

CATALOG INFORMATION

Dept & Nbr: AGR 164 Title: GRNHSE STRUCTURES/EQUIP
Full Title: Greenhouse Structures and Equipment

Units	Course Hours	Per Week	Nbr of Weeks	Course Hours	Total
Max: 2.0	Lecture	2.0	17	Lecture	34.0
Min: 2.0	Lab	0.0		Lab	0.0
	Contact DHR	0.0		Contact DHR	0.0
	Contact Total	2.0		Contact Total	34.0
	Non-contact DHR	0.0		Non-contact DHR	0.0

Title 5 Category: 01 AA Degree Applic
Grading: GC Credit course for grade or CR/NC
Repeatability: 00 No repeatability allowed or defined
Also listed as:

CATALOG DESCRIPTION:

Evaluation of the many types of greenhouses used for horticultural production. A close look at the appliances and computers necessary to maintain the proper environment for the growing of a variety of crops when grown within closed environments. Course may not meet major requirements at transfer institutions. See your counselor for more information.

PREREQUISITES:

COREQUISITES:

RECOMMENDED PREPARATION:

Completion of AGR 140.

LIMITS ON ENROLLMENT:

SCHEDULE OF CLASSES INFORMATION:

Recommended: Completion of AGR 140.

Explore the various types of greenhouse structures and their components including environmental control systems glazing options and set-up and construction. You will also learn to analyze the energy efficiency of various greenhouse structures and use your greenhouse to maximize production of various specialty crops. (Grade or CR/NC)
Transfer Credit: CSU.

ARTICULATION and CERTIFICATE INFORMATION

ASSOCIATE DEGREE: Effective: Inactive:
Area:
CSU GE: Effective: Inactive:
Transfer area:
IGETC: Effective: Inactive:

Transfer area:

CSU TRANSFER: TRANSFERABLE Effective: FALL 1988 Inactive:

UC TRANSFER: Effective: Inactive:

CAN:

CERTIFICATE APPLICABLE: C CERTIFICATE APPLICABLE COURSE

APPROVAL AND DATES

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Version 01 Submitted by: HAYES/COOPER/XEROGEANES Date: 03/11/1988
Department approved: Date:
Curriculum approved: 03/11/1988 Version approved: 03/11/1988
Prerequisites approved: Last reviewed: 10/10/2001
Term effective: SPRING 2002 Last taught: SPRING 2002 Inactive:

COURSE CONTENT

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OUTCOME AND OBJECTIVES:

1. Develop a glossary of terminology used in the greenhouse.
2. Discuss specific structural and equipment needs for cut flowers, bedding plants, propagation, foliage and florist color, hydroponics and vegetable production.
3. Demonstrate setting of controls to regulate heating, cooling, ventilation and irrigation.
4. Design a greenhouse to grow a specified crop including the following: floor plan, bench layout, work areas, irrigation system, appliances and climate control system accompanied by a cost estimate for material and labor for construction.

TOPICS AND SCOPE:

1. Greenhouse
 - a. History
 - b. Contribution to modern horticulture
2. Greenhouse Structure
 - a. Structural type
 - 1) Shape
 - 2) Frame materials
 - 3) Glazing materials
 - b. Siting and floorplan
 - c. Heat loss and cooling load calculations
 - d. Construction and cost
 - e. Accessory structures
3. Equipment
 - a. Heating
 - b. Coolingh
 - c. Irrigation
 - d. Humidity
 - e. Carbon dioxide
 - f. Shading and curtains
 - g. Artificial lighting
 - h. Controls
 - i. Computers
 - j. Fuel and power
 - k. Environmental factors
4. Specific Structural and Equipment Needs
 - a. Cutflowers
 - b. Bedding plants

- c. Propagation
- d. Foliage and florist color
- e. Hydroponics
- f. Vegetable production
- g. Other

ASSIGNMENTS:

READING ASSIGNMENTS:

Students will be required to read and study the assigned chapters in the textbook, as well as assignments from a variety of handouts, library books and magazines. Examples of appropriate recommended reading are: Trade Magazines: Grower Talks; Related Texts: Commercial Flower Forcing; Ball Redbook

WRITING ASSIGNMENTS:

Students are required to prepare and submit the following written assignments, which will constitute a major part of the grade:

1. Glossary of greenhouse terminology.
2. Greenhouse plan, specifications and estimate designed to commercially grow a specific crop.
3. Essay describing 5 problem situations arising in the greenhouse and the means to solve the problems.

OUTSIDE ASSIGNMENTS:

Students are expected to spend a minimum of two hours of independent work out of class for each unit of credit, by doing the following:

1. Reading and writing assignments, as indicated on the course syllabus.
2. Preparation of plans, specifications and estimate as assigned.
3. Preparation of essay.

ASSIGNMENTS THAT DEMONSTRATE CRITICAL THINKING:

Students will demonstrate the ability to think critically by performing the following tasks:

1. Design the proper greenhouse structure and equipment necessary to grow a particular crop.
2. Identify 5 greenhouse structural and/or equipment problems and formulate appropriate solutions to these problems.

METHOD OF INSTRUCTION:

Lectures, class discussion, demonstration, film/slide/video presentations and field trips to local commercial greenhouse operations.

METHODS OF EVALUATION:

Students will be evaluated on all of the following with written assignments and exams weighing the heaviest in determining final grades: 1. Greenhouse design, specifications and cost estimate 2. Essay (10 typed pages - 2 pages/problem) 3. Glossary 4. Section quizzes (multiple choice, fill in and short answer) 5. Midterm and final exam (written multiple choice, fill in short answer and essay)

BASIS FOR GRADING:

The assignment of a grade is based on the level of achievement of the outcomes and objectives of the course outline and is reflected in quantifiable terms in the course syllabus.

REPRESENTATIVE TEXTBOOKS:

Greenhouse Operation and Management by Paul Nelson, Reston Publishing Company, 1985