

**HEATING, VENTILATION, AIR CONDITIONING**

This program of study emphasizes the skills needed for employment in the heating, ventilation, air conditioning and refrigeration industry.

- **Technical Certificate Option** – The Technical Certificate in Heating, Ventilation, and Air Conditioning, is a two semester program that contains technical and advanced technical courses.
- **Associate of Applied Science Degree Option**- The Associate of Applied Science degree, with a major in Heating, Ventilation, and Air Conditioning, is a four semester program that contains technical, advanced technical and general education courses.

**Admission Criteria:** Placement test and pre-admission advising.

**Technical Education Courses**

Fall Semester			Spring Semester		
Course Title	Credits		Course Title	Credits	
ENV 102	Safety Orientation (OSHA 10)	1	HVA 154	Gas Heating	4
HVA 104	Electrical Fundamentals	4	HVA 159	A/C, Heat Pumps, Electric Heat	4
HVA 109	Controls and Motors	2	HVA 164	RTU Heating and A/C	1
HVA 114	Heating Systems Fundamentals	3	HVA 169	Commercial Refrigeration, Evaporators, Recovery, Condensers	2
HVA 119	HVAC Fundamentals	4	HVA 174	EPA 608	1
HVA 124	Compressor and Refrigeration Controls	2	HVA 179	Commercial Refrigeration Compressors, Metering Devices and Controls	2
HVA 129	Sheet Metal Layout and Fabrication	1	HVA 184	Workplace Skills	1
HVA 134	Refrigeration Fundamentals	1	HVA 189	Commercial Refrigeration Troubleshooting, Motor Controls and Ice Machines	3
<b>Semester Total</b>		<b>18</b>	<b>Semester Total</b>		<b>18</b>
<b>Total Technical Certificate Credits</b>					<b>36</b>

<b>General Education Courses</b> .....	<b>Credits</b>
COM 102 Interpersonal Communication or COM 105 Public Speaking.....	3
CSA 105 Introduction to Computer Applications and Concepts.....	3
ENG 100 Technical Writing or ENG 101 English Composition I .....	3
HUM 101 Ethics in the Workplace or PSY 101 General Psychology .....	3
MAT 101 Technical Math or MAT 150 College Algebra.....	3
<b>TOTAL GENERAL EDUCATION CREDITS</b> .....	<b>15</b>
<b>TOTAL RELATED ELECTIVE CREDITS</b> .....	<b>9</b>
<b>TOTAL AAS PROGRAM CREDITS</b> .....	<b>60</b>

**PROGRAM OUTCOMES**

- Obtain EPA Universal certification.
  - Demonstrate a working knowledge of residential heating systems to include installation, troubleshooting and repair skills.
  - Demonstrate a working knowledge of commercial heating systems to include installation, troubleshooting and repair skills.
  - Demonstrate working knowledge of residential cooling systems to include installation, troubleshooting, and repair skills.
  - Demonstrate a working knowledge of commercial cooling systems to include installation, troubleshooting, and repair skills.
  - Demonstrate a working knowledge of sheet metal lay out and fabrication.
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- Demonstrate a working knowledge of commercial refrigeration systems to include installation, troubleshooting and repair skills.
- Demonstrate a working knowledge of Work Place Skills/Ethics.

**GENERAL EDUCATION PROGRAM OUTCOMES**

- Compose coherent written communication.
  - Deliver coherent oral communication.
  - Show proficiency in locating, analyzing, documenting, and ethically using information sources.
  - Perform and interpret calculations.
  - Develop logical problem solving skills and/or critical thinking skills.
  - Identify appropriate strategies for gathering, analyzing, and displaying data to draw conclusions from scientific data.
  - Collaborate effectively, which cultivates a respect for human diversity.
  - Demonstrate technology literacy appropriate to area of study.
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