

HVA 104 - INTRODUCTION TO HVAC/R II

Course Description

This course will introduce students to the HVAC field through exploring basic heating, ventilation, and air conditioning concepts and reinforce concepts and skills learned in previous courses. Concepts include alternating current, compressors, refrigerants and oils, leak detection, evacuation, recovery, and charging, metering devices, heat pumps and basic maintenance. Group 2 course.

Credit Hours

3

Contact Hours

4

Lecture Hours

2

Lab Hours

2

Required Prerequisites

HVA 101, may be taken concurrently.

Course Learning Outcomes

Knowledge:

- Explain the various types of induction motors and explain how they operate.
- Identify various refrigerant classifications and describe their environmental impact.
- Describe the equipment and approaches used to leak-test refrigerant circuits.

Application:

- Determine the type and function of various transformers used in HVAC systems.
- Calculate superheat and subcooling using pressure-temperature (PT) charts.
- Evaluate the equipment used to evacuate and recover refrigerant circuits.

Integration:

- Point out the components used in a functional AC power supply circuit and explain their functions.
- Use an acid/moisture test kit to test a refrigerant circuit.
- Install refrigerant gauges on a functional system and calculate superheat and subcooling using the appropriate PT chart.
- Use a recovery unit to recover the refrigerant from a system.
- Properly install, align, and adjust a drive belt.
- Perform an inspection and periodic maintenance on a gas furnace and document the inspection results on a checklist.

Human Dimension:

- Feel confident about your ability to successfully interact with a client.
- Collaborate with a multidisciplinary team to provide the best service for the end user.

Caring - Civic Learning:

- Commit to the safety and wellbeing of everyone on the job site and the end user.
- Value the importance of HVAC/R and how it impacts everyday life.

Learning How to Learn:

- Recognize when more information is needed and seek help and resources.
- Identify personal learning preferences with HVAC/R course content.