Air Conditioning and Refrigeration - Student Learning Outcomes

ACR 101	Air Conditioning and Refrigeration Systems	1. Perform a standing pressure test on a vessel using dry nitrogen. (ILO1,ILO2,ILO3,ILO4,ILO5)
		2. Make connections with copper tubing using both low-temperature solder and high-temperature brazing material. (ILO1, ILO2, ILO3,ILO4)
		3. Perform a deep vacuum test using a high-quality vacuum pump and an electronic vacuum gage. (ILO1,ILO2,ILO3,IL04)
ACR 102	Residential Air Conditioning Systems	1. Take wet-bulb and dry-bulb temperature readings, determine relative humidity from the psychrometric chart, and use this information to determine the level of confort from the ASHREA generalized comfort chart. (ILO2, ILO3, ILO4, ILO5)
		2. To identify and describe various components in a typical air-conditioning system. (IL01, ILO2, IL03, ILO4, ILO5)
		3. Check out components of an air-conditioning system for an orderly system start-up, one component at a time, and check each one to insure that it is operating correctly. (ILO1,IL02,IL03,IL04)
ACR 103	Air Conditioning Electrical Circuits and Controls	1. Make current, voltage, and resistance readings. You will also determine the current, voltage, and resistance of a circuit using Ohm's Law.(IL02,IL03,IL04,IL05)
		2. Follow the circuit in a typical electric air-conditioning system and check the amperage in a low-voltage circuit.(IL02,IL03,IL05)
		3. Make voltage and amperage readings on actual operating equipment using a VOM. You will be able to do this under the supervision of your instructor.(IL02,IL03,IL04,IL05)
ACR 104	Air Conditioning Heating Systems	1. troubleshoot and electrical problem with the changing from cool to heat. (ILO1, ILO2, ILO3, ILO4)
		2. be familiar with the components in an electric heating system and will be able to list the specifications for these components. (ILO1, ILO2, ILO3, ILO4)
		3. identify and describe the typical components in an air-to-air heat pump system. (ILO1, ILO2, ILO3, ILO4)
ACR 105	Heat Load Calculation & Measurements	1. use a duct chart to evaluate the duct size on a simple residential or commercial duct system for adequate airflow in heating or cooling cycles. (ILO2,ILO3,IL04)
		2. use basic airflow measuring instruments to measure airflow from registers and grilles.(ILO2,ILO3,ILO4)
ACR 106	Air Conditioning Ventilation Duct Systems	1. cut and form a simple layout pattern for a galvanized sheet metal air conditioning square air duct.(ILO1, ILO2, ILO3, ILO4)
		2. cut and form a simple layout pattern for a galvanized sheet metal air conditioning S Offsets air duct.(ILO1, ILO2, ILO3, ILO4)
		3. cut and form a simple layout pattern for a galvanized sheet metal air conditioning Square-to-Rounds air duct.(ILO1, ILO2, ILO3, ILO4)