

### Course Outline

**COURSE:** HORT 20                      **DIVISION:** 10                      **ALSO LISTED AS:**

**TERM EFFECTIVE:** Fall 2014  
Course on Hold

**SHORT TITLE:** PRIN HORTICULTURE

**LONG TITLE:** Principles of Horticulture

<u>Units</u>	<u>Number of Weeks</u>	<u>Type</u>	<u>Contact Hours/Week</u>	<u>Total Contact Hours</u>
3	18	Lecture:	2	36
		Lab:	3	54
		Other:	0	0
		Total:	5	90

**COURSE DESCRIPTION:**

This course will provide an introduction to horticulture and crop science. It will cover the biological principles of basic plant processes, classification, anatomy, physiology, and biotechnology. The course will also evaluate the global ecological/environmental and socioeconomical value of plants. Topics will also include the effect of the environment of plants and how we control it, an introduction to plant growth including propagation, media, irrigation, nutrition, management, harvest, and post harvest handling, and people's use of plants. Field trip required.

**PREREQUISITES:**

**COREQUISITES:**

**CREDIT STATUS:** D - Credit - Degree Applicable

**GRADING MODES**

L - Standard Letter Grade

**REPEATABILITY:** N - Course may not be repeated

**SCHEDULE TYPES:**

04 - Laboratory/Studio/Activity

**STUDENT LEARNING OUTCOMES:**

1. Analyze the effects of environmental factors on the growth and development of plants.

ILO: 2,7, 3

Measure: quizzes, written exams

2. Analyze the relationship of plant to the urban as well as natural environments.

ILO: 2,7

Measure: quizzes, written exams

3. Evaluate the global ecological/environmental and socioeconomical value of plants.

ILO: 3,7

Measure: quizzes, exams

4. Germinate, plant and grow agricultural products- landscape or decorative plants.

ILO: 5,6

Measure: Lab project

5. Identify, alleviate and recommend treatment for diseases, and pathogens.

ILO: 2,3,1,7

Measure: quizzes, exams, discussion

6. Examine the factors of plant growth: environment, soil, water, light, temperature.

ILO: 3,7,2,

Measure: quizzes, exams

7. Discuss the different aspects of Horticulture industry.

ILO: 2,3,7

Measure: quizzes, exams, class discussion

8. Use the vocabulary of Horticulture and related fields.

ILO: 1,3,7

Measure: quizzes, exams, class discussion

9. Explain the development of plant growth, care as it relates to plant propagation

ILO: 7,3,2

Measure: quizzes, exams discussion

10. Evaluate the structure and physiology of vascular plants.

ILO: 3,7,2

Measure: quizzes, lab exams

## **CONTENT, STUDENT PERFORMANCE OBJECTIVES, OUT-OF-CLASS ASSIGNMENTS**

Inactive Course: 02/24/2014

3 lec, 3 lab Hours Importance of Horticultural Science: Define Horticulture and describe its relation to society, science and technology; read intro ch. and answer critical thinking questions

3 lec 2 lab Hours Horticulture History: Identify skills to ensure success in the horticulture field. Define personal protective equipment and identify safety precautions necessary when handling, applying and storing chemicals.; written assignment proper usage of tools and new technologies

3 lec, 3 lab Hours Cells and Tissues: plant cell structure, histology and pathology; identify cell tissues in the field

4 lec, 4 lab Hours Foundations: Growth media, Identify the types of growing media and the components of soil. Compare and contrast the use of soil versus a soil-less mix.

Describe the system used for naming and classifying plants. Describe the biological nature of soil and the way plants use soil.; chapter assignments and notebook documentation

4 lec, 6 lab Hours Plant Anatomy: Roots and plant organs.

Describe the major types of root systems, healthy roots, function of the stem and different types. Describe some major types of leaves, and discuss common vein patterns found in leaves. Describe the parts of the flower, its purpose, and the difference between monocot and dicot flowers.; written assignments and labeling handouts

3 lab Hours

Identify the major groups of plants and describe the difference between annuals, biennials, and perennials; field identification and examples taken from out of class

4 lec, 6 lab Hours Plant Physiology: cell function, growth, development and the environment. Describe the effect of light, temperature, nutrients, hormones, pH, quality of air, pesticides, and other chemicals affects plants. Controlling a plants indoor and outdoor environment to accommodate for plant physiology. Describe the process of photosynthesis, cell respiration and why its important to humans.; chapter written assignments and lab exercises describing environmental affects on physiology

4 lec, 6 lab Hours Plant Breeding and Propagation: Discuss the importance of plant propagation, and explain the difference between sexual and asexual propagation. Identify the major parts of a seed and the process of seed germination. Describe the factors involved in planting seeds for transplanting. Discuss a tissue culture method of propagation used in the greenhouse industry.; chapter assignments describing techniques and be able to germinate and propagate plant for a letter grade

4 lec, 4 lab Hours Plant Growth and Management: pruning, pest control and media evaluation, soil testing, composting and vegetable production.; chapter assignment

4 lec, 4 lab Hours Weeds and Disease: Integrated pest management, pesticides and their affects on plants and environment. Invertebrate and vertebrate pests and management.; written assessment and plan of action of a designated harvest area

4 lec, 4 lab Hours Harvest and Post harvest care: Students will be able to discuss strategies to increase crop and adequate post harvest care; written assignment that plans, design and discuss strategies for greater harvest

2 lec, 3 lab Hours Plant Biotechnology: Genetically Modified Organisms; written assignment discussing new technologies and ethical issues discussed

6 lab Hours

Field trips: Field trips will be taken to local nurseries, botanical

gardens, and seed companies; summary of plant field trip including plants harvested and propagation techniques

**METHODS OF INSTRUCTION:**

Lecture, Laboratory, Demonstration, Projects with living plants, Field Trips, and Guest speakers.

**METHODS OF EVALUATION:**

The types of writing assignments required:

Written homework

Lab reports

Term papers

The problem-solving assignments required:

Homework problems

Field work

Lab reports

Quizzes

The types of skill demonstrations required:

Class performance

Field work

Performance exams

The types of objective examinations used in the course:

Multiple choice

Matching items

Completion

Other category:

None

The basis for assigning students grades in the course:

Writing assignments: 15% - 30%

Problem-solving demonstrations: 10% - 35%

Skill demonstrations: 5% - 30%

Objective examinations: 15% - 30%

Other methods of evaluation: 0% - 0%

**REPRESENTATIVE TEXTBOOKS:**

Acquaah, George, Horticulture: Principles and Practices, 3rd ed.

Prentice Hall, Upper Saddle River NJ 2005

Leventine, Estelle and Karen McMahon, Plants and Society, 3rd ed,

McGraw Hill, Boston, MA 2003

Ball Redbook, 17th ed. Vol.2 Crop Production. 2006 Hamrick Ed. Ball

Publishing. ISBN# 1-883052-35-1 or other appropriate college level text.

Reading level of text: 11 grade. Verified by: RM using MS Word

Other Materials Required to be Purchased by the Student: Gloves, by-pass pruners, hand lenses, safety glasses

**ARTICULATION and CERTIFICATE INFORMATION**

Associate Degree:

CSU GE:  
IGETC:  
CSU TRANSFER:  
Transferable CSU, effective 200770  
UC TRANSFER:  
Not Transferable

**SUPPLEMENTAL DATA:**

Basic Skills: N  
Classification: A  
Noncredit Category: Y  
Cooperative Education:  
Program Status: 2 Stand-alone  
Special Class Status: N  
CAN:  
CAN Sequence:  
CSU Crosswalk Course Department: HORT  
CSU Crosswalk Course Number: 20  
Prior to College Level: Y  
Non Credit Enhanced Funding: N  
Funding Agency Code: Y  
In-Service: N  
Occupational Course: D  
Maximum Hours:  
Minimum Hours:  
Course Control Number: CCC000435854  
Sports/Physical Education Course: N  
Taxonomy of Program: 010900