Heating, Ventilation, Air Conditioning/Refrigeration

COURSE DESCRIPTIONS

HVAC101 – CORE CURRICULUM (3 credits).

This course is a basic introduction to heating, ventilation, air conditioning, and refrigeration trade areas covering safety, tools, equipment, and fundamentals of electricity. SU

HVACR102 – Technical Mathematics 1 (3 credits).

The course covers development of problem-solving skills in basic technical mathematics involving arithmetic; algebra; geometry; and trigonometry. SP

HVACR104 – Heating Equipment Theory (3 credits).

This course will cover the history of various heating systems and the skills needed to repair them. It will get the students familiar with the concept of residential and commercial heating troubleshooting. The students will learn the sequence of operation, the different types of fossil fuels used to heat homes and businesses. SU

HVACR104L – Heating lab (2 credits).

This course demonstrates procedures for determining and correcting faulty heating systems. This lecture, discussion, and lab course will focus on wiring and troubleshooting of residential gas, oil, and electrical furnaces, through the use of lab and experiential learning activities. SU

HVACR105 - Sheet Metal Theory (3credits).

This course covers sheet metal equipment, tools, materials, and layout procedures for the beginner to construct and install ductwork. Design fundamentals will be interpreted and installation procedures will be practiced in lab activities. SP

HVACR105L – Sheet metal lab (2 credits).

This course will allow the students to practice the "hands on" portion of the sheet metal course. They will learn to master the use of their hand tools and how to safely run the machines that are used in the HVAC trade. SP

HVACR106 – Sheet Metal Theory 2 (3 credits).

This course will introduce the student to the sheet metal fabrication industry. The various methods used in the sheet metal manufacturing process in forced air installation. FA

HVACR106L – Sheet Metal Lab 2 (2 credits).

This course will teach the students more skills that it takes to design and to understand plans and specification. FA

HVACR103 - Air Conditioning Theory & Components (3 credits).

This course covers the operating principles and service procedures for residential and commercial air conditioning systems. Students will perform common maintenance procedures, system operational tests in relation to the use of compressors, evaporators, condensers, metering devices, refrigerants, and electrical components. SP

HVACR103L – Air Conditioning Lab (2 credits).

This course demonstrates procedures for determining and correcting faulty cooling systems. The lecture, discussion, and lab course will utilize lab and experiential learning activities to demonstrate steps to troubleshooting faculty air conditioning systems. SP

HVACR115 – Blue Print Reading (3 credits).

This is a practical course in reading and interpretation of engineering and architectural blueprints. The principals involved are sufficient in depth to give the student the working knowledge and skills required of HVAC technicians. SU

HVACR121 – Electrical Theory 1 (3 credits).

This course is an introduction to Electrical Safety, Basic Electricity, Electric Circuits, Electric Meters, Components, Symbols, and Circuitry of Air-Conditioning Wiring Diagrams. FA

HVACR121L – Electrical Theory Lab 1 (2 credits).

This course is an introduction to electrical theory and Lab. Theories covered in Electrical Theory I will be practically demonstrated in the Lab with each student participating and following-up their practical experiences with a comprehensive lab report of what they have observed. FA

HVACR123 – Electrical Theory 2 (3 credits).

The course is a continuation of Electrical Theory 1. It covers basic schematic diagrams used in HVAC systems; alternating current and power distribution; Installation of heating, cooling, and refrigeration systems; basic electric motors and their components parts; etc. SP

HVACR123L – Electrical Theory Lab 2 (2 credits).

This course is an introduction to electrical theory and Lab. Theories covered in HVAC 123- Electrical Theory II – will be practically demonstrated in the Lab with each student participating and following-up their practical experiences with a comprehensive lab report of what they have observed. SP

HVACR 207 – Electrical Systems 1 (3 credits).

This identifies electrical components used HVACR systems and provides the learner with information needed to troubleshoot and service HVACR electrical system. SP

HVACR 209 – Technical Mathematics 2 (3 credits).

The course covers development of useful skills in layout, measurement, and computation of pipe lengths and fitting allowances, as well as a study of elevation, grade and volumes relating to Plumbing and associated occupational clusters

HVACR 215 - Light Commercial Refrigeration (2 credits).

This course will cover smaller commercial systems, ice machines, system accessories, and troubleshooting of this equipment. FA, SP