APED 362 Course Outline as of Spring 2020

CATALOG INFORMATION

Dept and Nbr: APED 362 Title: APP PLUMBERS, HVAC, 3RD
Full Title: Apprentice Plumbers, HVAC/Refrigeration, Third Semester
Last Reviewed: 5/13/2024

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	3.00	Lecture Scheduled	1.50	18	Lecture Scheduled	27.00
Minimum	3.00	Lab Scheduled	4.50	8	Lab Scheduled	81.00
		Contact DHR	0		Contact DHR	0
		Contact Total	6.00		Contact Total	108.00
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 54.00 Total Student Learning Hours: 162.00

Title 5 Category:	AA Degree Non-Applicable
Grading:	Grade Only
Repeatability:	00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:	
Formerly:	

Catalog Description:
Related supplemental instruction of heating, ventilation, air conditioning, and refrigeration for apprentice plumbers and pipefitters.

Prerequisites/Corequisites:

Recommended Preparation:

Limits on Enrollment:
Indentured apprentice.

Schedule of Classes Information:
Description: Related supplemental instruction of heating, ventilation, air conditioning, and refrigeration for apprentice plumbers and pipefitters. (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**	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/ plumbing principles and regulations related to heating, ventilation, air conditioning, and refrigeration trade.
2. Apply best practices in practical environment related to heating, ventilation, air conditioning, and refrigeration trade

Objectives:
At the conclusion of this course, the student should be able to:
1. Explain, summarize, and demonstrate basic principles of electricity.
2. Evaluate, identify, and have knowledge of common occupational hazards and demonstrate recommended safety practices for the refrigeration/air conditioning industry including Red Cross First Aid and C.P.R. certifications.
3. Explain, identify, and demonstrate testing and analyzing metering devices.

Topics and Scope:

I. Basic Electricity
   A. Introduction to DC electrical theory
   B. Components of DC electrical circuits
   C. Simple wiring diagrams
   D. Terms and definitions
   E. Simple electrical formulas and application
   F. Introduction to AC electricity
   G. Components of AC circuits
   H. Basic AC motor theory
   I. Use of tools for electrical circuits.
II. Safety Procedures
   A. Definitions
   B. Occupational safety and health provisions
   C. Hazards

D. Corrosives and irritants
E. Weather protection
F. First aid
G. Job site safety
H. Electrical

III. Metering Devices
A. Introduction to refrigerant controls
B. Principles of operations of metering devices
C. Care and maintenance of metering devices
D. Troubleshooting and repair

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

Assignment:

Lecture-Related Assignments:
1. Written homework assignments (1 to 2 sets per week)
2. Project homework assignments (1 to 2 sets per week)
3. Weekly reading 10-15 pages
4. Quizzes and examinations (4 to 6 per semester)

Lab-Related Assignments:
5. 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	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 to include multiple choice, true/false, matching items, and 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:
Job Safety & Health. International Pipe Trades Joint Training Committee. 2010 (classic)
Basic Electricity. International Pipe Trades Joint Training Committee. 2009 (classic)