

PHCC Academy®

HVACR 401 Syllabus

Course Contact for Registration and Non-LMS Questions

State Chapter Partner

Refer to <https://phccacademy.org/state-chapter-partner-contacts/>

Course Contact for Technical Problems in Absorb LMS

PHCC Academy® Staff - AcademySupport@naphcc.org

Prerequisites

HVACR 101, 201, 301, or equivalent

Welcome to the PHCC Academy® Online Apprenticeship-Related Technical Instruction program for HVACR 401!

The PHCC Educational Foundation's HVACR program is designed to provide students with the opportunity to learn the textbook fundamentals of the HVACR trade in a self-paced online format. This training course must be supplemented by employers, through both technical assistance and on-the-job training in each area of instruction to meet the apprenticeship training requirements.

HVACR 401 covers topics centered around heat pump systems, including heat pump components; types and sizing; energy and efficiency; and installation, maintenance, and troubleshooting of both air source and geothermal heat pumps.

Course Goals

- Provide students with foundational knowledge about heat pump operation, components, and installation fundamentals
- Provide students with knowledge about energy and efficiency as related to equipment and structural factors
- Prepare students to install, service, and troubleshoot air-source and geothermal heat pumps

Required Textbook (Purchased Separately)

Refrigeration and Air Conditioner Technology (RACT), 9th Edition. Copyright 2021.

Assignments

The HVACR 401 course is comprised of 21 modules including a course introduction and 20 learning content modules with supplementary resources, as well as 20 module assessments and a comprehensive final exam.

In each module you will be required to do the following:

- Read Chapter
- Watch Lesson
- Take Exam

Module Titles:

- Module 1 - The Heat Pump Cycle
- Module 2 - Absorbing & Rejecting Heat
- Module 3 - Thermostats & Components
- Module 4 - Motors
- Module 5 - Compressors
- Module 6 - Specific Defrost
- Module 7 - Electrical Schematics
- Module 8 - Typical Heat Pump Systems
- Module 9 - Reviewing Energy & Efficiency Calculations
- Module 10 - Introduction to Residential Energy Auditing
- Module 11 - Auditing Gas-Fueled Systems
- Module 12 - Heat Gains & Losses
- Module 13 - Air Source Heat Pumps
- Module 14 - Installation of ASHPs
- Module 15 - Scheduled Maintenance of ASHPs
- Module 16 - Troubleshooting ASHPs
- Module 17 - Geothermal Heat Pumps
- Module 18 - Installation of GHPs
- Module 19 - Scheduled Maintenance for GHPs
- Module 20 - Troubleshooting GHPs
- Comprehensive Final Exam