



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

## HVAC Technician (HVAC3\_02)

Released 2009.

### Overview

This written assessment is a two-hour closed-book examination. You will be permitted to use a basic function, non-printing calculator during the examination. The assessment center will provide any necessary pencils. No extra papers, books, notes or study materials are allowed in the testing area.

### Study Material

All NCCER written assessments are referenced to NCCER's curriculum listed in the content. 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 on each assessment have been developed and approved by subject matter experts from the respective craft. Assessment development and administration is under the direction of Prov<sup>TM</sup>, NCCER's testing partner.

### Credentials

NCCER will send appropriate credentials (certificate, wallet card and official transcript) to the assessment center upon successful completion of the written assessment.

### Training Prescription Reports

Each candidate will have access to individual results of the written assessment from Prov's website ([www.provexam.com](http://www.provexam.com)). This training prescription will include the overall score and results by topic area.

### National Registry

Assessment results will be maintained in NCCER's National Registry and become a part of each candidate's training records. These records are stored and become a portable record of the candidate's training and assessment achievements.

### 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.

### Written 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 Performance Verification is available at [nccer.org](http://nccer.org).