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**Student Syllabus**

**Course Title:** HVAC Technician Training  
**Course Code:** HART 1005  
**Course Length:** 120 hours

**Course Description:** Course designed for entry into the workforce with skills and knowledge for increased productivity in the commercial or residential markets. This course includes Residential, Commercial and Industrial refrigeration and Building Management Systems, trade mathematics, theory and troubleshooting.

**Learning Outcomes:** Given lecture, handouts and discussion, the student will be able to:

Define alternating current. Identify and demonstrate measuring equipment  
Explain troubleshooting for electronic and conventional thermostats and common electrical and pneumatic circuits.  
Explain troubleshooting of gas heating appliances, include isolating and correcting faults  
Explain troubleshooting cooling equipment; analyze system temperatures and pressures to isolate faults  
Explain the principles of reverse cycle heating; identify types of heat pumps  
Describe characteristics and application of refrigerants and oils used in HVAC  
Identify product refrigeration components and systems used in markets  
Explain troubleshooting and demonstrate analyzing circuit diagrams for electronic and microprocessor based controls in heating and cooling systems  
Define heat pump operation and control circuits, include isolating and correction of faults in heating, cooling, auxiliary heat and defrost functions  
Identify tools, instruments and methods in balancing an air distribution system  
Define and demonstrate heat recovery/reclaim devices and energy recovery equipment used to reduce energy consumption

**Pre-requisites:** HART 1038

**Course Structure:** Content: 120.0 hours  
Chimneys, Bents, Flues  
Leak Detection, Evacuation, Recovery and Charging  
Refrigerants/EPA  
Control Circuits  
Troubleshooting Gas Heat and Cooling  
Heat Pumps  
Installation and Energy Conservation  
Duct Systems

**Schedule:** Tri-Weekly 6:00 PM - 9:00 PM

**Evaluation:** Student Assessments, Passing 70%

**Books:** Handouts will be supplied

**Reference:** NCCER Core and HVAC Level 1- 4 Trainee Guides

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## Course Outline

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**Workforce Education**

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**Delivery Method:** Classroom / Lecture/ Lab  
Small group discussions

**Audience:** General

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