Lecture Contact Hours: 32-36; Homework Hours: 64-72; Total Student Learning Hours: 96-108
Laboratory Contact Hours: 48-54; Homework Hours: 0; Total Student Learning Hours: 48-54

CUYAMACA COLLEGE
COURSE OUTLINE OF RECORD

ORNAMENTAL HORTICULTURE 275 – DIAGNOSING HORTICULTURAL PROBLEMS

2 hours lecture, 3 hours laboratory, 3 units

Catalog Description
Explores methods for positive identification and understanding of symptoms for accurate diagnosis of plant problems in the landscape and nursery. Biotic and abiotic causal agents including cultural influences, nutrient deficiencies and toxicities, pest and disease problems, soil salinity, aeration, drainage and irrigation problems will be discussed. Control and correction of disorders will be determined through an understanding of the organism or function involved.

Prerequisite
None

Recommended Preparation
"C" grade or higher or "Pass" in OH 120, 130, 170 or equivalent

Entrance Skills
Without the following skills, competencies and/or knowledge, students entering this course will be highly unlikely to succeed:
1) Identify and describe the various plant organs, tissues, and their functions.
2) Identify common landscape plant species from trees, shrubs, ground cover, turf and palms.
3) Describe soil textural classes, soil horizons and common soil series.
4) Compare and contrast the effect on plants from high and low levels of pH, soluble salts and sodium in soils.
5) Describe correction or adaptation to soil conditions including alkaline and acid soils, saline soils, sodic soils and calcareous soils.
6) Compare and contrast life cycles of various orders of insects.
7) Identify typical methods of insect pest damage and associate the type of insect for each damage type.
8) Describe integrated pest management including strategies for control with cultural, biological and chemical control methods.
9) Identify 25 insect pests common to the landscape and nurseries of the southwestern United States.
10) Identify 15 common weed pests and list control options.

Course Content
1) Introduction
2) Abiotic Causal Agents
   a. Water and soil salinity
   b. Aeration and drainage
   c. Nutrient deficiencies and toxicities
   d. Irrigation and other cultural related problems
   e. Climate related problems
   f. Agricultural chemical application related problems
3) Biotic Causal Agents
   a. Disease related problems
   b. Insect related problems

4) Use of Diagnostic Tables and Internet Resources
   a. Abiotic disorders diagnostic table
   b. Biotic disorders diagnostic table
   c. Use of research based websites, i.e., UC Davis IPM, UCANR

Course Objectives
Students will be able to:
1) Apply diagnostic methods and practices for evaluating landscape problems.
2) Identify common plant disorder corrective s and causal agents from abiotic to biotic.
3) Research and recommend corrective treatments for common landscape disorders.
4) Interpret reports and results from testing labs for treatment options.

Method of Evaluation
A grading system will be established by the instructor and implemented uniformly. Grades will be based on demonstrated proficiency in subject matter determined by multiple measurements for evaluation, one of which must be essay exams, skills demonstration or, where appropriate, the symbol system.
1) Quizzes, activities, exams and final exam which measure students' ability to:
   a. Apply methods for positive identification and understanding of symptoms for accurate diagnosis of plant problems in the landscape and nursery.
   b. Identify and determine appropriate controls and corrections for biotic and abiotic causal agents including cultural influences, nutrient deficiencies and toxicities, pest and disease problems, soil salinity, aeration, drainage and irrigation problems.

Special Materials Required of Student
None

Minimum Instructional Facilities
1) Standard lecture classroom
2) Field site for demonstrations and lab activities
3) Access to a computer lab for some class meetings.

Method of Instruction
1) Lecture and demonstration
2) Laboratory

Out-of-Class Assignments
1) Reading assignments
2) Written exercises

Texts and References
1) Required (representative example):
   a. Dreistadt, *Pests of Landscape Trees and Shrubs: An Integrated Pest Management Guide*. 3rd edition. University of California Division of Agriculture and Natural Resources, 2016.
   b. Costello, Larry. *Abiotic Disorders of Landscape Plants*. University of California Division of Agriculture and Natural Resources, 2003.
2) Supplemental: None

Student Learning Outcomes
Upon successful completion of this course, students will be able to:
1) Apply diagnostic methods and practices for evaluating common landscape problems
2) Identify common plant disorders and causal agents
3) Research and recommend corrective treatments for common landscape disorders
4) Interpret reports and results from testing labs for treatment options