HORT 184 Course Outline as of Fall 2017

CATALOG INFORMATION

Dept and Nbr: HORT 184 Title: INTRO TO ARBORICULTURE
Full Title: Introduction to Arboriculture
Last Reviewed: 2/11/2019

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	3.00	Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	3.00	Lab Scheduled	0	8	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	3.00		Contact Total	52.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00 Total Student Learning Hours: 157.50

Title 5 Category:	AA Degree Applicable
Grading:	Grade or P/NP
Repeatability:	00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:	
Formerly:	

Catalog Description:
Principles of urban forestry, arboriculture careers, and tree care; including tree biology, tree identification, plant health care, soils, nutrition, planting, worker safety, climbing, pruning, tree risk assessment, tree care tools and equipment. This course provides the knowledge necessary to be successful in the tree care profession. This course also prepares students for the International Society of Arboriculture's (ISA) Arborist Certification examination. Field lectures on the SRJC campus and other locations may be required.

Prerequisites/Corequisites:

Recommended Preparation:
Eligibility for ENGL 100 or ESL 100; AND Course Completion of HORT 50.1

Limits on Enrollment:

Schedule of Classes Information:
Description: Principles of urban forestry, arboriculture careers, and tree care; including tree biology, tree identification, plant health care, soils, nutrition, planting, worker safety, climbing, pruning, tree risk assessment, tree care tools and equipment. This course provides the knowledge

necessary to be successful in the tree care profession. This course also prepares students for the International Society of Arboriculture's (ISA) Arborist Certification examination. Field lectures on the SRJC campus and other locations may be required. (Grade or P/NP)
Prerequisites/Corequisites:
Recommended: Eligibility for ENGL 100 or ESL 100; AND Course Completion of HORT 50.1
Limits on Enrollment:
Transfer Credit:
Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**	Effective:	Inactive:
CSU GE:	**Transfer Area**	Effective:	Inactive:
IGETC:	**Transfer Area**	Effective:	Inactive:

CSU Transfer:	Effective:	Inactive:
UC Transfer:	Effective:	Inactive:

CID:

Certificate/Major Applicable:
Both Certificate and Major Applicable

COURSE CONTENT

Outcomes and Objectives:
Upon successful completion of this course the student will be able to:
1. Define the practice of arboriculture.
2. Explain the structure and function of the buds, leaves, wood, and roots of trees.
3. Explain the concept of Compartmentalization Of Decay In Trees (CODIT).
4. Explain how plant characteristics such as growth habit, texture, and color can be used in tree identification.
5. Explain the principles of water uptake, transpiration, and the movement of water in the soil.
6. Explain the significance of urban soils as they apply to nutrition, irrigation, tree health, and tree establishment.
7. Describe the essential nutrients that trees require, how these nutrients are absorbed and the advantages and disadvantages of different methods of fertilizer application.
8. Summarize how a tree species' growth form and site characteristics inform the selection of the "right tree for the right place."
9. Outline what to look for in selecting healthy, vigorous planting stock.
10. Illustrate proper techniques and procedures to plant and transplant trees, and explain how using proper techniques can improve survival chances and accelerate establishment.
11. Determine when a tree might be helped by the installation of cables, guys, bracing rods, or props.
12. Identify and describe the procedures, techniques and termonology used in various types of pruning.
13. Describe the various physiological disorders and injuries that can affect trees, and explain what treatments are appropriate.
14. Explain the philosophy of Plant Health Care (PHC) and describe its relationship with

Integrated Pest Management (IPM).
15. Describe the methods and technology used to assess tree hazard potential.
16. Outline appropriate methods of managing trees during construction, including tree protection and preservation.
17. Discuss urban forestry and the environmental, economic, aesthetic, and social benefits and costs of trees.
18. Explain how to conduct a tree inventory and describe what information would typically be collected in a tree inventory.
19. Identify appropriate safety standards for tree care operations: describe tools, knots, and safety equipment used for climbing and working with trees.

Topics and Scope:

I. Introduction to Arboriculture
- A. Definition
- B. Benefits
- C. Careers in arboriculture

II. Tree Biology
- A. Tree anatomy
- B. Tree physiology - Compartmentalization of Decay in Trees (CODIT)

III. Tree Classification and Identification
- A. Classification systems
- B. Botanical nomenclature
- C. Basic identification principles

IV. Soils
- A. Physical properties of soil
- B. Chemical properties of soil
- C. Biological properties of soil
- D. Soil moisture and plant growth
- E. Urban soils
- F. Soil amendment

V. Tree Nutrition and Fertilization
- A. Fertilizing urban trees and the essential elements
- B. Types of fertilizers and their application
- C. Determining nutritional requirements, fertilization toxicity and leaching

VI. Tree Selection
- A. Matching tree and site
- B. Selecting trees at the nursery

VII. Tree Installation and Establishment
- A. Tree installation, types of planting stock and maintenance
- B. Staking or guying newly planted trees
- C. Special considerations and procedures for transplanting palms

VIII. Tree Support and Lightning Protection
- A. Cabling and bracing systems and the installation of cables, guys, bracing rods, or props
- B. Lightning protection systems for trees
- C. Special considerations and procedures for transplanting palms

IX. Pruning
- A. Pruning objectives, procedures and techniques
- B. How trees respond to pruning, and the effects of severe pruning
- C. Techniques and dangers involved with pruning palms

X. Diagnosis and Plant Disorders
- A. Plant problems caused by biotic and abiotic disorders

B. Diagnostic principles, the signs and symptoms of tree disorders
C. Physiological disorders and injuries, insect and disease problems

XI. Plant Health Care
A. The philosophy of Plant Health Care (PHC) and Integrated Pest Management (IPM)
B. The Appropriate Response Process (ARP) and diagnosis and treatment of plant health problems
C. An effective monitoring program and plant health management strategies

XII. Tree Assessment and Risk Management
A. Tree risk assessment procedures, common defects, conditions, site and environmental factors
B. Risk management decision process
C. Tree hazard mitigation

XIII. Trees and Construction
A. Construction dangers and damage
B. Planning stages of development if trees are to be a part of the landscape
C. Treatment of trees that have been damaged by construction

XIV. Urban Forestry
A. Benefits and costs of trees
B. Tree valuation and appraisal
C. Tree inventories
D. Regulatory and legal issues
E. Urban forest management

XV. Tree Worker Safety
A. Safety standards for tree care operations, personal protective equipment and proper work zone procedures
B. Identifying potential hazards
C. Operating chain saws, chippers and other machines

XVI. Climbing and Working in Trees
A. Standards and safety regulations for tree care operations
B. Equipment identification - ropes, knots, tools and machines
C. The principles of rigging and the equipment and techniques involved
D. Rigging equipment, techniques and safety and efficiency in lowering limbs
E. Assessing an emergency situation and proper emergency response procedures

Assignment:

May include:
1. Research paper on a topic related to hazard tree management or maintenance problems and their treatment (3 - 5 pages)
2. Reading in assigned text (20-30 pages/week)
3. In-class exercises requiring demonstration of pruning techniques, tree inventory techniques, and proper execution of several arborist knots
4. Exercises and worksheets related to tree biology, soils, nutrition, pruning, plant health care, plant selection, tree risk assessment, and diagnosing plant problems
5. Quizzes, mid-term, and final exam

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Worksheets and research paper.	Writing 20 - 30%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Exercises and Worksheets: tree biology, soils, nutrition, pruning, plant health care, plant selection, tree risk assessment, and diagnosing plant problems	Problem solving 20 - 30%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

In-class exercises requiring demonstration of: proper pruning techniques, tree inventory techniques, and execution of several arborist knots	Skill Demonstrations 5 - 10%

Exams: All forms of formal testing, other than skill performance exams.

Quizzes, mid-term, and final exam: multiple choice, true/false, matching items, completion, short answer	Exams 20 - 40%

Other: Includes any assessment tools that do not logically fit into the above categories.

Class participation and attendance.	Other Category 0 - 10%

Representative Textbooks and Materials:
Arborists' Certification Study Guide. 3rd ed. Lilly, Sharon. International Society of Arboriculture. 2010 (classic)
Arboriculture: Integrated Management of Landscape Trees, Shrubs, and Vines. 4th ed. Harris, Richard and Clark, James and Matheny, Nelda. Prentice Hall, Inc. 2003 (classic)