

Clackamas Community College

Online Course/Outline Submission System

Section #1 General Course Information

Department: Horticulture

Submitter

First Name: Renee

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Course Prefix and Number: HOR - 261

Credits: 2

Contact hours

Lecture (# of hours):

Lec/lab (# of hours): 44

Lab (# of hours):

Total course hours: 44

For each credit, the student will be expected to spend, on average, 3 hours per week in combination of in-class and out-of-class activity.

Course Title: Tree Diagnostics

Course Description:

Theory and practice in diagnosing specific biotic and abiotic causes of poor tree health. Includes identification of symptoms, use of monitoring tools and effective customer communications. Prepare and test for the Oregon Department of Agriculture Ornamental and Turf Insecticide/Fungicide exam. Class includes a lab component.

Type of Course: Career Technical Preparatory

Reason for the new course:

New Arboriculture program course.

Is this class challengeable?

Yes

Can this course be repeated for credit in a degree?

No

Is general education certification being sought at this time?

No

Does this course map to any general education outcome(s)?

No

Is this course part of an AAS or related certificate of completion?

Yes

Name of degree(s) and/or certificate(s): Arboriculture AAS, Landscape Management AAS

Are there prerequisites to this course?

Yes

Pre-reqs: HOR-216, HOR-225, HOR-236, HOR-237

Have you consulted with the appropriate chair if the pre-req is in another program?

No

Are there corequisites to this course?

Yes

Co-reqs: HOR-120

Are there any requirements or recommendations for students taken this course?

No

Are there similar courses existing in other programs or disciplines at CCC?

No

Will this class use library resources?

Yes

Have you talked with a librarian regarding that impact?

No

Is there any other potential impact on another department?

No

Does this course belong on the Related Instruction list?

No

GRADING METHOD:

A-F or Pass/No Pass

Audit: Yes

When do you plan to offer this course?

✓ **Spring**

Is this course equivalent to another?

If yes, they must have the same description and outcomes.

No

Will this course appear in the college catalog?

Yes

Will this course appear in the schedule?

Yes

Student Learning Outcomes:

Upon successful completion of this course, students should be able to:

- 1.define the difference between an abiotic-caused plant disorder and a biotic-caused plant disorder,
- 2.identify environmental factors that affect biotic and abiotic-caused tree disorders,
- 3.identify by sight common disorders of trees,
- 4.use monitoring tools to assist in tree problem diagnosis,
- 5.list appropriate steps to improve tree health when compromised by specific abiotic or biotic-induced disorders,
- 6.communicate in writing and orally the cause of ill health for selected trees,
- 7.pass the ODA Ornamental & Turf Insecticide/Fungicide exam.

This course does not include assessable General Education outcomes.

Major Topic Outline:

- 1.Abiotic vs. Biotic Disorders
 - a.Compare definitions used for defining abiotic-caused plant disorders from various resources;
 - b.List key differences and distinctions between an abiotic-caused plant disorder and a biotic-caused plant disorder.
 - c.List how abiotic factors may influence biotic factors.
- 2.Plant Symptoms Resulting from Abiotic Factors

- a. Temperature: heat, cold
 - b. Soil problems: water, aeration, nutrient excess or deficiency;
 - c. Sunburn and sunscald
 - d. Light intensity
 - e. Wind injury
 - f. Hail/ice
 - g. Lightning
 - h. Human induced: girdling roots, pesticide damage, graft incompatibility, mechanical injury, inappropriate planting technique, gas injury, air pollution, root removal, soil compaction
3. Biotic Signs & Symptoms of Disorders
- a. Biotic – fungus, bacteria, virus, insect, mammal, mite, rodent, deer
 - b. Diagnostic process used to determine cause of decline
4. Customer Communication
- a. Design communication techniques to use for explaining specific abiotic and biotic disorders to clients
 - b. Review written forms used by various private and public entities
 - c. Practice delivering information regarding tree problems in both writing and orally for selected trees and other landscape plants, according to standards used in industry Plant Health Care forms, and public sector tree evaluation documents
5. Monitoring Tools to Aid in Diagnosis
- a. beating trays, pheromone traps, weather stations, soil probes, degree-days, dissecting scope, hand lens
 - b. onsite inspection, soil samples, drones, area wide weather stations, internet resources
 - c. software programs
6. Identifying Steps to Improve Tree Health
- a. Create a working list of how to protect plants from abiotic plant disorders
 - b. Prepare a working list of how to treat plants suffering from abiotic disorders
 - c. 50 most common trees grown in landscapes locally and 3-5 common biotic disorders for each
 - d. 10 most common abiotic disorders of trees grown in local landscapes – drought, water-logged roots, compaction, lawn mower blight, poor planting technique, wrong location, temperature damage, root removal due to human activities
7. Take the Oregon Department of Agriculture Ornamental & Turf Insecticide/Fungicide exam

Does the content of this class relate to job skills in any of the following areas:

- | | |
|--------------------------------------|------------|
| 1. Increased energy efficiency | No |
| 2. Produce renewable energy | No |
| 3. Prevent environmental degradation | Yes |
| 4. Clean up natural environment | Yes |
| 5. Supports green services | Yes |

Percent of course: 30%

First term to be offered:

Specify term: Spring 2016
