APED 260E Course Outline as of Fall 2020

CATALOG INFORMATION

Dept and Nbr: APED 260E Title: APP ELECTRICIANS 5TH SEM
Full Title: Apprentice Electricians, Fifth 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	2	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:	APED 264

Catalog Description:
Introductory course for training related to electrician indentured apprentices. This is the fifth semester of a ten semester program.

Prerequisites/Corequisites:
Course Completion of APED 260D; OR An applicant with trade experience or previous trade related schooling, upon submitting documentation for review, at the discretion of the Committee, may attempt to challenge the final exams and Hands-on Craft Certification skills in order to test up into a higher year

Recommended Preparation:

Limits on Enrollment:
Indentured apprentice - apply and be accepted by the Redwood Empire Joint Apprenticeship & Training Committee (REJATC)

Schedule of Classes Information:
Description: Introductory course for training related to electrician indentured apprentices. This is the fifth semester of a ten semester program. (Grade Only)
Prerequisites/Corequisites: Course Completion of APED 260D; OR An applicant with trade

experience or previous trade related schooling, upon submitting documentation for review, at the discretion of the Committee, may attempt to challenge the final exams and Hands-on Craft Certification skills in order to test up into a higher year
Recommended:
Limits on Enrollment: Indentured apprentice - apply and be accepted by the Redwood Empire Joint Apprenticeship & Training Committee (REJATC)
Transfer Credit:
Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**	Effective:	Inactive:
CSU GE:	**Transfer Area**	Effective:	Inactive:
IGETC:	**Transfer Area**	Effective:	Inactive:

CSU Transfer:	Effective:	Inactive:
UC Transfer:	Effective:	Inactive:

CID:

Certificate/Major Applicable:
Certificate Applicable Course

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:
Students will be able to:
1. Relate the principles of economics to career goals and to the electrical industry.
2. Relate the importance of leadership to career development.
3. Relate the principles of management to career development and to the electrical industry.
4. Understand marketing as it relates to electrical contractors being competitive in the market place.
5. Apply factors of the National Electrical Code to the installation of electrical grounding conductors.
6. Solve mathematical problems related to the industry.
7. Demonstrate basic manipulative skills used in the electrical industry.
8. Interpret diagrams and blueprints for the installation of motors and motor controls.
9. Relate the laws of physics that pertain to electric motors.
10. Demonstrate knowledge of alternating current theory.

Topics and Scope:

I. Career Development
   A. Economics
   B. Leadership and management
   C. Marketing
II. Safety
   A. Working overhead
   B. Grounding
   C. Electrode, circuit, and system conductors
   D. Equipment grounding
   E. Ground fault projection
   F. System and circuit grounding
   G. Calculating ground fault circuits
   H. Series resonance
   I. Parallel resonance
III. Power Factor
   A. Power factor correction
   B. Branch circuits
IV. Motors
   A. Fractional horsepower
   B. Polyphase motors
   C. Installation
   D. Maintenance and troubleshooting

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:
1. 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; 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	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:
Rigging and Lifting Principals. American Technical Publishers. 2010 (classic)
Electrical Safety-Related Work Practices. 2nd ed. Jones and Bartlett Publishers. 2009 (classic)
Soares Book on Grounding. 10th ed. International Association of Electrical Inspectors. 2008 (classic)
Semiconductors. 2nd ed. Smith, Robert. DELMAR/Cengage Learning. 2008 (classic)