

APED 366 Course Outline as of Spring 2020**CATALOG INFORMATION**

Dept and Nbr: APED 366 Title: APP PLUMBERS, HVAC, 7TH
 Full Title: Apprentice Plumbers, HVAC/Refrigeration, Seventh Semester
 Last Reviewed: 5/13/2024

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. Explain, demonstrate, and analyze chillers and compressors.
2. Define, demonstrate, measure, and assess loads.

Topics and Scope:

I. Chillers and Compressors

- A. Introduction to screw, centrifugal, and absorption systems
- B. Construction and components of reciprocating chillers
- C. Construction and components of centri-fugal compressors
- D. Compressor lubricating systems.
- E. Testing and troubleshooting compressor problems
- F. Compressor capacity control
- G. Compressor maintenance

II. Load Calculations

- A. Formulas and terminology related to load calculations
- B. Theory and demonstration of cooling systems relationships
- C. Theory of load calculations
- D. Practice of load calculations

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 Assignment:

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

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:

Hydraulic Heating & Cooling. International Pipe Trades Joint Training Committee. 2009 (classic)