



# National Craft Assessment and Certification Program S P E C I F I C A T I O N S

## HVAC Technician (HVAC03\_02)

Released 2009.

### Overview

This knowledge assessment is a two-hour closed-book examination. You will be permitted to use a basic function, non-printing calculator during the examination. No extra papers, books, notes or study material are allowed in the testing area.

### NCCER Curriculum

All NCCER knowledge assessments are referenced to NCCER's curriculum modules as listed on this specification sheet. You may order modules from Pearson (800.922.0579) or from NCCER's Online Catalog at [www.nccer.org](http://www.nccer.org).

### Assessment Development

All questions are developed and approved by subject matter experts under the direction of NCCER.

### Credentials

Upon successful completion of the knowledge assessment, NCCER will send applicable credentials to the assessment center.

### Score Report and Training Prescription

Each candidate will have access to their assessment results including their overall score and recommended training.

### NCCER Registry

Knowledge assessment results are recorded in NCCER's Registry and become a part of the portable record of an individual's NCCER credentials.

### Focus Statement

A journey level HVAC technician is able to work independently to do the following:

- Install residential, commercial, and industrial HVAC systems and their components.
- Use and apply trade math to daily applications.
- Interpret mechanical drawings, symbols and their application.
- Soldering, brazing, and piping practices.
- Apply and install venting for fossil fuel appliances.
- Apply and install gas fired-heating equipment.
- Understand furnace design and functions.
- Understand commercial airside and hydronic systems including various types of boilers, piping, chilled-water systems and their components.
- Measurement and control of air temperature, humidity, pressure, and velocity.
- Maintenance and repairs of diverse HVAC systems.
- Troubleshoot heating, cooling, and heat pump systems.
- Troubleshoot control circuits, electronic controls, and accessories.
- Troubleshoot air quality and energy conservation equipment.
- Refrigerant leak detection, evacuation, recovery, and charging.

### Knowledge Assessment Contents:

Module Number	Module Name	Number of Questions
00101-04 00106-04	Core Curricula: <i>Introductory Craft Skills</i>	4
03102-07	Trade Math	4
03104-07	Soldering and Brazing	4
03105-07	Ferrous Metal Piping Practices	4
03107-07	Intro to Cooling	6
03108-07	Intro to Heating	5
03109-07	Air Distribution Systems	4
03201-07	Commercial Airside Systems	5
03202-07	Chimneys, Vents, Flues	4
03205-07	Leak Detection, Evacuation, Recovery, and Charging	5
03206-07	Alternating Current	4
03208-07	Intro to Control Circuit Troubleshooting	6
03209-07	Troubleshooting Gas Heating	4
03210-07	Troubleshooting Cooling	6
03212-07	Basic Installation and Maintenance Practices	5
03301-08	Refrigerants and Oils	4
03302-08	Compressors	4
03303-08	Metering Devices	4
03305-08	Commercial Hydronic Systems	4
03307-08	Planned Maintenance	5
03309-08	Troubleshooting Electronic Controls	4
03311-08	Troubleshooting Heat Pumps	5
03312-08	Troubleshooting Accessories	4
03401-09	Construction Drawings and Specifications	6
03402-09	System Balancing	4
03403-08	Indoor Air Quality	4
03406-09	System Startup and Shutdown	5
03407-09	Heating and Cooling System Design	4
03408-09	Commercial and Industrial Refrigeration Systems	4
<b>Total Number of Questions</b>		<b>131</b>

*The minimum passing score is 70.*

*A corresponding hands-on Performance Verification is available.*