



## HVAC and Refrigeration - Commercial

Level 1 Certificate

Manufacturing, Logistics, & Transportation Pathway

AC Course Number	Required Course Titles	Credit Hours	Semesters Offered	Course Modalities
<b>FIRST YEAR</b>				
<b>First Semester</b>				
<input type="checkbox"/> HART 1401	Basic Electricity for HVAC	4	F	F2F
<input type="checkbox"/> HART 1407	Refrigeration Principles	4	F	F2F
<input type="checkbox"/> HART 1441	Residential Air Conditioning	4	F	F2F
<input type="checkbox"/> HART 1445	Gas and Electric Heating	4	F	F2F
<b>Second Semester</b>				
<input type="checkbox"/> HART 2336	Air Conditioning Troubleshooting	3	Sp	F2F
<input type="checkbox"/> HART 2441	Commercial Air Conditioning	4	Sp	F2F
<input type="checkbox"/> HART 2334	Advanced Air Conditioning Controls	3	Sp	F2F
<input type="checkbox"/> HART 2442	Commercial Refrigeration	4	Sp	F2F
<input type="checkbox"/> HART 1256	EPC Recovery Certification Program	2	Sp	F2F
<b>TOTAL CREDIT HOURS</b>		32		

Semesters: Fall (F), Winter (W)Spring (Sp), Summer (Su)

Modalities: Face-to-face (F2F), Internet/online (Int), Hybrid (Hyb)



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### Transfer Opportunities

Terminal Certificate that leads to employment.

### Marketable Skills

- 1) Work well on a team
- 2) Define, explain and interpret technical information
- 3) Use critical thinking to identify strengths and weakness to determine solutions
- 4) Identify appropriate information sources
- 5) Use math to answer questions
- 6) Schedule/coordinate Operations
- 7) Use current technology to diagnose and solve problems
- 8) Use Troubleshooting to determine causes and decide what to do about it
- 9) Think on your feet

### Career Opportunities and Salaries

HVAC-R System Diagnostics - \$20.51/hour  
 HVAC-R Service Technician - \$20.51/hour  
 HVAC-R Installation Technician - \$48,000  
 HVAC-R Restaurant and Commercial Appliance Service Technician - \$48,149  
 Advanced building controls Technician - \$22.31/hour

### Technical Skills

**Repairing** — Repairing machines or systems using the needed tools.

**Equipment Maintenance** — performing routine maintenance on equipment and determining when and what kind of maintenance is needed.

**Operation Monitoring** — watching gauges, dials, or other indicators to make sure a machine is working properly.

**Troubleshooting** — determining causes of operating errors and deciding what to do about it.

**Installation** — Installing equipment, machines, wiring, or programs to meet specifications.

Semesters: Fall (F), Winter (W)Spring (Sp), Summer (Su)

Modalities: Face-to-face (F2F), Internet/online (Int), Hybrid (Hyb)