

# HVAC/R

## Programs

- Air Conditioning/Refrigeration Technician Certificate in Applied Science (<https://catalog.gvltec.edu/school-advanced-manufacturing-transportation-technology/hvacr/air-conditioning-refrigeration-technician-certificate/>)
- Beginning Electricity & Refrigeration Certificate in Applied Science (<https://catalog.gvltec.edu/school-advanced-manufacturing-transportation-technology/hvacr/beginning-electricity-refrigeration-certificate/>)

## Courses

### ACR 101 Fundamentals of Refrigeration (3-6-5)

*Offered Fall, Spring and Summer Semesters*

This course covers the refrigeration cycle, refrigerants, pressure-temperature relationships and system components.

### ACR 102 Tools and Service Techniques (2-3-3)

*Offered Fall, Spring and Summer Semesters*

This course is a basic study of the uses of tools and service equipment used in the installation and repair of HVAC equipment.

### ACR 106 Basic Electricity for HVAC/R (3-3-4)

*Offered Fall, Spring and Summer Semesters*

This course includes a basic study of electricity, including Ohm's Law and series and parallel circuits as they relate to heating, ventilating, air conditioning and/or refrigeration systems.

### ACR 110 Heating Fundamentals (3-3-4)

*Offered Fall, Spring and Summer Semesters*

Prerequisite: ACR 106

This course covers the basic concepts of oil, gas and electric heat, their components and operation.

### ACR 120 Basic Air Conditioning (3-3-4)

*Offered Fall, Spring and Summer Semesters*

Prerequisites: ACR 101, ACR 106

This course is a study of various types of air conditioning equipment including electrical components, schematics and service to the refrigerant circuit.

### ACR 122 Principles of Air Conditioning (4-3-5)

*Offered Fall, Spring and Summer Semesters*

Prerequisite: ACR 101

This course is a study of the air cycle, psychometrics, load estimating and equipment selection.

### ACR 131 Commercial Refrigeration (3-3-4)

*Offered Fall, Spring and Summer Semesters*

Prerequisite: ACR 101

This course is a study of maintenance and repair of commercial refrigeration systems.

### ACR 140 Automatic Controls (2-3-3)

*Offered Fall and Spring Semesters*

Prerequisite: ACR 106

This course is a study of the adjustment, repair and maintenance of a variety of pressure and temperature-sensitive automatic controls.

### ACR 150 Basic Sheet Metal (1-3-2)

*Offered Fall, Spring and Summer Semesters*

This course covers the tools and procedures required in the fabrication of ductwork.

### ACR 160 Service Customer Relations (3-0-3)

*Offered Fall, Spring and Summer Semesters*

This course covers how to deal with different types of customers, selling techniques and correct record keeping.

### ACR 206 Advanced Electricity for HVAC/R (1-3-2)

*Offered Fall, Spring and Summer Semesters*

Prerequisite: ACR 140

This course includes a practical application of electrical and electronic components and circuits used to control HVAC and/or refrigeration systems.

### ACR 210 Heat Pumps (3-3-4)

*Offered Fall, Spring and Summer Semesters*

Prerequisites: ACR 101, ACR 106

Pre- or Co-requisite: ACR 140

This course is a study of theory and operational principles of the heat pump.

### ACR 220 Advanced Air Conditioning (2-6-4)

*Offered Fall, Spring and Summer Semesters*

Prerequisites: ACR 101, ACR 106, ACR 210

This course is an advanced study of air conditioning systems.

### ACR 240 Advanced Automatic Controls (2-3-3)

*Offered Fall, Spring and Summer Semesters*

Prerequisites: ACR 106, ACR 140

This course is a study of pneumatic and electronic controls used in air conditioning and refrigeration.