REFR2202 - Commercial Refrigeration and Air Conditioning Principles

Credits:	4 (4/0/0)
Description:	This course covers the principles of basic heat theory and gas laws as they apply to refrigeration systems. The operation of commercial walk-in coolers and freezers, commercial ice machines, air conditioners and heat pumps will be discussed, along with accessory components and piping methods used to install and maintain these systems. Safety is emphasized.
Prerequisites:	• Completion of HVAC/R diploma.
Corequisites:	
Pre/Corequisites*:	
Competencies:	1. Identify ways to safely remove high- and low-pressure manifold hoses. 2. Demonstrate the need for safety glasses when working with refrigerants. 3. Demonstrate how gas laws apply to a sealed refrigeration system. 4. Describe the use of personal safety equipment. 5. Define flash gas and its relationship to system efficiency. 6. Identify the correct solder, brazing rod and flux for joining different types of metals. 7. Describe the difference between recovering, recycling and reclaiming refrigerants. 8. Identify points in a refrigeration system where the refrigerant is saturated, superheated or subcooled. 9. Analyze methods of refrigeration piping to assure proper refrigerant flows and oil return. 10. Demonstrate use of saturation pressure charts in system analysis. 11. Demonstrate the difference between latent and sensible heat. 12. Contrast the difference between heat and temperature. 13. Evaluate methods of measuring superheat and subcooling. 14. Describe methods for adjusting superheat in an evaporator using a thermal expansion valve. 15. Contrast the difference between absolute and gauge pressure as it relates to the gas laws.
MnTC goal areas:	None

Can be taking as a Prerequisite or Corequisite.

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