PST-2321: PLANT PEST DIAGNOSTICS

Cuyahoga Community College

Viewing: PST-2321 : Plant Pest Diagnostics

Board of Trustees:
February 2019

Academic Term:
Fall 2020

Subject Code
PST - Plant Science/Landscape Tech.

Course Number:
2321

Title:
Plant Pest Diagnostics

Catalog Description:
In-depth study of Integrated Pest Management tactics as used in the green industry to provide a sustainable approach to care of plants in the agricultural, nursery, and landscape environment.

Credit Hour(s):
3

Lecture Hour(s):
2

Lab Hour(s):
3

Requisites

Prerequisite and Corequisite
PST-1311 Deciduous Woody Landscape Plants or concurrent enrollment, or PST-1321 Evergreens, Groundcovers or concurrent enrollment, and Herbaceous Landscape Plants; or departmental approval.

Outcomes

Course Outcome(s):
Diagnose common horticulturally and agriculturally significant pests and diseases.

Objective(s):
1. Identify and explain plant pathogen and insect pest life cycles.
2. Distinguish damage from pest or disease from mechanical damage and physiological disorders.

Course Outcome(s):
Evaluate the effectiveness of various plant pest management tactics based on various specific situations.

Objective(s):
1. Construct a disease and pest scouting program based on phenological data.
2. Calculate costs of various management tactics and make recommendations based on economic factors.
3. Apply integrated pest management tactics to help reduce pest populations or suppress disease.
4. Demonstrate a working knowledge of safe and responsible pesticide application.

Course Outcome(s):
Interpret pesticide labels and demonstrate compliance with pesticide law.

Objective(s):
1. Identify and adhere to appropriate OSHA and State of Ohio pesticide regulations.

2. Define the terms caution, warning, and danger as they apply to pesticide labels.
3. Describe the meanings of LD50 and LC50 as they apply to pesticide labels.

Methods of Evaluation:

1. Quiz
2. Midterm exam
3. Final exam
4. Laboratory reports

Course Content Outline:

1. Arthropods
   a. Identification
   b. Life cycles
   c. Orders
   d. Plant pests
   e. Beneficials
2. Pathogens
   a. Identification
   b. Life cycles
   c. Orders
   d. Plant pests
   e. Beneficials
3. Mechanical damage
   a. Identification
   b. Common causes
   c. Treatments
4. Physiological disorders
   a. Identification
   b. Common causes
   c. Treatments
5. Phenology
   a. Degree Day Method
   b. Natural indices
   c. Prediction of events
   d. Phenology as a management tactic
6. Integrated Pest Management
   a. Determining thresholds
   b. Surveying population
   c. Understanding population dynamics
   d. Mechanical vcontrols
   e. Trap methods
   f. Diversion methods
   g. Sterile insect technique
   h. Use of beneficials
   i. Cultural controls
   j. Chemical controls
7. Management economic factors
   a. Financial factors
   b. Aesthetic factors
   c. Public opinion factors
8. Pesticide use
   a. Pesticide law
   b. Pesticide label
   c. OSHA and EPA regulations
   d. Ohio Department of Agriculture regulations and licensure

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Resources

Edward Radcliffe, William Hutchison, Rafael Cancelado. *Integrated Pest Management: Concepts, Tactics, Strategies and Case Studies.* 1st. Cambridge University Press, 2009.

Robert Norris, Edward Caswell-Chen, Marcos Kogan. *Concepts in Integrated Pest Management.* 1st. Prentice Hall, 2002.

Dreistadt, S. *Pests of Landscape Trees and Shrubs: An Integrated Pest Management Guide*. 3rd Ed. Univ of California Agriculture & Natural Resources, 2016.

Resources Other

1. American Phytopathological Society (http://www.apsnet.org/Pages/default.aspx)
2. Entomological Society of America (http://www.entsoc.org/)
3. United States Environmental Protection Agency: Fact Sheets on IPM (http://www.epa.gov/opp00001/factsheets/ipm.htm)

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