



Syllabus

HRT 260 Applied Plant Pathology with Integrated Pest Management

General Information

Date April 10th, 2024

Author Shawn Kenaley

Department Conservation

Course Prefix HRT

Course Number 260

Course Title Applied Plant Pathology with Integrated Pest Management

Course Information

Catalog Description A practical and hands-on course investigating the nature, causes, diagnoses, and management options of plant health problems. Interactions between the environment, disease causing organisms, and the plant will be considered as related to integrated pest management (IPM) controls. Students will be trained to identify common plant diseases including environmentally caused disorders. Consideration of site management and corrective horticultural practices as related to plant health will be included. Students will further investigate each topic utilizing laboratory skills and techniques. Field trips are included in the course.

Credit Hours 4

Lecture Contact Hours 3

Lab Contact Hours 2

Other Contact Hours 0

Grading Scheme Letter

Prerequisites

BIO 121 or BIO 125 or BIO 251

Co-requisites

None

First Year Experience/Capstone Designation

This course **DOES NOT** satisfy the outcomes applicable for status as a FYE or Capstone.

SUNY General Education

This course is designated as satisfying a requirement in the following SUNY Gen Ed categories

None

FLCC Values

Institutional Learning Outcomes Addressed by the Course

Inquiry, Perseverance, and Interconnectedness

Course Learning Outcomes

Course Learning Outcomes

1. Outline and describe the fundamental concepts of plant pathology.
2. Illustrate important processes in plant disease epidemiology.
3. Apply a systematic approach to plant disease diagnosis using references as well as basic field and laboratory equipment.
4. Describe major types of plant pathogens. Identify major groups of plant pathogens and associated strategies for their mitigation.

Outline of Topics Covered

I. What is plant pathology and why is it important?

Using the Irish potato famine as a case study to start the disease triangle concept and how this prompted the understanding of pathogens causing disease.

II. Symptoms and signs of disease

Observation of the whole plant and its parts to diagnose plant diseases.

III. Types of diseases

A study of the range of plant diseases, how they affect plants and why.

IV. IPM and disease management including pesticides

How plant diseases can be managed using integrated strategies: genetic, cultural, biological, chemical.

V. Fungal diseases

Biology of fungal plant pathogens, diseases they cause, and management strategies.

VI. Plant pathogenic bacteria

Biology of plant pathogenic bacteria, diseases they cause, and management strategies.

VII. Nematodes

VIII. Biology of plant pathogenic nematodes, diseases they cause, and management strategies.

IX. Viruses

Biology of plant pathogenic viruses, diseases they cause, and management strategies.

X. Abiotic disorders

Environmental factors that cause plant disorders.

XI. Plant-pathogen interactions

How pathogens and plants interact on a molecular level and how this influences control methods.

XII. People and plant diseases

Plant epidemics, how our agricultural and trade practices influence plant pathogens.