AIR CONDITION & REFRIGERATION (HACR)

HACR 1150 - HVAC Introduction (3 Credit Hours)
This course is designed to provide information needed to prepare individuals to enter the Air Conditioning and Refrigeration Industry. Topics include: Basic safety, fire prevention and health, inventory control, stock management, licensing, certification requirements, and basic business management practices.
Prerequisite(s): None
(1/2/3)

HACR 1160 - Principles of Refrigeration I (3 Credit Hours)
This course teaches the proper and safe use of hand tools including power tools and materials in the HVAC Industry. This course also provides for a review of HVAC and refrigeration processes and applications. Topics include: identify various types of pipe, tubing, and fittings; swaging, flaring and cutting copper tubing; set-up and use of an oxyacetylene torch set and proper soldering and brazing techniques.
Prerequisite(s): None
(1/2/3)

HACR 1170 - Principles of Refrigeration II (3 Credit Hours)
This course teaches the student with the skills and knowledge to install, repair and service major components of a refrigeration system. Topics include: compressors; evaporators; condensers; metering devices; service procedures; refrigeration systems; and safety.
Co-requisite(s): HACR 1160
(1/2/3)

HACR 1180 - Principle of Refrigeration III (3 Credit Hours)
This course teaches the skills andknowledge to evacuate, charge, and leak checking a sealed system according to EPA and Industry standards. Topics include: Triple Evacuation, Burn-out cleanup of system, weigh-in charging, Superheat settings and Sub-cool adjustments and safety.
Co-requisite(s): HACR 1170
(1/2/3)

HACR 1210 - Electrical Fundamentals (3 Credit Hours)
This course presents introduction to fundamental electrical concepts and theories as applied to the air conditioning industry. Topics include: AC and DC theory; ohms law; electric meters; electric diagrams; distribution systems; electrical panels; voltage circuits; code requirements; and safety.
Prerequisite(s): None
(1/2/3)

HACR 1220 - Electrical Components (3 Credit Hours)
This course provides instruction in identifying, installing and testing commonly used components in an air conditioning system. Topics include: pressure switches; overload devices; transformers; magnetic starters; other commonly used controls; diagnostic techniques; installation procedures; and safety.
Co-requisite(s): HACR 1210
(1/2/3)

HACR 1230 - Electric Motors (3 Credit Hours)
This course continues the development of skills and knowledge necessary for application and service of electric motors commonly used by the refrigeration and air conditioning industry. Topics include: diagnostic techniques; capacitors; installation procedures; types of electric motors; electric motor service; and safety.
Prerequisite(s): None
(1/2/3)

HACR 1240 - Applied Elec & Troubleshooting (3 Credit Hours)
This course provides instruction on wiring various types of air conditioning systems. Topics include: servicing procedures; troubleshooting procedures; solid state controls; system wiring; control circuits; and safety.
Prerequisite(s): None
(1/2/3)

HACR 1410 - Domestic Refrigeration (2 Credit Hours)
This course presents the proper procedures to diagnose and repair domestic refrigerators and freezers.
Prerequisite(s): None
(1/1/2)

HACR 1420 - Room Air Conditioners (2 Credit Hours)
This course covers the operation, diagnosis and science of room air conditioning. Emphasis is devoted to diagnosis and repair.
Prerequisite(s): None
(1/1/2)

HACR 2510 - Residential Central Air Cond I (3 Credit Hours)
This course presents the study and theory of the major components and functions of central air conditioning systems. Topics include the study of different air conditioning systems types and the proper and safe use of instruments and safety.
Prerequisite(s): None
(1/2/3)

HACR 2520 - Residential Air Cond II (2 Credit Hours)
This course presents the operation, diagnosis and service of central air conditioning systems and the care of associated instruments. Topics include the various types of A/C systems, and safety principles.
Co-requisite(s): HACR 2510
(1/1/2)

HACR 2530 - Residential System Design (2 Credit Hours)
This course presents theory and practice of different types of residential air conditioning systems heat loads. Topics include calculations, duct design, air filtration, and safety practices.
Prerequisite(s): None
(1/1/2)

HACR 2540 - Residential Heating I (3 Credit Hours)
This course covers theory and study of the principles and practices for the operation, diagnosis and service of residential and small commercial heating systems. Topics covered will include electrical controls, gas valves, piping, venting, code requirements, and principles of combustion and safety for gas and electrical heating.
Prerequisite(s): None
(1/2/3)

HACR 2550 - Residential Heating II (3 Credit Hours)
This course presents the application of service procedures, controls (electrical & gas), gas valves, piping, ventilation, code requirements and safety for gas and electrical heating systems for residential and small commercial uses.
Co-requisite(s): HACR 2540
(1/2/3)

HACR 2560 - Residential Heat Pumps (2 Credit Hours)
This course presents the theory and study of heat pumps and related systems, providing information for the fundamentals of heat pump operation and diagnosis techniques. Installation procedures, diagnosis, servicing procedures, valves, electrical components and geothermal ground source applications, dual fuel systems, and safety are topics included.
Prerequisite(s): None
(1/1/2)

HACR 2810 - Commercial Air Conditioning I (6 Credit Hours)
This course introduces fundamental theory and techniques to identify major components and functions of commercial systems. Instruction is given on types of commercial air conditioning systems pressure, and temperature charts.
Prerequisite(s): None
(2/4/6)

HACR 2820 - Commercial Air Cond Controls (7 Credit Hours)
This course places emphasis on the service of split-systems, add-on package system, and safety. Also provides troubleshooting and repair of major component parts of a commercial air conditioning system.
Prerequisite(s): None
(3/4/7)

HACR 2830 - Commercial Air Cond II (6 Credit Hours)
This course teaches topics that will include types of commercial air conditioning systems heat loads, calculations, duct design, air filtration, and safety principles.
Co-requisite(s): HACR 2810
(2/4/6)

HACR 2910 - Commercial Refrigeration I (6 Credit Hours)
This course is an introduction to the fundamental theories and techniques to identify major components and function of commercial system. Instruction is given on types of commercial refrigeration systems, and pressure and temperature charts.
Prerequisite(s): None
(2/4/6)

HACR 2920 - Commercial Refrig Controls (7 Credit Hours)
This course places emphasis on the service of commercial refrigeration systems and safety. Also provides troubleshooting and repair of major component parts of a commercial refrigeration systems.
Co-requisite(s): HACR 2910
(3/4/7)

HACR 2930 - Commercial Refrigeration II (6 Credit Hours)
This course teaches topics that will include types of commercial refrigeration systems heat loads, calculations, duct design, air filtration, and safety principles.
Co-requisite(s): HACR 2910
(2/4/6)

HACR 2991 - Special Projects I (1 Credit Hour)
A course designed for the student who has demonstrated specific special needs. Associate Provost of Technical Studies approval required.
Prerequisite(s): None
(0/1/1)

HACR 2993 - Special Projects II (2 Credit Hours)
A course designed for the student who has demonstrated specific special needs. Associate Provost of Technical Studies approval required.
Prerequisite(s): None
(0/2/2)

HACR 2995 - Special Projects III (3 Credit Hours)
A course designed for the student who has demonstrated specific special needs. Associate Provost of Technical Studies approval required.
Prerequisite(s): None
(0/3/3)

HACR 2996 - Special Projects IV (3 Credit Hours)
A course designed for the student who has demonstrated specific special needs. Associate Provost of Technical Studies approval required.
Prerequisite(s): None
(3/0/3)

HACR 2997 - Practicum (3 Credit Hours)
A practicum provides supervised on-the-job work experience related to the student's education objectives. Students participating in practicum do not receive compensation.
Prerequisite(s): None
(0/3/3)

HACR 2998 - Special Projects V (1 Credit Hour)
A course designed for the student who has demonstrated specific special needs. Associate Provost of Technical Studies approval required.
Prerequisite(s): None
(1/0/1)

HACR 2999 - Cooperative Education (3 Credit Hours)
Cooperative Education provides supervised on-the-job work experience related to the student's educational objectives. Students participating in Cooperative Education receive compensation for their work.
Prerequisite(s): None
(0/0/3)