



Course Outline

2026-2027 Catalog

AET 22 - Natural Resources and Agri-Construction

Catalog Description

Transfer Status: CSU

Unit(s): 3.00

Lecture: 34.00 Contact hours/68.00 Out of class hours/102.00 Total hours/2.00 Unit(s)

Lab: 51.00 Contact hours/0.00 Out of class hours/51.00 Total hours/1.00 Unit(s)

Total: 85.00 Contact hours/68.00 Out of class hours/153.00 Total hours/3.00 Unit(s)

Course Description: This course introduces students to the selection and use of farm structural and mechanical equipment. It will cover farm wiring, carpentry, concrete, masonry, plumbing, painting and metal work with emphasis on the actual practices used in agricultural construction.

Objectives

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

1. Explain terms and nomenclature pertaining to the tools, materials and hardware associated with agricultural construction.
2. Demonstrate the safe and proper usage of basic construction tools, both power and hand.
3. Perform fundamental and proper techniques of construction including concrete, foundations, carpentry, plumbing and electrical.
4. Prepare a simple three dimensional drawing and a cost estimate for a small building.
5. Demonstrate safe work habits.

Course Content

Topic Titles / Suggested Time Topic

Lecture

<u>Topics</u>	<u>Lec Hrs</u>
Concrete and masonry	6.00
Plumbing	6.00
Electrical	8.00
Carpentry and construction projects	8.00
Tools, safety and operation	3.00
Building plans and cost estimate	3.00
Total Hours:	34.00

Lab

<u>Topics</u>	<u>Lab Hrs</u>
Safety and orientation to to work areas	3.00
Maintenance and proper use of tools and equipment	3.00
Concrete and masonry	6.00
Plumbing	6.00
Electrical	6.00
Carpentry and project construction	21.00
Three dimensional drawings and cost estimates	6.00
Total Hours:	51.00

Methods of Instruction

- A. Demonstrations
- B. Group Discussions
- C. Homework: Students are required to complete two hours of outside-of-class homework for each hour of lecture
- D. Laboratory Experiments
- E. Lecture
- F. Problem-Solving Sessions

Methods of Evaluation

- A. Exams/Tests

- B. Projects
- C. Class participation
- D. Lab Projects
- E. Mid-term and final examinations

Examples of Assignments

Reading Assignments

1. Read an article on shop safety and be prepared to discuss power tool safety with the class.
2. Read the chapter in your book on preparing concrete forms and be ready for a class discussion.

Writing Assignments

1. Write a 2-3 page paper on basic electrical wiring safety and basic rules when working with electricity.
2. Create a bill of materials for a small building and identify the costs associated with each item.

Out-of-Class Assignments

1. Visit a construction site and observe the workers' safety practices. Be prepared to share your observations with the class.
2. Go to a building supply store and get pricing for the list of electrical items that we will use during our electrical lab.

Recommended Materials of Instruction

Fleming, Eric. (2005). Construction Technology. *Blackwell Publishing*, 1st.

Other Learning Materials

Students will need to provide:

- a. Safety glasses
- b. 16' steel tape (or longer)
- c. Nail apron
- e. Combination square
- f. Carpenter's hammer
- g. Bump hat

Minimum Qualifications

Agricultural Engineering
Agriculture (Masters Required)
Construction Technology

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