# BUTTE COLLEGE
## COURSE OUTLINE

I. **CATALOG DESCRIPTION**

**AET 22 - Natural Resources and Agri-Construction** **3 Unit(s)**

**Prerequisite(s):** NONE
**Recommended Prep:** Reading Level III; English Level II; Math Level III
**Transfer Status:** CSU
34 hours Lecture
51 hours Lab

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.

II. **OBJECTIVES**

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

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

III. **COURSE CONTENT**

A. **Unit Titles/Suggested Time Schedule**

Lecture

| Topics | Hours |
|---|---|
| 1. Tools, safety and operation | 3.00 |
| 2. Building plans and cost estimate | 3.00 |
| 3. Concrete and masonry | 6.00 |
| 4. Plumbing | 6.00 |
| 5. Electrical | 8.00 |
| 6. Carpentry and construction projects | 8.00 |
| Total Hours | 34.00 |

Lab

| Topics | Hours |
|---|---|
| 1. Safety and orientation to to work areas | 3.00 |
| 2. Maintenance and proper use of tools and equipment | 3.00 |
| 3. Concrete and masonry | 6.00 |
| 4. Plumbing | 6.00 |
| 5. Electrical | 6.00 |
| 6. Three dimensional drawings and cost estimates | 6.00 |
| 7. Carpentry and project construction | 21.00 |

Total Hours 51.00

## IV. METHODS OF INSTRUCTION

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

## V. METHODS OF EVALUATION

A. Exams/Tests
B. Projects
C. Class participation
D. Lab Projects
E. Mid-term and final examinations

## VI. EXAMPLES OF ASSIGNMENTS

A. 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.
B. 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.
C. 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.

## VII. RECOMMENDED MATERIALS OF INSTRUCTION

Textbooks:

A. Fleming, Eric. Construction Technology. 1st Edition. Blackwell Publishing, 2005.

Materials Other Than Textbooks:

A. 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

**Created/Revised by:** Bruce Enyeart
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