

APED 269 Course Outline as of Fall 2019**CATALOG INFORMATION**

Dept and Nbr: APED 269 Title: APP ELECTRICIANS 10THSEM

Full Title: Apprentice Electricians, Tenth Semester

Last Reviewed: 3/28/2022

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	4.00	Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	4.00	Lab Scheduled	3.00	8	Lab Scheduled	52.50
		Contact DHR	0		Contact DHR	0
		Contact Total	6.00		Contact Total	105.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00

Total Student Learning Hours: 210.00

Title 5 Category: AA Degree Applicable

Grading: Grade Only

Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP

Also Listed As:

Formerly: APED220.10

Catalog Description:

Related supplemental instruction for apprentice electricians.

Prerequisites/Corequisites:**Recommended Preparation:****Limits on Enrollment:**

Indentured apprentice

Schedule of Classes Information:

Description: Related supplemental instruction for apprentice electricians. (Grade Only)

Prerequisites/Corequisites:

Recommended:

Limits on Enrollment: Indentured apprentice

Transfer Credit:

Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree: Area
CSU GE: Transfer Area

Effective: Inactive:
Effective: Inactive:

IGETC: Transfer Area

Effective: Inactive:

CSU Transfer: Effective:

Inactive:

UC Transfer: Effective:

Inactive:

CID:

Certificate/Major Applicable:
Not Certificate/Major Applicable

COURSE CONTENT

Student Learning Outcomes:

At the conclusion of this course, the student should be able to:

1. Describe and demonstrate electrical principles and regulations related to electricians' trade.
2. Apply best practices in practical environment related to electricians' trade.

Objectives:

Upon completion of the course, students will be able to:

1. Identify and describe the function of proportional integral and derivative controls, sensors and transmission systems.
2. Describe high voltage testing safety procedures.
3. Locate cable faults using various detection methods.
4. Analyze and test telephone systems.
5. Identify and describe the function of basic security system components.

Topics and Scope:

I. Introduction

- A. Overview of the proportional control and proportional plus integral control action
- B. Derivative control action
- C. Sensors and Transmission systems

II. Testing

- A. Preparing for high voltage testing
- B. High voltage testing safety
- C. Insulation quality testing
- D. Acceptance and maintenance testing

III. Using a Megohmmeter

IV. Introduction to Cable Faults

- A. Locating cable faults
- B. Terminal methods
- C. Tracing methods
- D. Magnetic detection

V. Introduction to Principles and Methods of Earth Testing

VI. Introduction to Telephone Systems

- A. Telephone analyzer
- B. Telephone system testing

- C. Uninterruptable power sources
- VII. Basic Security Systems
 - A. Alarm sensors
 - B. Alarm indicating devices
 - C. System installation and start-up

All topics are covered in the lecture and lab portions of the course.

Assignment:

Lecture-Related Assignments:

1. Homework assignments (1 to 2 sets per week)
2. Quizzes and examinations (4 to 6 per semester)

Lab-Related Assignments:

3. Class performances and field work (on-the-job demonstrations) of skill development, safety practices, equipment, and material handling

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

None, This is a degree applicable course but assessment tools based on writing are not included because problem solving assessments and skill demonstrations are more appropriate for this course.

Writing
0 - 0%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Homework assignments; quizzes; field work

Problem solving
10 - 25%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Class performances; field work

Skill Demonstrations
50 - 65%

Exams: All forms of formal testing, other than skill performance exams.

Quizzes and examinations to include multiple choice, true/false, matching items, completion

Exams
10 - 20%

Other: Includes any assessment tools that do not logically fit into the above categories.

Attendance and participation

Other Category
5 - 10%

Representative Textbooks and Materials:

Photovoltaic Systems. 2nd ed. Dunlop, James. American Technical Publishers. 2010 (classic)

Power Quality Analysis. Dranetz. National Joint Apprenticeship Training Committee. 2010 (classic)

Significant Changes to the National Electrical Code 2011. NJATC. National Joint Apprenticeship Training Committee. 2010 (classic)

Structure Cabling. NJATC. National Joint Apprenticeship Training Committee. 2009 (classic)

Building Automation: System Integration with Open Protocols. NJATC. American Technical Publishers. 2009 (classic)

Fire Alarm Systems. 2nd ed. National Joint Apprenticeship Training Committee. 2008 (classic)

Health Care Systems. NJATC. National Joint Apprenticeship Training Committee. 2008 (classic)

GE NetworX/Sentrol Reference Guide. NJATC. National Joint Apprenticeship Training Committee. 2006 (classic)

Fundamentals of Instrumentation. Stafford, Todd and National Joint Apprenticeship Training Committee. Thomson Delmar Learning. 2005 (classic)