

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 E 101 - Introduction to the Electrical Trade and Industry, DC Theory and Conduit Bending

UNIT VALUE: 4

MINIMUM NUMBER OF SEMESTER HOURS: 96

BASIC SKILLS REQUIREMENTS:

Appropriate language and computational skills.

ENTRANCE REQUIREMENTS:

PREREQUISITE: Completion of the following:

1. One semester of Algebra I with a grade of "C" or better and
2. Designated tests with a passing grade determined by the appropriate committee and
3. Indentured apprentice to the San Diego Electrical Joint Apprenticeship and Training Committee or the Riverside and San Bernardino Joint Electrical Apprenticeship Training Committee.

COREQUISITE: None.

RECOMMENDED PREPARATION: None.

SCOPE OF COURSE:

Orientation to the electrical industry; introduction to the electrical code; fundamentals of wiring methods, fastening devices, electrical conductors, circuits, and voltage.

SPECIFIC COURSE OBJECTIVES:

The student will be able to:

1. Identify specific hand tools used in the electrical trade.

2. Deduce valid conclusions employing formulas and arithmetic skills in solving problems related to conduit bending and circuit calculations.
3. Research and identify applicable sections of the Electrical Code.
4. Evaluate basic wiring methods and fastening devices.
5. Analyze and select electrical conductors for various environmental and load conditions.
6. Apply conduit bending principles while executing stub-up and offsets with hand benders.
7. Apply principles of CPR and First Aid.

CONTENT IN TERMS OF SPECIFIC BODY OF KNOWLEDGE:

- I. Job Information
 - A. How to study this course
 - B. Your Apprenticeship
 - C. NECA Apprenticeship
 - D. History of the IBEW
 - E. NECA
 - F. Marketing I
 - G. Drug Abuse
 - H. Communications
- II. Electrical Theory
 - A. DC Theory
 - B. Voltage and Current
 - C. Resistors
 - D. Resistance and Power
- III. Health and Safety
 - A. CPR
 - B. First Aid
 - C. Safety with Ladders
 - D. The Work Place
- IV. Conduit Bending
 - A. Intro to Trigonometry
 - B. 90-Degree Stubs
 - C. Kicks and Offsets
 - D. Saddles

REQUIRED READING:

- Cadick, John and AVO Multi-Amp Institute. Cable and Wiring. Albany, NY: Delmar Publishers, Inc., 1993.
- Cox, Richard A. Electricians Guide to Conduit Bending. 2nd edition. Spokane, WA: Pend Orielle Publications, 1982.

Hart, George V. Ugly's Electrical References. Houston, TX: United Printing Arts, 1990.

Herman, Stephen L. Delmar's Standard Textbook of Electricity. Albany, NY: Delmar Publishers, Inc., 1995.

IBEW History of Structure of. Washington, DC: International Brotherhood of Electrical Workers, 1990.

Klein Tool Handbook. Chicago: Klein Tools, Inc., 1990.

Mathematics Essential for NJATC Courses. Upper Marlboro, MD: National Joint Apprenticeship and Training Committee, 1994.

National Electrical Code. Quincy, Mass: National Fire Protection Association, 1993.

NJATC Blueprint Reading. Upper Marlboro, MD: National Joint Apprenticeship and Training Committee, 1993.

NJATC First Year Student Workbook. Upper Marlboro, MD: National Joint Apprenticeship and Training Committee, 1993.

NJATC Residential Print Set. Upper Marlboro, MD: National Joint Apprenticeship and Training Committee, 1993.

This is the NECA. Bethesda, MD: National Electrical Contractors Association, 1990.

SUGGESTED READING:

Croft T., and W. Summers. American Electrician Handbook. New York: McGraw-Hill, 1987.

National Electrical Code Handbook. Quincy, Mass: National Fire Protection Association, 1992.

REQUIRED WRITING:

Complete thirty to fifty pages of written responses to assignments in student workbook.

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.

Completion of reading assignments, student workbook applications and attendance at union and JATC meetings as required.

INSTRUCTIONAL METHODOLOGY:

Check all that apply:

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

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

Yes No

If yes, check all that apply. (See guidelines for preparation for definitions.)

- telecourse
- mediated instruction
- computer assisted instruction

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

5%	Workbook	A = 100 - 90
10%	Participation	B = 89 - 83
70%	Unit exams	C = 82 - 75
15%	Final exam	F = 74 and below

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