

HEATING, VENTILATION, AIR CONDITIONING, REFRIGERATION, CERTIFICATE OF PROFICIENCY (HVCR)

Effective Spring 2025

Note: This program will now be offered as a Certificate of Proficiency (30 credits.)

The Heating, Ventilation, Air Conditioning and Refrigeration (HVAC&R) occupations program prepares graduates for employment with HVAC&R installation and service contractors and/or facilities maintenance positions. Students completing the program also receive EPA Refrigerant Certification. Having achieved the competencies of this program, students are prepared for full-time employment at an entry-level position or, if already in the fields, to advance in their organization.

Program Outcomes

Upon successful completion of this program, students should be able to:

- Demonstrate knowledge of the principles, properties and functions of residential and light commercial HVACR components and systems.
- Use appropriate tools and materials to size, install, service and/or repair HVACR equipment and systems.
- Interpret and use pressure and vacuum charts, blueprints and wiring diagrams for HVACR systems.
- Troubleshoot and diagnose malfunctions in HVACR systems.
- Use computational skills to solve problems in electrical, heating, air conditioning and refrigeration systems.
- Employ occupational health and safety principles and practices.

Full-Time Academic Plan

The College will award a certificate of proficiency to students who complete 30 credits of an approved career program. These credits will not normally include physical education, developmental, basic and/or continuing education courses and will usually consist of 24 credits in the career specialty and six credits in general education. At least 50 percent of the credits must be earned at Delaware County Community College. The student must have a cumulative GPA of 2.0 or higher. At least six credit hours must be in courses that are awarded grade points.

The full-time schedule below is an example and may vary from student to student. Students with advising questions should speak to the Director of Technical Education at 610-325-2819.

First Semester		Hours
HVA 100	Introduction to Heating, Ventilating, Air Conditioning and Refrigeration Electrical Fabrication	2
HVA 101	Introduction to Refrigeration and Air Conditioning	2
HVA 103	Advanced Refrigeration and Air Conditioning	2
HVA 104	Practical Problems in Mathematics for HVAC&R Technicians	3
HVA 200	Advanced HVAC&R Electrical Fabrication	2
HVA 201	Refrigerant Certification	3
Hours		14

Second Semester

HVA 106	Basic Piping for Contractors	2
HVA 109	HVAC Troubleshooting	3
HVA 205	Oil and Gas Burner Service	3
HVA 203	Heat Pump Systems	3
TCS 100	Construction Blueprint Reading	3
TCS 105	Workplace Safety	2
Hours		16
Total Hours		30

Part-Time Academic Plan

Part-Time Evening Schedule

Certain HVA specific courses in the Heating, Ventilation, Air Conditioning, and Refrigeration, Certificate program rotate depending on the semester a student begins. Students who do not begin in a Fall semester when HVA 100 and HVA 200 are being offered should start with one or two classes from the list of "any semester" courses. Students with some HVA experience may also seek approval to begin with HVA 101 and HVA 103 by permission of the program director.

Students with advising questions should speak to the Director of Technical Education @ 610-325-2819.

Code	Title	Hours
First Semester		
<i>Offered Fall Only</i>		
HVA 100	Introduction to Heating, Ventilating, Air Conditioning and Refrigeration Electrical Fabrication	2
HVA 200	Advanced HVAC&R Electrical Fabrication	2
Second Semester		
<i>Offered Spring Only</i>		
HVA 101	Introduction to Refrigeration and Air Conditioning	2
HVA 103	Advanced Refrigeration and Air Conditioning	2
Third Semester		
HVA 201	Refrigerant Certification	3
Any Semester Course *		
Fourth Semester		
HVA 205	Oil and Gas Burner Service	3
Any Semester Course *		
Fifth Semester		
HVA 203	Heat Pump Systems	3
Any Semester Course *		
Sixth Semester		
Any Semester Course *		
Any Semester Course *		
Any Semester *		
HVA 104	Practical Problems in Mathematics for HVAC&R Technicians	3
HVA 106	Basic Piping for Contractors	2
HVA 109	HVAC Troubleshooting	3
TCS 100	Construction Blueprint Reading	3
TCS 105	Workplace Safety	2
Total Hours		30

* *Any Semester Course* may be taken in any order.

Career Certificate of Competency (HVA)

Note: *This program is no longer accepting applications for Certificate of Competency (24 credits.) Now offered as Certificate of Proficiency.*

The College will award a certificate of competency to students who complete an approved credit-bearing career program that requires less than 30 credits. General education courses may not be required for programs that have less than 30 credits. The student must have a cumulative GPA of 2.0 or higher. At least six credit hours must be in courses that are awarded grade points.

First Semester		Hours
HVA 100	Introduction to Heating, Ventilating, Air Conditioning and Refrigeration Electrical Fabrication	2
HVA 101	Introduction to Refrigeration and Air Conditioning	2
HVA 103	Advanced Refrigeration and Air Conditioning	2
HVA 104	Practical Problems in Mathematics for HVAC&R Technicians	3
HVA 200	Advanced HVAC&R Electrical Fabrication	2
HVA 201	Refrigerant Certification	3
Hours		14
Second Semester		
HVA 106	Basic Piping for Contractors	2
HVA 203	Heat Pump Systems	3
HVA 205	Oil and Gas Burner Service	3
TCS 100	Construction Blueprint Reading	3
Hours		11
Total Hours		25