Las Positas College
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Course Outline for HORT 53

PLANT DISEASE & PEST CONTROL

Effective: Fall 2004

I. CATALOG DESCRIPTION:
HORT 53 — PLANT DISEASE & PEST CONTROL — 3.00 units

Concepts of plant pathology, entomology, and weed science. Identification, symptoms, diagnosis, and control methods of plant diseases, insects, and weed pests. Methods and techniques of disease and pest management, chemical and non-chemical control related to garden, landscape, and other horticulture crops and plants. Disease and pest control materials with emphasis on safe handling, application, and environmental protection.

2.00 Units Lecture 1.00 Units Lab

Grading Methods:
Letter or P/NP

Discipline:

	MIN
Lecture Hours:	36.00
Lab Hours:	54.00
Total Hours:	90.00

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. identify symptoms of disease, insect and animal pest damage;
B. identify common insect, weed pests, and plant diseases;
C. demonstrate familiarity of pest and disease life cycles, host plants, environmental habitat, control methods, and materials;
D. demonstrate basic knowledge of chemical and non-chemical methods and techniques of disease and pest control;
E. properly select, handle, use, and apply disease and pest control materials safely and in accordance with current laws and regulations;
F. understand and follow pest control material, label directions, information, and restrictions.

V. CONTENT:
A. Concepts of plant pest management and control related to insect, disease, and weed pests
B. Plant care and management to promote health and avoid or reduce disease and pest problems
C. Concepts of integrated pest management techniques
D. Weed pest and weed control
    1. Weed classification, ecology, life cycles and habitat
    2. Identification methods and techniques
    3. Control methods, materials, use, and application
    4. Chemical and non-chemical controls
    5. Herbicide classification, mode of action, toxicity, and hazards
    6. Sixty-five common weed pest species of the California East Bay Area
E. Insect "arthropod" pest control
    1. Insect classification and anatomy, ecology, metamorphosis, life cycles, and habitat
    2. Insect-related pests, mites, spiders, snails, slugs, sow bugs, millipedes, etc.
    3. Identification methods and techniques
    4. Insecticide classification, mode of action, toxicity, and environmental hazards
    5. Sixty common insect pests of importance in the local region
    6. Non-chemical alternatives to insecticide use
    7. Insect control methods, materials, use, and application
F. Plant diseases and disease control
    1. Concepts of plant pathology environment
    2. Plant pathogen, plant host, and disease relationships
    3. Plant disease cycle
    4. Plant susceptibility and defense mechanisms
    5. Plant diseases and environmental disorders
    6. Infectious plant diseases and disease-causing pathogens
    7. Non-infectious, cultural and environmental factors which result in poor plant performance and damage
    8. Specific plant diseases, pathogens, ecology, host plants, and controls

9. Plant diseases caused by fungi
10. Plant diseases caused by bacteria
11. Plant diseases caused by viruses
12. Plant diseases caused by mycoplasma
13. Nematodes and related plant problems
14. Identification of disease symptoms and pathogens
15. Thirty common plant diseases of local importance
16. Chemical and non-chemical control methods, materials, use and application
17. Fungicides, bactericides, classification, mode of action, toxicity and environmental hazards

G. Diagnosing plant and landscape problems
1. Systematic approach and techniques of diagnosing plant problems
2. Field methods for diagnosis
3. Tools and equipment
4. Client, consultant relations
5. Professional report writing

H. Concepts of disease and pest control
1. Pesticide hazards and environmental impact
2. Pesticide use; laws and regulations
3. Personal safety, equipment, use, and operation
4. Non-chemical methods and alternatives to chemical pesticides
5. Pesticide labels and related information
6. Chemical pesticides, use and application

VI. METHODS OF INSTRUCTION:
A. **Lecture** -
B. **Discussion** -
C. **Demonstration** -
D. Live specimens
E. Resource speakers
F. Media presentations and examples
G. Handouts by instructor
H. **Field Trips** -

VII. TYPICAL ASSIGNMENTS:
A. Assigned reading from required texts B. Laboratory/field assignments C. Weed / pest collection

VIII. EVALUATION:
A. **Methods**

B. **Frequency**

1. Written exams equally spaced during the semester
2. Quizzes at the instructor's discretion
3. One weed pest collection due at the end of the semester

IX. TYPICAL TEXTS:
1. George Agrios *Plant Pathology*. 4th ed., Academic Press, 1997.
2. University of California ANR Communication Service *The Grower's Weed identification Handbook.*, University of California Press, 0.
3. University of California ANR Communication Service *The Safe and Effective Use of Pesticides.*, University of California Press, 0.
4. University of California ANR Communication Service *Pests of the Garden and Small Farm.*, University of California Press, 0.

X. OTHER MATERIALS REQUIRED OF STUDENTS: