

# HEATING AND VENTILATION (HVA)

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## **HVA 101 - Introduction to HVAC/R**

**Credit Hours: 3, Contact Hours: 4**

This course covers safety concerns associated with the HVAC field, identification and use of trade tools and basic blueprint reading. Students are introduced to different types of pipe and tubing used for equipment and will learn threading and soldering techniques. A strong emphasis is placed on electrical theory and application as well as learning how to read electrical diagrams. Group 2 course.

Recommended Prerequisites: Placement into ENG 111 and MTH 111, both may be taken concurrently.

## **HVA 106 - Fundamentals of Heating**

**Credit Hours: 3, Contact Hours: 4**

This course focuses on the variety of heating systems in the HVAC career field. Students are introduced to the principles of combustion and the importance of combustion analysis. Gas furnaces, heating controls, oil fired equipment, humidification and electric heating systems are also explored. Group 2 course.

Required Prerequisites: HVA 101

Recommended Prerequisites: Placement in ENG 111 and MTH 111.

## **HVA 122 - Refrigeration Fundamentals**

**Credit Hours: 3, Contact Hours: 4**

This course introduces students to the relationship between matter and energy as it relates to refrigeration process and discusses the Laws of Thermodynamics and effects of pressures and vacuums on a system. A thorough coverage of the basic refrigeration cycle is discussed along with types of refrigerants and system components they will encounter. Students will also learn basic servicing and testing techniques on refrigeration systems. Group 2 course.

Required Prerequisites: HVA 101

Recommended Prerequisites: Placement in ENG 111 and MTH 111.

## **HVA 126 - Residential and Commercial A/C**

**Credit Hours: 3, Contact Hours: 4**

This course focuses on different types of air conditioning systems, ventilation and de-humidification equipment used in residential and light commercial applications. Students will learn about air source and geothermal heat pumps, mechanical and electrical troubleshooting techniques for air conditioning systems and explore indoor air quality and planned maintenance issues for all types of equipment. Group 2 course.

Required Prerequisites: HVA 122 with a grade of 2.5 or higher

Recommended Prerequisites: Placement in ENG 111 and MTH 111.

## **HVA 132 - Commercial A/C & Refrigeration**

**Credit Hours: 3, Contact Hours: 4**

This course focuses on larger commercial systems encountered in the HVAC field for air conditioning and refrigeration applications. Emphasis is placed on chilled water and hydronic heating systems, boilers, air handling equipment and cooling towers. Students will also learn about larger scale refrigeration systems used in supermarket and cold storage applications, ice machine operation and discussion of control systems used throughout the field. Group 2 course.

Required Prerequisites: HVA 126 with a grade of 2.5 or higher

Recommended Prerequisites: Placement into MTH 111 and ENG 111.

## **HVA 136 - EPA Certification**

**Credit Hours: 3, Contact Hours: 3**

This course examines the impact of refrigerants on the environment and focuses on federal regulations regarding the use, recovery and disposal methods. Students are given the opportunity to earn their Type I, Type II or Universal Certification through this course. Upon successful completion of each test, the student will earn levels of certification recognized by the HVAC/R industry nationwide. Group 2 course. Quantitative Reasoning.

Required Prerequisites: HVA 126

Recommended Prerequisites: Placement in ENG 111 and MTH 111.