

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 105 – Electrical Lineperson V

UNIT VALUE: 4

MINIMUM NUMBER OF SEMESTER HOURS: 72

BASIC SKILLS REQUIREMENTS: Appropriate language and computational skills.

ENTRANCE REQUIREMENTS

PREREQUISITE: AP EL 104.

COREQUISITE: None.

RECOMMENDED PREPARATION: None.

SCOPE OF COURSE:

Comprehensive review in AC theory and advanced training in distribution line maintenance (i.e., transmission structures, transmission line installation, climbing steel poles and towers, working on de-energized lines, rigging for high voltage work, hot transmission line repair, using temporary structures, and usage of gloves and hot sticks).

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. Identify and resolve, through given troubleshooting techniques, power loss and outages.
4. Implement and maintain care of “hot stick” tools.
5. Implement and maintain care of gloving techniques.
6. Replace insulators and other components by using gloves and hot sticks.
7. Identify and demonstrate practical uses of other safety equipment (i.e., blankets).

CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:

- I. Rules and Regulations
 - A. Review and implementation of safety measures
 - B. Proper use of gloves and blankets
 - 1. Maintenance
 - 2. Testing
 - C. Review of industry and IID practices for the use of hot sticks

- II. Advanced Review of High Voltage AC Power Theory
 - A. Troubleshooting power and power loss
 - B. Formulas and computations pertaining to AC power
 - 1. Capacitance and capacitance resistance
 - 2. Resistance
 - 3. Impedance
 - 4. Power factors
 - C. Review of three phase power
 - D. Overview of delta and wye configurations
 - E. Voltage regulator applications
 - F. Capacitor applications

- III. Distribution Line Repair and Replacement
 - A. Introduction to live line maintenance
 - B. Live line maintenance (Gloving)
 - C. Use and care of live line maintenance tools (hot sticks)
 - D. Removing and replacing distribution lines and components

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, and critiquing and analyzing problems.

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