

PHCC Academy™ HVAC 301 Syllabus



Course Contact for Registration and Non-LMS Questions

State Chapter Partner

Refer to <http://foundation.phccweb.org> and search for PHCC Academy page for listing

Course Contact for Technical Problems in Absorb LMS

PHCC Academy™ Staff

academy@naphcc.org

Prerequisites

HVAC 101 and 201 or equivalent

Welcome to the PHCC Academy™ Online Apprenticeship-Related Instruction Program!

This program is designed to provide students who cannot attend classes in a traditional apprentice program with the same opportunity to learn the textbook fundamentals of the trade. This training course must be supplemented by your employer, through both technical assistance and on-the-job training in each area of instruction in the book.

Course Goals

- To provide a more in-depth understanding of servicing and troubleshooting HVACR systems
- To familiarize students with testing, adjusting and balancing techniques
- To introduce students to cooling towers and evaporative condensers
- To provide familiarize students with commercial air conditioning and refrigeration systems
- To introduce students to concepts of indoor air quality

Student Responsibilities

- Complete work in a timely manner.
- Read all information and assignments within the learning management system before starting the course.
- Complete all tests in this course as closed-book. Students are on the honor system.
- Complete all assignments with a passing grade of 70 percent or higher.
- Complete the course in 1 year (12 months) or request a 6-month extension before the course expiration date.
- Maintain records of on-the-job training completed.

Employer Responsibilities

- Ensure that all students enrolled are proficient in reading and writing in English at a high school level and possess the self-motivation to complete internet-based coursework.
- Register apprentices with the U.S. Department of Labor, either through your own apprenticeship program or through your PHCC State Chapter Partner's registered apprenticeship program.

- Track the apprentice's on-the-job training hours and document such hours. Documentation records must be maintained by the employer for the duration of the apprentice's employment and must be retained as required by the U.S. Department of Labor.
- Ensure that apprentices are paid a progressively increasing schedule of wages and fringe benefits based on a percentage of the current journey worker wage rate as specified in the Standards of Apprenticeship for the program under which the apprentice is participating.

State Chapter Partner Responsibilities

- Register and enroll students in the appropriate courses on the learning management system.
- Assist students with ordering textbooks for their courses.
- Act as the primary point of contact for students and employers who register for courses in their state.
- Serve as the liaison between the PHCC Academy and employers of apprentices enrolled in the program in their state.

PHCC Academy Responsibilities

- Ensure that the federal Department of Labor approval for the apprenticeship program is kept current and is updated as needed.
- Administer the learning management system and course offerings for the eLearning program. This includes developing course content and placing it into the learning management system.
- Provide students with learning management system usernames and passwords.
- Provide all administrative functions on the learning management system.
- Coordinate any Advanced Placement Testing with PHCC State Chapter Partners.
- Provide a completion letter and certificate to students upon successful completion of each course.

Required Textbook (Purchased Separately)

Hohman, John (2010). HVACR 301, 1st ed. Clifton Park, NY: Delmar, Cengage Learning.

Assignments

Unit 1 – Servicing and Troubleshooting Systems and TAB

Read Chapter 1 in the HVACR 301 textbook.

Video – Radiant Floor Heating Systems

Video – Heat Recovery Devices

Chapter 1 Review PowerPoint

Read Chapter 2 in the HVACR 301 textbook.

Video – How to Read a Pump Curve

Video – Performing a Duct Traverse

Chapter 2 Review PowerPoint

Unit 1 Exam

Unit 2 – Energy-Efficient Mechanical Systems and Fluid Handling Systems

Read Chapter 3 in the HVACR 301 textbook.

Video – Using a Combustion Analyzer on a High-Efficiency Furnace

Chapter 3 Review PowerPoint

Read Chapter 4 in the HVACR 301 textbook.

Video – Anatomy of a Circulator

Chapter 4 Review PowerPoint
Energy-Efficient Mechanical Systems and Fluid Handling Systems Review Game
Unit 2 Exam

Unit 3 – Applied Electrical Problem Solving
Read Chapter 5 in the HVACR 301 textbook.
Video – Arc Flash Safety
Video – Hard Start Kit
Video – Variable Frequency Drive Basics
Chapter 5 Review PowerPoint
Unit 3 Exam

Unit 4 – Applied Refrigeration System Problem Solving
Read Chapter 6 in the HVACR 301 textbook.
Video – Nitrogen Purging
Video – Why You Should Replace Filter-Driers
Video – Evacuation Part 1
Video – Evacuation Part 2
Chapter 6 Review PowerPoint
Unit 4 Exam

Unit 5 – Troubleshooting with the Psychrometric Chart
Read Chapter 7 in the HVACR 301 textbook.
Video – Reading a Psychrometric Chart
Drawing Assignment Assessment
Chapter 7 Review PowerPoint
Unit 5 Exam

Unit 6 – Cooling Towers and Evaporative Condensers
Read Chapter 8 in the HVACR 301 textbook.
Video – How It's Made: Evaporative Cooling Tower
Chapter 8 Review PowerPoint
Unit 6 Exam

Unit 7 – Commercial Air Conditioning and Refrigeration Systems
Read Chapter 9 in the HVACR 301 textbook.
Video – Chiller Basics
Chapter 9 Review PowerPoint
Unit 7 Exam

Unit 8 – Water Treatment and Indoor Air Quality
Read Chapter 10 in the HVACR 301 textbook.
Video – Legionella
Chapter 10 Review PowerPoint
Read Chapter 11 in the HVACR 301 textbook.
Video – Sick Building Syndrome
Chapter 11 Review PowerPoint
Water Treatment and IAQ Review Game

Unit 8 Exam

Final Exam

Course Evaluation