



# Distributed Digital Control in Air Conditioning

Certificate (51 SCH\*)

\*Semester Credit Hour

7/2023

## First Semester - 12 SCH

HART 1301 - Basic Electricity for HVAC  
HART 1303 - Air Conditioning Control Principles  
HART 1307 - Refrigeration Principles  
HART 1310 - HVAC Shop Practices and Tools

## Second Semester - 12 SCH

HART 1341 - Residential Air Conditioning  
HART 1345 - Gas and Electric Heating  
HART 2349 - Heat Pumps  
HART 2338 - Air Conditioning Installation & Startup

## Third Semester - 12 SCH

HART 2331 - Advanced Electricity for HVAC  
HART 2336 - Air Conditioning Troubleshooting  
HART 2345 - Residential Air Conditioning Systems  
Design  
HART 1351 - Energy Management

## Fourth Semester - 15 SCH

HART 1356 - EPA Recovery Certification Preparation  
HART 2341 - Commercial Air Conditioning  
HART 2334 - Advanced Air Conditioning Controls  
HART 2343 - Industrial Air Conditioning  
HART 2350 - HVAC Zone Controls

## Marketable Skills

- Modify, maintain, or repair electronics equipment or systems to ensure proper functioning.
- Replace defective components or parts, using hand tools and precision instruments.
- Set up and operate specialized or standard test equipment to diagnose, test, or analyze the performance of electronic components, assemblies, or systems.
- Read blueprints, wiring diagrams, schematic drawings, or engineering instructions for assembling electronics units, applying knowledge of electronic theory and components.
- Identify and resolve equipment malfunctions, working with manufacturers or field representatives as necessary to procure replacement parts.
- EPA recovery and certification.
- HVAC and Refrigeration controls.
- Installation, programming, service, and troubleshooting of Distributed Digital Control Systems.
- Heat load calculation and duct design.

## Program Outcomes

- Install, troubleshoot and repair refrigerators, freezers, and window air conditioners.
- Install, troubleshoot and repair split or package residential air conditioning systems, including electric furnaces, gas furnaces and heat pumps.
- Install, troubleshoot and repair split and package commercial air conditioning and refrigeration systems.
- Install, program, troubleshoot and repair residential, commercial and industrial Distributed Digital Control Systems.
- Become certified to handle CFC's, HCFC's, and HFC's.

## High School Endorsements

Business and Industry

## Additional Educational Opportunities

Associate of Applied Science in Air Conditioning

## Expected Salary

**Texas wage data:** workers on average earn \$69,310; 10% of workers earn \$41,680 or less; 10% of workers earn \$99,200 or more.

## Career Opportunities

Consulting; Controls Technician; Customer Service; Dispatcher/ Coordinator; Distributor; Distributor Counter Sales; Energy Auditor; Equipment Performance Testing Specialist; Estimator; Field Technical Specialist; Field Supervisor; HVAC Equipment Dealer; IAQ Inspector; Inside Sales and Outside Sales; Installer; Product Technical Support; Project Manager; Public Relations; Purchasing; Sheet Metal Fabrication; Parts Store Manager; Technical Training Instructor; Shop Maintenance; Service Technician; Contractor.