

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 106 – Electrical Lineperson VI

UNIT VALUE: 4.0

MINIMUM NUMBER OF SEMESTER HOURS: 72

BASIC SKILLS REQUIREMENTS: Appropriate language and computational skills.

ENTRANCE REQUIREMENTS

PREREQUISITE: AP EL 105

COREQUISITE: None.

RECOMMENDED PREPARATION: None.

SCOPE OF COURSE:

The basic principles in the construction, operation, and maintenance procedures associated with substations and switchyards.

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. Analyze, inspect, and test a transformer.
4. Analyze, inspect, and test a circuit breaker.
5. Analyze, inspect, and test a relay.

CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:

- I. Rules and Regulations
 - A. Review of National Electric Code
 - B. Industrial, commercial, and residential requirements
 - C. Identifying and disposing of hazardous waste
 - D. Assigned safety meetings
- II. Supervised Construction
 - A. Scope and purpose
 - B. Definition and terms
- III. Substation and Switchyard Maintenance
 - A. Basic operating principles of power, current, and potential transformers
 - B. Transformer inspection, maintenance, and testing
 - C. Basic operating principles of circuit breakers
 - D. Circuit breaker maintenance
 - E. Operation and maintenance of capacitors and reactors
 - F. Operation and maintenance of voltage regulators
 - G. Operation and maintenance of protective relays
 - H. Concepts of control equipment
 - I. High voltage terminations
 - J. Safety in substations and switchyards

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.

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

INSTRUCTIONAL METHODOLOGY:

Check all that apply:

- lecture
- laboratory
- lecture-laboratory combination
- directed study

DISTANCE LEARNING:

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