

# HEATING, VENTILATION, AC, & REFRIGERATION (HVAC)

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## **HVAC-161 HVACR Principles**

### **3 Credits**

**Lecture:** 3 hours per week

**Offering:** Fall Only, All Years

This course is designed to explore the common aspects of HVACR technology. Discussion will focus on such topics as psychometrics, air distribution and balance, as well as system installation and controls. This is a required class in the HVACR program. Current industry professionals who want to update skills are invited to take this class as a stand alone course.

## **HVAC-161L HVACR Lab I**

### **5 Credits**

**Lab:** 10 hours per week

**Offering:** Fall Only, All Years

This course provides an opportunity to apply and practice the theories taught in HVACR Principles, HVACR Electrical, and HVACR Heating Systems. Safety principles and procedures used in the field are also emphasized in this lab class. Students enrolled in the HVACR program are required to take this class concurrently with theory classes. Of the required 5 credits, a maximum of 2 credits can be substituted in an approved internship/co-op with instructor permission.

## **HVAC-165 HVACR Electrical**

### **4 Credits**

**Lecture:** 4 hours per week

**Offering:** Fall Only, All Years

This course will discuss basic electrical safety and electrical theory such as Ohms Law, circuit schematics and circuit characteristics/symbols as it applies to DC and AC circuits in the HVACR industry. Basic control circuits, sequence of operation for basic HVACR applications and electric motor theory, as well as specific information on HVACR electrical component devices will also be covered. Both electrical testing and troubleshooting methods are taught and practiced. HVACR professionals are invited to take this course as a refresher to update skills. Students enrolled in the HVACR program are required to take this course as part of their program.

## **HVAC-167 HVACR Heating**

### **4 Credits**

**Lecture:** 4 hours per week

**Offering:** Fall Only, All Years

This course will focus on basic heat transfer theory and concepts. Specific areas of study include the different mediums used for heat transfer, electric heat systems, and fossil fuel systems (natural gas, propane and fuel oil). Residential and light commercial system applications will be made throughout the program. Industry professionals who want to update skills are encouraged to take this class as a stand alone course. Students enrolled in the HVACR program are required to take this class as part of their program.

## **HVAC-171L HVACR Lab II**

### **5 Credits**

**Lab:** 10 hours per week

**Offering:** Spring Only, All Years

This course provides students an opportunity to apply and practice the theories taught in HVAC Systems, HVACR Heating, HVACR Codes and Licenses, and HVACR Principles. Safety principles and procedures used in the field will be a major focus. Students enrolled in the HVACR program are required to take this class concurrently with theory classes. Of the required 5 credits, up to 2 credits can be substituted in an approved internship/co-op with instructor permission.

## **HVAC-175 HVACR Systems**

### **4 Credits**

**Lecture:** 4 hours per week

**Offering:** Spring Only, All Years

This course will focus on HVACR systems that utilize the refrigeration cycle. Refrigeration, as it applies to air conditioning, typical operation conditions, heat pumps, room air conditioners, furnaces, and AC combined will be covered. Students will have the opportunity to explore troubleshooting methods for HVACR systems. Students enrolled in the HVACR program are required to take this course as part of their program. Industry professionals who want to update skills are encouraged to take this as a stand-alone course.

## **HVAC-177 Refrigeration**

### **4 Credits**

**Lecture:** 4 hours per week

**Offering:** Spring Only, All Years

This course will introduce students to the refrigeration cycle. In addition, it will concentrate on the major components and flow control devices that are used in a refrigeration system. Major topics covered will include refrigeration and refrigerants, system evacuation, refrigerant management, system charging, evaporators, condensers, compressors, and flow controls. Focus will also be placed on applications and system troubleshooting practices. Students enrolled in the HVACR program are required to take this class as part of their program. Industry professionals who want to update skills are encouraged to take this class as a stand alone course.

## **HVAC-180 HVACR Codes and Licenses**

### **3 Credits**

**Lecture:** 3 hours per week

**Offering:** Spring Only, All Years

This course provides information needed to successfully pass the Gas Fitter License exam and the EPA refrigerant license - Type II level. Students will have the opportunity to take both of these exams during the semester. Students enrolled in the HVACR program are required to take this class as part of their program. Current industry professionals that want to update skills are invited to take this class as a stand alone course.