

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: 5/14/2018

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:

Upon completion of the course, students will 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:

Upon completion of this course, the students will 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)