preparation for planting
  2. Soil management
  3. Tree shrub fertilization and irrigation
  4. Preventative maintenance and repair
  5. Cabling and bracing
- E. Legal aspects of arboriculture

1. Contract documents and specifications
2. Cost estimating and bidding
- F. Tree evaluation methods
  1. Establishing values of trees for damage and insurance purposes
  2. Methods and standards for determining tree values
  3. Procedural approach to determining tree health and overall condition
- G. Hazardous trees
  1. Procedure for determining tree hazards
  2. Hazardous tree evaluation recommendations and reports
- H. Ropes, knots, splices, and fastening system techniques
  1. Kinds of rope, application, and use
  2. Rope knots and their use
  3. Splices
  4. Fastening techniques for lowering limbs, equipment
  5. Climbing knots for safety
- I. Tree climbing
  1. Free climbing without spurs
  2. Climbing techniques with spurs, saddle, flip-line, and rope
  3. Ascend and descend techniques and safety
- J. Tree removal
  1. Tree removal situation problems, methods of removal
  2. Cost estimating for contract removal
  3. Tree felling techniques and felling safety
  4. Climbing, bucking logs, and stump removal
  5. Rigging systems
- K. Tools and equipment
  1. Kinds of tools and equipment used in arboriculture
  2. Operation and safe use of hand tools, pruners, saws, etc.
  3. Operation, safety, and maintenance of chain saws and power tools
  4. Use, care, and maintenance of climbing ropes, saddles, and spurs
  5. Operation and safe use of manlifts and brush chippers

#### VI. METHODS OF INSTRUCTION:

- A. **Lecture** -
- B. **Discussion** -
- C. **Demonstration** - in classroom and field
- D. Field labs with hands-on student participation
- E. Examples of plant parts
- F. Instructor's handouts
- G. Media presentation

#### VII. TYPICAL ASSIGNMENTS:

- A. Weekly reading assignments in textbook
- B. Three evaluation reports for health, hazard and dollar value of at least eight specific trees selected by instructor
- C. Hands-on pruning practice on various fruit and ornamental trees, shrubs and vines
- D. Pruning roses
- E. Field trips to specified locations

#### VIII. EVALUATION:

- A. **Methods**
- B. **Frequency**
  1. Two written examinations equally spaced during the semester
  2. Quizzes at instructor's discretion
  3. Two practical exams equally spaced during the semester

#### IX. TYPICAL TEXTS:

1. R. Harris *Arboriculture*. 3rd ed., Prentice Hall, 1999.

#### X. OTHER MATERIALS REQUIRED OF STUDENTS:

- A. Safety glasses (goggles); leather gloves; work boots, 10" lace-up with raised heel; hard hat; ear protection.