

**Clackamas Community College**  
Online Course/Outline Submission System

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**Section #1 General Course Information****Department:** Horticulture**Submitter**

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**Course Prefix and Number:** HOR - 223**# Credits:** 3**Contact hours**

Lecture (# of hours): 33

Lec/lab (# of hours):

Lab (# of hours): 11

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:** Applied Plant Science**Course Description:**

An overview of the practical aspects of plant growth and development, classification systems, plant breeding and environmental factors that impact plant growth. Class includes a lab component.

**Type of Course:** Career Technical Preparatory

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)?

**Yes****Check which General Education requirement:** Writing Arts and Letters Science & Computer Science

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

**Yes****Name of degree(s) and/or certificate(s):** Horticulture AAS, Landscape AAS

Are there prerequisites to this course?

**No**

Are there corequisites to this course?

**No**

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?

**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?

**✓ Fall**

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.appropriately use terminology associated with plant anatomy, physiology and development to communicate with horticulture workers;
  - 2.identify the various parts of a plant and their functions,
  - 3.describe the factors that contribute to microclimates and their possible impacts on plant growth,
  - 4.describe the influence of plant hormones on plant growth and development,
  - 5.explain the potential ramifications of climate change on horticulture in the pacific northwest, and how industry professionals could prepare for these changes;
  - 6.apply knowledge of how environmental factors influence plant growth and development in a greenhouse, nursery, landscape or farm setting.
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**AAOT/ASOT GENERAL EDUCATION OUTCOMES  
COURSE OUTLINE MAPPING CHART**

**Mark outcomes addressed by the course:**

- Mark "C" if this course completely addresses the outcome. Students who successfully complete this course are likely to have attained this learning outcome.
- Mark "S" if this course substantially addresses the outcome. More than one course is required for the outcome to be completely addressed. Students who successfully complete all of the required courses are likely to have attained this learning outcome.
- Mark "P" if this course partially addresses the outcome. Students will have been exposed to the outcome as part of the class, but the class is not a primary means for attaining the outcome and assessment for general education purposes may not be necessary.

**As a result of completing the AAOT/ASOT general education requirements, students will be able to:**

**WR: Writing Outcomes**

1. Read actively, think critically, and write purposefully and capably for academic and, in some cases, professional audiences.
2. Locate, evaluate, and ethically utilize information to communicate effectively.
3. Demonstrate appropriate reasoning in response to complex issues.

**SP: Speech/Oral Communication Outcomes**

1. Engage in ethical communication processes that accomplish goals.
2. Respond to the needs of diverse audiences and contexts.
3. Build and manage relationships.

**MA: Mathematics Outcomes:**

1. Use appropriate mathematics to solve problems.
2. Recognize which mathematical concepts are applicable to a scenario, apply appropriate mathematics and technology in its analysis, and then accurately interpret, validate, and communicate the results.

**AL: Arts and Letters Outcomes**

1. Interpret and engage in the Arts & Letters, making use of the creative process to enrich the quality of life.
2. Critically analyze values and ethics within range of human experience and expression to engage more fully in local and global issues.

**SS: Social Science Outcomes**

1. Apply analytical skills to social phenomena in order to understand human behavior.
2. Apply knowledge and experience to foster personal growth and better appreciate the diverse social world in which we live.

**SC: Science or Computer Science Outcomes**

1. Gather, comprehend, and communicate scientific and technical information in order to explore ideas, models, and solutions and generate further questions.
- S** 2. Apply scientific and technical modes of inquiry, individually, and collaboratively, to critically examine the influence of scientific and technical knowledge on human society and the environment.
- S** 3. Assess the strengths and weaknesses of scientific studies and critically examine the influence of scientific and technical knowledge on human society and the environment.

**CL: Cultural Literacy Outcome**

1. Identify and analyze complex practices, values, and beliefs and the culturally and historically defined meanings of difference.

**Outcomes Assessment Strategies:**

- ✓ General Examination
- ✓ Projects
- ✓ Writing Assignments

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**Major Topic Outline:**

1. Plant anatomy.
2. Plant classification systems.
  - a. Botanical.
  - b. Life Cycle (annual, biennial, perennial).
3. Plant growth and development.
  - a. Phases of development (seed, juvenile, reproductive, senescence).
  - b. Plant hormones and growth regulators.
  - c. Photosynthesis, respiration, transpiration.
  - d. Photoperiod, dormancy, vernalization, tropisms.
4. Climate.

- a. Hardiness zones.
  - b. Microclimates.
  - c. Climate change.
5. Environmental factors.
- a. Light.
  - b. Temperature.
  - c. Atmospheric Gases.
  - d. Water.
  - e. Nutrients.
  - f. Soil.
6. Pollination and genetics.
- a. Hybrids.
  - b. Genetically modified organisms.
  - c. Self-pollinated.
  - d. Open-pollinated.
  - e. Self-sterile.

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

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

Percent of course: 10%

First term to be offered:

Specify term: **Fall 2015**

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