



HVAC Technician

The HVAC Technician

The HVAC Level 1 program is designed to prepare students to function as entry-level HVAC Technicians and assistants in residential and commercial environments. HVAC Technicians install, maintain and repair many different types of HVAC systems. The purpose of this program is to prepare students to perform entry-level HVAC maintenance and repair tasks.

The HVAC Technician Program

This course covers the following key areas and topics:

- Safety: Safety issues and practices, personal protective equipment, use of critical safety information
- Trade Math: Basic math, measuring and calculations related to general trades and HVAC systems
- Hand Tools: Identifying how to use various types of hand tools including measurement and cutting tools
- Power Tools: Identifying how to use various types of power tools
- Construction Drawings: Identifying and describing various types of construction drawings, including their fundamental components and features
- Basic Rigging: Identify and describe various types of rigging slings, hardware and equipment
- Basic Electricity: Power generation and distribution, electrical components, AC and DC circuits, and electrical safety
- Heating: Heating system fundamentals and the combustion process, types and designs of gas furnaces, basic heating installation and service
- Cooling: Refrigeration cycle fundamentals, HVACR system components, refrigerants, heat transfer principles, system control concepts
- Air Distribution: Air movement, measurement and system design
- Piping: Basic copper, plastic, and carbon piping practices, tubing, fittings, and joining techniques
- Human Relations and Communication: Excellent human relations, communications, and customer service skills

Education & Certification

- The HVAC Technician student should have or be pursuing a high school diploma or GED.
- In addition to facilitating entry-level HVAC positions, students will be prepared and qualified to sit for the United States Environmental Protection Agency (EPA) 608 Core and 608 Small Appliances (Type I) Certifications
- Students are eligible for an optional externship with a local employer after successful course completion

Detailed Program Objectives

- Applying principles of heating, ventilation, air conditioning, and refrigeration to the installation, maintenance and repair of HVACR systems
- Applying safety practices to HVACR installation, maintenance, and repair practices
- Knowledge of hand and power tools
- Ability to read construction drawings
- Describing trade licensing, certification, career paths, and responsibilities and characteristics available in the HVACR trade in residential, commercial and industrial areas
- Performing basic math and measuring tasks required in the HVAC trade
- Applying knowledge of electricity and electrical safety to HVACR installation, maintenance and repair
- Applying knowledge of heating, cooling, and air distribution systems and individual components to the HVACR installation, maintenance and repair
- Applying knowledge of different types of copper, plastic, and carbon steel piping in HVACR tasks
- Preparing, soldering, and brazing copper tubing safely
- Measuring, cutting, reaming, threading, installing, and joining steep pipe in HVACR projects