

# HVAC Maintenance Technology



For additional information contact:  
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**AC/C TECH**  
 4415 Forest Manor Ave  
 Indianapolis, IN 46226-3080

Check our website for course schedules  
**[www.acctech.us](http://www.acctech.us)**

## Program Design

The HVAC Maintenance Technology program, which is 100% web-based, is designed to help students develop advanced technical skills and competencies related to the installation, repair, and maintenance of residential heating and air conditioning equipment. Students will learn details about HVAC equipment, with an emphasis on making repairs in a safe, efficient, and productive manner. Students will learn WHAT failed, WHY it failed, and HOW the failure can be prevented. Understanding these principles (WHAT, WHY and HOW) will increase worker productivity and reduce overall maintenance/capital expenditures. More specifically, students will develop skills in recognizing the components, testing the components, interpreting the schematic wiring diagram, tracing the sequence of operation, cleaning the equipment, performing annual maintenance, and tweaking settings for optimum efficiency.

Graduates will be awarded a Technical Certificate in HVAC Maintenance Technology, and, EPA Technician Certification as approved by the United States Environmental Protection Agency.

| Course  | Date                | Day       | Time      | Location |
|---|---------------------|-----------|-----------|----------|
| 1. GEN101 - Basic Electricity ( <b>Prerequisite</b> )     | TBD - Check Website | On-Demand | On-Demand | Online   |
| 2. HEA101 - Electric Furnace Maintenance                  | TBD - Check Website | On-Demand | On-Demand | Online   |
| 3. HEA102 - Gas Furnace Maintenance                       | TBD - Check Website | On-Demand | On-Demand | Online   |
| 4. HEA103 - EPA Technician Certification                  | TBD - Check Website | On-Demand | On-Demand | Online   |
| 5. HEA104 - Air Conditioning Maintenance                  | TBD - Check Website | On-Demand | On-Demand | Online   |
| 6. HEA105 - Heat Pump Maintenance                         | TBD - Check Website | On-Demand | On-Demand | Online   |
| Cost: \$250/Course or \$1500 to attend the entire program |                     |           |           |          |

**This institution is authorized by:**  
 The Indiana Commission for Higher Education/  
 The Indiana Board for Proprietary Education  
 101 West Ohio Street, Suite 670  
 Indianapolis, IN 46204-1984  
 (317)464-4400 Ext.138 or (317)464-4400

# AC/C TECH

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# Course Descriptions - HVAC Maintenance Technology

## GEN101 - Basic Electricity (Prerequisite)

This course develops skills in understanding electrical fundamentals as a prerequisite for diagnosing and repairing major appliances, heating and cooling equipment, swimming pool pumps and motors, and defective circuits in a home or apartment. Specifically, the students will learn electrical theory, electrical terminology, ohms law, and electrical formulas. From a practical standpoint, students will learn how electricity is produced and distributed from the utility company, the demand for electricity in a home or apartment, how to diagnose failures using a volt-ohm meter, how to interpret diagrams and schematic, plus more.

## HEA101 - Electric Furnace Maintenance

This course develops skills in servicing electric furnaces. Students will learn electric heating principles; how to interpret the schematic wiring diagram; how to trace the sequence of operation; and how to test and evaluate the heating elements, fusible links, limit switches, sequencer, and more. Also, the students will learn how to make repairs in no heat situations, and more importantly, how to make those repairs in safe, efficient and productive manners.

## HEA102 - Gas Furnace Maintenance

This course develops skills in servicing gas furnaces. The students will learn to recognize the components, interpret the schematic wiring diagram; trace the sequence of operation; replace defective parts; and adjust the furnace for optimum efficiency. Also, the students will learn to make repairs in no heat situations, clean the furnace, check for gas leaks, check for carbon monoxide leaks and verify that a furnace is safe to operate.

## HEA103 - EPA Technician Certification

The primary objective of this course is to prepare students for the EPA Technician Certification exam. It does not require a highly skilled service technician to pass the exam, but some background and experience will be helpful. The students will learn the potential of releasing CFC's and HCFC's into the environment, and information that will encourage them to comply with the Refrigerant Recycling Rule, which is section 608 of the Clean Air Act 1990, as amended CAA.

## HEA104 - Air Conditioning Maintenance

This course develops skills in servicing air conditioners. Students will learn how to diagnose the electrical system, the refrigeration system, and the mechanical devices. Specifically, they will develop skills in recovery and evacuation, leak testing, troubleshooting the compressor for mechanical or electrical problems, charging and/or recharging the system, adjusting the unit for optimum efficiency, and making repairs in safe, efficient and productive manners.

## HEA105 - Heat Pump Maintenance

This course studies the basic approach to servicing heat pumps. The students will learn principles of a reverse-cycle heat pump; identify and test the components; determine if the unit is heating or cooling by measuring line temperatures; adjust auxiliary heat; and various techniques that will improve the efficiency of a unit. In addition, the students will gain exposure to causes of failures, preventive maintenance techniques, safety information, tools, testing equipment, and most importantly, how to make all repairs in safe, efficient, and productive manners.

| Tuition and Fees   |                     |
|--|---------------------|
| <b>Tuition</b><br>6 Courses @ \$250 Each   | \$1,500.00          |
| <b>Required Books</b><br>Refrigeration & Air Conditioning Technology 8 <sup>th</sup> Edition<br>By Whitman, Johnson and Tomczyk ISBN13: 978-130-557-8296<br>Preparation for the EPA Technician Certification   | \$148.75<br>\$15.00 |
| <b>Required General Tools</b><br>Plastic Tool Box with Lock, 25 Ft. Tape Measure, 16 oz Hammer, Utility (Box) Knife, 15" Utility Bar, Phillips & Standard Screw Driver Set, 6 in 1 Screw Driver, 12" Adjustable Wrench, 12" Channel Locks, 10" Slip Joint Pliers, 10" Vise Grips, Torpedo Level, 8@ Needle Nose Pliers, 8@ Lineman Pliers, Wire Strippers, Wire Rippers & Gauge, GFI Receptacle Tester, 6" Drywall Taping Knife, and Hand Sander or Sanding block. | \$218.43            |
| <b>Required Specialty Tools</b><br>VOM Meter - fused protected, [2] Pock Thermometers Range -10°F to 205°F, Manifold, Pressure Gauge Set, Refrigeration Service Wrench - ¼, Telescopic Inspection Mirror, and Furnace Brush.   | \$210.12            |
| <b>Required Safety Equipment</b><br>Cloth Gloves, Eye Protection and Dust Masks  | \$10.52             |
| <b>Uniforms – Recommended</b>  | \$160.00            |
| <b>Total Cost</b> .....  | \$2,262.82          |