PIEDMONT Technical College

HVAC Technology Curriculum

Contact Us

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Program Overview

One of the fastest-growing service occupations, Heating, Ventilation and Air Conditioning has seen major changes over the past years as a result of the national emphasis on fuel conservation and environmental concerns.

Every private residence, business, industry and agency needs the skill of technicians trained in the installation, maintenance and repair of air conditioning, refrigeration and heating systems.

Students are trained to diagnose and repair malfunctions; size, fabricate and install air duct systems; and estimate cooling and heating loads for selection of the most efficient systems for a given building. Practical training in a well-equipped shop and outside installation of service projects gives students on-the-job experience before they graduate. EPA technician certification is taught and the test is offered to all curriculum students.

PROGRAM REQUIREMENTS

A.A.S., Major in Heating, Ventilation, and Air Conditioning Technology

GENERAL EDUCATION COURSES

COURSES		CREDIT HOURS
ENG 165	Professional Communications	3.0
MAT 170	Algebra, Geometry and Trigonometry I	3.0
	or MAT 110 College Algebra	
MAT 171	Algebra, Geometry and Trigonometry II	3.0
	or MAT 111 College Trigonometry	
	Elective Social/Behavioral Sciences	3.0
	Elective Humanities/Fine Arts	3.0

SUBTOTAL: 15.0

REQUIRED CORE SUBJECT AREAS

COURSES		CREDIT HOURS
ACR 101	Fundamentals of Refrigeration	5.0
ACR 106	Basic Electricity for HVAC/R	4.0
ACR 110	Heating Fundamentals	4.0
ACR 122	Principles of Air Conditioning	5.0
ACR 160	Service Customer Relations	3.0

SUBTOTAL: 21.0

OTHER COURSES REQUIRED FOR GRADUATION

COURSES		CREDIT HOURS
ACR 105	Tools and Service Techniques I	1.0
ACR 107	Wiring Diagrams	2.0
ACR 109	Tools and Service Techniques II	2.0
ACR 130	Domestic Refrigeration	4.0
ACR 131	Commercial Refrigeration	4.0
ACR 140	Automatic Controls	3.0
ACR 150	Basic Sheet Metal	2.0
ACR 210	Heat Pumps	4.0
ACR 223	Testing and Balancing	3.0
ACR 224	Codes and Ordinances	2.0
ACR 231	Advanced Refrigeration	4.0
CPT 101	Introduction to Computers	3.0
	or CPT 169 Industrial Computer Applications	

SUBTOTAL: 34.0
TOTAL CREDIT HOURS: 70.0

HVACR Installers Certificate

The certificate will enable students to gain entry level skills for HVACR equipment installation. This certificate will enable students to accelerate their progression to the HVACR Technician career track.

REQUIRED COURSE INFORMATION

COURSES		CREDIT HOURS
ACR 101	Fundamentals of Refrigeration	5.0
ACR 105	Tools and Service Techniques I	1.0
ACR 106	Basic Electricity for HVAC/R	4.0
ACR 109	Tools and Service Techniques II	2.0
ACR 131	Commercial Refrigeration	4.0
ACR 140	Automatic Controls	3.0
ACR 150	Basic Sheet Metal	2.0

SUBTOTAL: 21.0
TOTAL CREDIT HOURS: 21.0

Heating Fundamentals Certificate

The Heating Fundamentals certificate provides students with the theory and hands-on training in the operation of heating and cooling system design and component application. The certificate program will focus on concepts of installation, service repair, preventative maintenance and start-up of heating and cooling systems.

The students will be required to successfully complete the R-410A and the Heat Pump Certification exams in ACR 210. Students will be required to successfully complete the Light Commercial Refrigeration Certification Exam in ACR 231.

Heating Fundamentals certificate graduates will have opportunities to work in the industry in one or more of the following areas: service, installation and repair of gas, oil and electric heating systems, service, installation and repair of heat pump systems and design and installation of air duct systems.

The Heating Fundamentals certificate is the second year of the HVAC Technology program. These ACR courses require prerequisites. New or first year students should not be registered in this certificate program. An exception can be made for students that previously attained an EPA 608 certification and have verifiable and pertinent field experience. Students that meet these requirements may register directly for these courses with the review and approval of the HVAC Academic Program Director.

REQUIRED COURSE INFORMATION

COURSES		CREDIT HOURS
ACR 110	Heating Fundamentals	4.0
ACR 122	Principles of Air Conditioning	5.0
ACR 210	Heat Pumps	4.0
ACR 223	Testing and Balancing	3.0
ACR 224	Codes and Ordinances	2.0
ACR 231	Advanced Refrigeration	4.0
CPT 101	Introduction to Computers	3.0
	or CPT 169 Industrial Computer Applications	

SUBTOTAL: 25.0
TOTAL CREDIT HOURS: 25.0

Refrigeration Applications Certificate

The Refrigeration Applications certificate provides students with the theory and hands-on training in the operation of refrigeration system design and component application. The certificate program will focus on installation, start-up, service repair and preventative maintenance of commercial and domestic refrigeration systems.

The students will be required to successfully complete the EPA 608 Refrigerant Handling Certification Exam in ACR 101. Students will be required to successfully complete the Electrical Certification Exam in ACR 140.

Refrigeration applications graduates will have opportunities to work in the refrigeration industry in one or more of the following areas: service and repair of refrigeration systems, service and repair of domestic refrigeration systems, service and installation of food and vending refrigeration equipment and service and installation of supermarket equipment.

REQUIRED COURSE INFORMATION

COURSES		CREDIT HOURS
ACR 101	Fundamentals of Refrigeration	5.0
ACR 105	Tools and Service Techniques I	1.0
ACR 106	Basic Electricity for HVAC/R	4.0
ACR 107	Wiring Diagrams	2.0
ACR 109	Tools and Service Techniques II	2.0
ACR 130	Domestic Refrigeration	4.0
ACR 131	Commercial Refrigeration	4.0
ACR 140	Automatic Controls	3.0
ACR 150	Basic Sheet Metal	2.0
ACR 160	Service Customer Relations	3.0
CPT 101	Introduction to Computers	3.0
	or CPT 169 Industrial Computer Applications	

SUBTOTAL: 33.0
TOTAL CREDIT HOURS: 33.0

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