APED 360 Course Outline as of Spring 2020

CATALOG INFORMATION

Dept and Nbr: APED 360 Title: APP PLUMBERS, HVAC, 1ST
Full Title: Apprentice Plumbers, HVAC/Refrigeration, First Semester
Last Reviewed: 5/14/2018

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	4.00	Lecture Scheduled	3.00	18	Lecture Scheduled	54.00
Minimum	4.00	Lab Scheduled	3.00	8	Lab Scheduled	54.00
		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: 108.00 Total Student Learning Hours: 216.00

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. Analyze and use trade-related mathematics related to HVAC systems and pipe fitting
2. Identify and explain testing devices, hand tools, equipment, and supplies for HVAC installation and service
3. Explain and demonstrate basic trade-related electricity
4. Explain and demonstrate rigging processes
5. Describe and demonstratre soldering/brazing techniques
6. Demonstrate the use of pipe fittings
7. Demonstrate fundamentals of customer service

Topics and Scope:

I. Basic mathematics related to plumbing, HVAC and refrigeration
   A. Introduction to use of basic mathematics in HVAC installation
   B. Simple formulas and application
II. Basic electricity related to plumbing, HVAC and refrigeration
   A. Basic electrical concepts
   B. Terms and definitions
   C. Wiring concepts for HVAC systems
III. Basic rigging
IV. Basic soldering and brazing
V. Basic pipefitting techniques for HVAC installation
VI. Tools of the pipe fitting and HVAC trades
VII. Safety and job health
   A. Introduction to work-based hazards

B. Practicing work-based health
C. Safety regulations

VIII. Introduction to customer service skills
A. Basic practices of good customer service
B. Instilling good customer service in each job

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 Assignment:
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	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:
Pipe, Fittings, Valves, Supports & Fasteners. International Pipe Trades Joint Training Committee. 2010 (classic)
Rigging. International Pipe Trades Joint Training Committee. 2009 (classic)
Soldering & Brazing. International Pipe Trades Joint Training Committee. 2009 (classic)
Related Mathematics. International Pipe Trades Joint Training Committee. 2009 (classic)
Use & Care of Tool. International Pipe Trades Joint Training Committee. 2009 (classic)