

## UNIVERSITY OF ARKANSAS PULASKI TECH

### Course-Level Assessment Report Course: HVAC 1104 Academic Year: 2021-2022

Due to Chair/Program Director and Faculty Assessment Chair by September 1



1. Name of course:	HVAC 1104 Principles of HVAC/R I
2. Name of individual(s) compiling report:	Rrobert Dixon
3. Date of submission:	<u>9/1/2022</u>
4. Academic year:	<u>2021-2022</u>

### **Course-Level Learning Outcomes**

#### 1. What are the Course-Level Outcomes (CLOs)?

a. The student will demonstrate the requisite skills for success in a collegiate and trade environment, such as note taking, reading, memorization, and basic mathematics.
b. The student will demonstrate a basic understanding of the underlying principles and basic equipment needed to maintain their safety in a class, a laboratory, or on a commercial job site.

c. The student will recognize the individual parts of the basic process of mechanical refrigeration and identify the parameters of temperature and pressure indicative of the operation and condition of those parts.

d. The student will describe the protocols necessary to handle refrigerant in a safe and ecologically sound manner. so as not to endanger the student or the environment.

e. The student will describe the major procedures needed to ensure an efficient and mechanically sound installation in residences, and commercial buildings,

f. The student will apply the appropriate measures required to maintain upkeep of basic HVACR tools.

#### 2. Which CLOs were addressed for the academic year?

The curriculum taught in this class is designed to take into consideration all of the above Course level outcomes for any given semester. The culmination of the semester in this class is the EPA Refrigerant HANDLING Test given at the end of the semester to all students.

## 3. Which CLOs are being addressed in your assessment plan in the upcoming academic year?

The Federal Environmental Protection Agency requires that all students be tested, and to have passed their core and at least one other section of the test before they handle refrigerant bearing appliances covered in that section. The HVAC/R department here at UA-PTC requires that all students pass all four sections, every semester. This requires the learning objectives listed above.



- 4. How does this report connect or map to program-level or institutional-level outcomes?
  - 1. **Analyze information from credible sources**. The use of industry leaders in video demonstrations during class reinforce the lecture and student learning.
  - 2. **Appropriately apply a variety of technology tools within one's discipline**. There are a number of hand tools and powered tools required for installing and troubleshooting HVAC/R equipment. The student becomes familiar with these required tools and their proper use and maintenance.
  - 3. **Communicate effectively with diverse audiences in multiple contexts**: The students are required to go to the board and essentially teach their fellow students by demonstrating their level of learning.
  - 4. **Apply Critical thinking skills to achieve a desired goal**: The students understanding of the basic concepts that govern an HVAC/R system allow the students to look into a system and understand why it is, or is not working as it should.

# **For each Course Level Outcome assessed this academic year**, please complete the chart below, providing the assessment data for both fall and spring, and then a total for the academic year.

Assessment Methods- How did you assess student learning (define direct assessment methods used) in relation to the course level outcome being reported?	Students in both classes completed the E.P.A. 608 Refrigerant Handling Certification test, as a final exam. Curriculum was designed to supply the requisite knowledge needed to pass this federally required test	
Note: If more than one assessment method was used, you may insert an additional row.		
Were indirect assessment methods also used to assess students? If 'yes', please describe the method used.	Yes Students were required to go to the board and demonstrate their mastery of certain	No



	concepts important to the		
	HVACR industry.		
How do you define <b>success for an</b>	Student scores 70% or higher on the EPA 608		
individual student on the CLO	Refrigerant Handling Certification test. This gives		
assessment assignment or	them a national certification, required to practice		
measure?	their chosen trade.		
How do you define success <b>for the</b>	70% of students achieve Universal certification		
course level outcome? What is the	based on the requirements of the EPA 608		
benchmark for the Course Level	<b>Refrigerant Handling Certification Test</b>		
Outcome?			
How many students completed the	Fall 15 Students took the	Spring	
assessment, and how many were	test 12 out of 15 were	9 students have currently	
successful?	successful. 80% success	assessed at least once. 3	
	rate.	students assessed, and	
		have attained Universal	
		certification. 6 students	
		have three tries left to	
		attain certification.	
		Currently the success	
		<i>rate is 33%</i> .	
Academic Year Total (add the	24 students have assessed, 15 have achieved		
numbers from Fall and Spring)	"Universal" certification. 63% 9 students have		
	attempts left to achieve the goal .		
Was the benchmark/goal for this	Yes	no	
academic year met?			
Were standardized rubrics, tests,	Yes	Yes	
or checklists used?			

### 5. What is your analysis of the findings?

The "Final" EPA 608 test requires the student to demonstrate their mastery of all the CLO's listed. This certification is required because it is required of the industry by the Federal government to handle refrigerant safely and environmentally responsibly.



### 6. What is the action plan for the upcoming academic year?

#### Explain.

New emphasis will be placed on the class text, as it's information dovetails well with the EPA study guide. I will increase the time given to lecture concerning the study guide as well as use more time for student interaction and internal rehearsal of the subject matter.