

HORT 54L: HORTICULTURAL PRACTICES: DISEASE IDENTIFICATION & PATHOLOGY

Foothill College Course Outline of Record

Heading	Value
Units:	3
Hours:	3 lecture per week (36 total per quarter)
Degree & Credit Status:	Degree-Applicable Credit Course
Foothill GE:	Non-GE
Transferable:	CSU
Grade Type:	Letter Grade (Request for Pass/No Pass)
Repeatability:	Not Repeatable

Student Learning Outcomes

- Student should be able to identify controls for common horticultural diseases
- Student should be able to identify common horticultural diseases

Description

Identification, morphology, physiology and management of common agricultural and horticultural diseases. Study of the common diseases found in plants. Review of the impacts of common diseases on the plant production and landscape industries and their identification throughout the life cycle of the disease.

Course Objectives

The student will be able to:

- Identify common diseases that impact California horticultural crops.
- Classify diseases using taxonomical nomenclature.
- Review the pathology of common plant diseases.
- Identify the stage of growth of the diseases.
- Discuss IPM solutions to control the diseases.
- List the recommended chemical controls for diseases.
- Prepare a management plan for disease control in horticultural facilities and the landscape.

Course Content

- Identify diseases common on California horticultural crops and landscapes.
 - Identify common horticultural diseases.
 - Identify the economic impacts of diseases on the horticultural field.
 - Specify the disease effects on the California nursery and greenhouse industry.
 - Specify disease damage on landscape installations.
- Classify diseases.
 - Place diseases in related taxonomic groups.
 - Identify the general conditions and characteristics of disease groups that impact California horticultural crops.
- Recognize the pathology of plant diseases.

- Diseases caused by fungi.
 - Diseases caused by bacteria.
 - Diseases caused by viruses.
 - Diseases caused by phytoplasmas.
 - Diseases caused by other organisms.
- Identify growth stages of diseases.
 - Recognize the stage of growth for each disease.
 - Identify cultural conditions which promote diseases.
- Control of diseases using integrated pest management.
 - IPM options in disease control.
 - Excluding disease through cultural control.
 - Mitigation of disease impacts through alternatives to pesticides.
 - Choosing crop varieties with minimal impact from common diseases.
 - Determine point of economic impact to crops from diseases.
- Chemical control of diseases.
 - Identify effective chemical controls for diseases.
 - Review safety hazards for chemical controls.
 - Identify proper safe application methods for chemical disease controls.
- Disease management planning.
 - Measures to control diseases.
 - Economic implications of various disease control methods.
 - Scheduling of disease control methods.

Lab Content

Not applicable.

Special Facilities and/or Equipment

- Classroom with overhead projection and internet connection.
- Gardens and greenhouse with plants that host diseases for identification.

Method(s) of Evaluation

Methods of Evaluation may include but are not limited to the following:

- Identification exams requiring field and image identification of diseases.
- Written exams on the cultural, identification and management issues related to diseases.
- Disease management plan preparation for a designated facility or landscape.

Method(s) of Instruction

Methods of Instruction may include but are not limited to the following:

- Lectures about the impact of diseases on the horticultural industry.
- Discussions regarding pest management.
- Observation and identification of diseases in the greenhouse, nursery and field.
- Discussions regarding control methods for diseases.

Representative Text(s) and Other Materials

Greenwood, Pippa. American Horticultural Society: Pests and Diseases. London, England: DK Books, 2004.

Horst, Kenneth. Westcott's Plant Disease Handbook. New Delhi, India: Springer Science, 2013.

Although these texts are older than the suggested "5 years or newer" standard, they remain seminal texts in this area of study.

Types and/or Examples of Required Reading, Writing, and Outside of Class Assignments

A. Reading assignments include reading approximately 30-50 pages per week from assigned text. Supplemental reading will be provided in hand-out form or through reference to online resources.

B. Field trips to horticultural venues to examine measures used for disease control will be provided.

C. Writing assignments include:

1. Short papers on specific insects.
2. Management plan for a designated facility or landscaped area.

Discipline(s)

Ornamental Horticulture