

Heating Ventilation & Air Cond

HVAC 111 Basic Electricity and Control Theory

4 credits

This course is the first in a series of electrical courses for the HVAC student. It provides students with a general knowledge of electricity and how it is applied to control circuits found in the HVAC industry. After an introduction to electron theory, students explore magnetism, electric meters, direct and alternating current power generation, distribution, and utilization. Once they gain the knowledge of what electricity is, they then proceed to schematic symbols, wiring diagrams, electric code, and motor control fundamentals. In the laboratory, students explore these principles and components through test and analysis. Three lecture and two laboratory hours per week. Co/

Prerequisite: ENGL101 English Composition I; MATH101 Introductory Algebra; waiver by placement testing results; or departmental approval.

HVAC 113 Introduction to HVAC/R

3 credits

This course is an introductory course to the HVAC/Refrigeration field. The course covers the basic components of the compression refrigeration system, terminology, materials, and the cost estimating of component used to create a HVAC/R system. The course introduces the career fields and paths their career may take. Students are introduced to OSHA safety standards, the tools of the trade, and proper tool usage. Two lecture and two laboratory hours per week.

HVAC 114 Heat Principles and Application

4 credits

This course is an in-depth study of heat principles, gaseous and liquid heating fuels, heating equipment, and distribution systems. Also discussed is the removal of combustion by-products through ventilation and venting requirements as prescribed in the state and national codes. High-efficiency heating units and their special venting requirements are covered. In a laboratory setting, the student is exposed to instrumentation, methods of metering and proper fuel delivery, and adjusting heating equipment to achieve maximum performance. Three lecture and two laboratory hours per week.

Prerequisites: HVAC 111 Basic Electricity and Control Theory and HVAC 113 Introduction to HVAC/R; or departmental approval.

HVAC 118 Load Calculations and Duct Design

3 credits

This course teaches the students about heat gains, losses, and the factors which are used in determining the amount of BTU's to be added or removed to satisfy the desired temperatures. Students learn how to calculate the proper cooling and heating loads. They also learn about the process which must be taken prior to any installation of HVAC equipment. Students learn how to plot the enthalpy on the psychometric chart and proper use of the chart when determining heat and air properties in the given space. Students become familiar with the supply, return air, and make up air used in ductwork. Two lecture and two laboratory hours per week.

Prerequisite: HVAC 111 Basic Electricity and Control Theory or HVAC 113 Introduction to HVAC/R; or permission of instructor.