

## HEATING, VENTILATION AND AIR CONDITIONING/REFRIGERATION – HVAC/R, Certificate - 4280

Engineering, Trades & Computer Technologies Department  
CIP Code: 47.0201

The Heating, Ventilation and Air-Conditioning/Refrigeration (HVAC/R) certificate provides students with the necessary theory and hands-on skills needed to identify, design, and install heating, ventilation and air condition (HVAC) systems – at the entry level – for residential and commercial buildings. This certificate may be completed at the Harrisburg Campus through on-campus/in-person instruction.

### Career Opportunities

Graduates find employment as HVAC service technicians, equipment installers, or HVAC maintenance technicians.

**(SOC Code: 49-9021 Heating, A/C and Refrigeration Mechanics and Installers)**

### Competency Profile

This curriculum is designed to prepare students to:

- Install, maintain and troubleshoot HVAC and refrigeration systems
- Communicate effectively with customer service issues
- Outline federal laws and obtain Environmental Protection Agency (EPA) and R-410A refrigerant certification
- Install and service air flow systems and HVAC systems for residential dwellings
- Calculate and design HVAC system size and system air flow devices

### PROGRAM REQUIREMENTS (TOTAL CREDITS = 31)

General Education	Major Requirements		Other Required Courses	
	HVAC 100 EPA Refrigerant Handling,	1	GTEC 105 Customer Service	1
	HVAC 101 Basic Electrical Fundamentals	4	HVAC Program Elective*	<u>1</u>
	HVAC 102 R-410 Safety & Handling	1		<b>2</b>
	HVAC 103 Fundamentals of Air Conditioning I	4		
	HVAC 105 Fundamentals of Air Conditioning II	4		
	HVAC 107 Fundamentals of Low & Medium Temperature Refrigeration	4		
	HVAC 109 Heating Systems	4		
	HVAC 110 Fundamentals of Air Conditioning & Heating System Design	3		
	HVAC 200 Control Systems	<u>4</u>		
		<b>29</b>		

\*Students are to select from the following courses: ELEC 100 (1-credit); ELOC; HVAC; GTEC 101 (3-credits).

### RECOMMENDED SEQUENCE FOR FULL-TIME STUDENTS

Part time students can complete this program by taking one or more courses each semester.

Fall Semester I		Spring Semester I	
GTEC 105	1	HVAC 100	1
HVAC 101	4	HVAC 102	1
HVAC 103	4	HVAC 105	4
HVAC 109	4	HVAC 107	4
HVAC Program Elective*	1	HVAC 110	3
		HVAC 200	4