

COCONINO COMMUNITY COLLEGE

COURSE OUTLINE

Prepared by: Joseph M. Costion
Status: Permanent

Date: Sept. 2, 2004

A. Identification:

1. Subject Area: Construction Technology Management (CTM)
2. Course Number: 151
3. Course Title: House Wiring I
4. Credit Hrs: 3

5. Catalog Description:

Basic Electrical theory and safety presented. Survey of electrical construction processes for residential applications. Determining materials, installation processes, safety, and code requirements of electrical construction will be emphasized and applied. Students will apply a variety of common residential receptacle and switch circuits in a shop practice setting. Two lecture. Two lab. May be taken for S/U credit.

B. Course Goals:

Utilize knowledge gained to apply electrical construction processes in a residential environment.

C. Course Outcomes:

Students will:

1. Understand the basic principles and units of measure of Electrical Theory
2. Understand and apply Ohm's Law for electrical circuit sizing purposes in Residential wiring.
3. Identify common electrical safety issues and hazards in the workplace
4. Identify electrical theory that apply to residential electrical construction
5. Identify proper conductor sizing, insulation types, wiring methods, connections, and voltage drops
6. Read electrical Blue Prints of a project for circuit installations.
7. Identify types of wiring devices used in electrical construction and National Electrical Manufacturers Association (NEMA) classifications
8. Determine installation processes used for various wiring devices
9. Determine wiring capacities for junction boxes, load centers, etc.
10. Calculate circuit loading, maximum/minimum requirements
11. Interpret National Electric Code (NEC) code for electrical applications
12. Determine bonding requirements and induction heating possibilities
13. Examine grounding requirements for various electrical construction applications.
14. Interpret working drawings

15. Determine individual requirements for calculation and installation of special purpose devices
16. Identify various service entrances, size, and installation requirements for codes & utilities.

D. Course Content:

Will include:

1. Ohm's Law
2. General information for electrical construction
3. Electrical symbol blueprint reading
4. Determining circuit loading, type, size, and quantity
5. NEC Bonding requirements
6. Lighting and switching circuits
7. Grounding equipment and requirements
8. Special purpose circuits
9. Service-entrance equipment
10. Circuit & Device installations
11. General cost estimating procedures
12. National Electric Code