

**PALOMAR COLLEGE**  
**COURSE OUTLINE OF RECORD FOR**  
**DEGREE CREDIT COURSE**

\_\_x\_\_ Transfer course    \_\_x\_\_ A.A. degree applicable course  
(check all that apply)

**COURSE NUMBER AND TITLE:** AP EL 103 – Electrical Lineperson III

**UNIT VALUE:** 4

**MINIMUM NUMBER OF SEMESTER HOURS:** 72

**BASIC SKILLS REQUIREMENTS:** Appropriate language and computational skills.

**ENTRANCE REQUIREMENTS**

**PREREQUISITE:** AP EL 102.

**COREQUISITE:** None.

**RECOMMENDED PREPARATION:** None.

**SCOPE OF COURSE:**

An introduction to framing, setting, guying poles, installation of conductors and grounds, and the laying out and constructing of an underground line system.

**SPECIFIC COURSE OBJECTIVES:**

The student will be able to:

1. Practice standard safety procedures appropriate to the power utility industry.
2. Recognize and deal appropriately with hazardous materials in the power utility industry.
3. Properly assemble and install crossarms, pins, and insulators.
4. Demonstrate the proper procedures for splicing, sagging, and tying in conductors.
5. Properly unload, frame, and haul poles in a safe manner.
6. Demonstrate the proper method of splicing and pulling cable.
7. Recognize and explain safe manhole/vault construction practices.
8. Demonstrate basic knowledge in underground residential systems.

## **CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:**

- I. Rules and Regulations
  - A. Review of safety standards
  - B. Working safely in vaults and excavations
  
- II. Distribution Line Maintenance I - Pole, Pole Hardware, Conductors, and Grounding
  - A. Unloading, framing, and hauling poles
  - B. Setting poles
  - C. Guying and anchoring poles
  - D. Mounting crossarms, pins, and insulators
  - E. Stringing and joining conductors
  - F. Sagging line conductors
  - G. Grounding
  
- III. Underground Line Maintenance I - System Construction and Components
  - A. Introduction to underground line systems
  - B. Laying conduit
  - C. Manhole/vault construction
  - D. Pulling cable
  - E. Splicing cable
  - F. Underground residential systems
  - G. Safety in underground line maintenance

## **REQUIRED READING:**

Electrical Lineman Training Committee. Imperial Irrigation District's Lineman Apprenticeship Training Handbook. Imperial, CA: Imperial Irrigation District, 1990.

## **SUGGESTED READING:**

Kurtz, Edwin D., and Thomas M. Shoemaker. The Lineman and Cableman's Handbook. 8th edition. New York: McGraw-Hill, 1992.

## **REQUIRED WRITING:**

Written homework assignments consisting of nine to ten pages in length, which involve problem-solving analyzation in construction measurements.

## **OUTSIDE ASSIGNMENTS:**

**Students are expected to spend a minimum of three hours per unit per week in class and on outside assignments, prorated for short-term classes.**

Outside class assignments will include reading assigned textbooks, handouts, completion of exercises, periodic research, critiquing and analyzing problems, and attending safety meetings.

## INSTRUCTIONAL METHODOLOGY:

### Check all that apply:

- lecture  
 laboratory  
 lecture-laboratory combination  
 directed study

**This course may be offered as a distance learning course and meets Title 5 regulations 55370, 55372, 55374, 55376, 55378, and 55380.**

Yes  No

### If yes, check all that apply.

- Television Course (Video one-way, e.g. ITV, video cassette, etc.)  
 Online Course (Text one-way, e.g. newspaper, correspondence, electronic file, etc.)  
 Two-Way Video Conferencing (Two-way interactive video and audio)  
 One-Way Video Conferencing (One-way interactive video and two-way interactive audio)  
 Computer Assisted Instruction (A specialized form of mediated instruction relying primarily on student access to information and prepared lessons or teaching materials through a computer terminal, but not under immediate supervision of a qualified instructor.)

**GRADING POLICY AND STANDARDS** (include methods of determining whether the stated objectives have been met by students):

Augmented with a performance review to determine if all course objectives have been met –

Class Participation	20%	A = 100-90
Homework	20%	B = 89-80
Laboratory	20%	C = 79-70
Quizzes	20%	F = Below 70
Pre-test/Final exam	<u>20%</u> 100%	

**IS COURSE REPEATABLE FOR REASON(S) OTHER THAN DEFICIENT GRADE?**

Yes  No  Number of times course may be taken for credit: 2

If yes, identify specific provision of Title 5 Division 2 section(s), 55761-55763 and 58161 which qualifies course as repeatable: 58161 Part C 2A

**CONTACT PERSON:** Director, Vocational Programs, Ext. 2286

SIGNATURES ON FILE