

AIR CONDITION & REFRIGERATION (HACR)

HACR 1003, HVAC Introduction (3 Credit Hours)

2 lecture hours per week, 4 lab hours per week, 6 contact hours per week

Produces information needed to prepare individuals to enter the Air Conditioning and Refrigeration Industry. Includes basic safety and health, inventory control, stock management, vehicle maintenance, licensure, certification requirements, and basic business management practices. This course requires a lab fee. This course may not be transferable to a University for use towards a 4-year degree program.

Corequisite(s): HACR 1123, HACR 1223 and HACR 1323

HACR 1113, Electrical Fundamentals (3 Credit Hours)

1 lecture hours per week, 6 lab hours per week, 7 contact hours per week

Introduction to fundamental electrical concepts and theories as applied to the air conditioning industry. Topics include: AC and DC theory; Ohm's law; electric meters; electric diagrams; distribution systems; electrical panels; voltage circuits; code requirements; and safety. This course requires a lab fee. This course may not be transferable to a University for use towards a 4-year degree program.

Corequisite(s): CORE 1003, HACR 1213 and HACR 1313

HACR 1123, Principles of Refrigeration I (3 Credit Hours)

2 lecture hours per week, 4 lab hours per week, 6 contact hours per week

Presents 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. This course requires a lab fee. This course may not be transferable to a University for use towards a 4-year degree program.

Corequisite(s): HACR 1003, HACR 1223 and HACR 1323

HACR 1213, Electrical Components (3 Credit Hours)

1 lecture hours per week, 6 lab hours per week, 7 contact hours per week

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. This course requires a lab fee. This course may not be transferable to a University for use towards a 4-year degree program.

Corequisite(s): CORE 1003, HACR 1113 and HACR 1313

HACR 1223, Principles of Refrigeration II (3 Credit Hours)

2 lecture hours per week, 4 lab hours per week, 6 contact hours per week

Provides 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. This course requires a lab fee. This course may not be transferable to a University for use towards a 4-year degree program.

Corequisite(s): HACR 1003, HACR 1123 and HACR 1323

HACR 1313, Electric Motors (3 Credit Hours)

1 lecture hours per week, 6 lab hours per week, 7 contact hours per week

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. This course requires a lab fee. This course may not be transferable to a University for use towards a 4-year degree program.

Corequisite(s): CORE 1003, HACR 1113 and HACR 1213

HACR 1323, Principles of Refrigeration III (3 Credit Hours)

2 lecture hours per week, 4 lab hours per week, 6 contact hours per week

Provides the student with the skills and knowledge to install, repair, and service major components of a refrigeration system. Topics include: EPA Section 608 Certification, Refrigerant recovery, recycle & reclamation, System charging using superheat, subcool, weigh-in and/or manufacturer's procedures, evacuation & dehydration procedures. This course requires a lab fee. This course may not be transferable to a University for use towards a 4-year degree program.

Corequisite(s): HACR 1003, HACR 1123 and HACR 1223

HACR 2032, Ductless Technology (2 Credit Hours)

1 lecture hours per week, 4 lab hours per week, 5 contact hours per week

This course delves into the fundamentals and advanced concepts of ductless mini split technology. Students will gain a comprehensive understanding of the theory behind ductless systems, focusing on proper techniques for flaring and torquing copper fittings, evacuating systems, leak checking, and wiring. Practical, hands-on training will equip students with the skills needed to install, maintain, and troubleshoot ductless mini split systems efficiently. Through a combination of theoretical knowledge and practical application, this course prepares students for a successful career in the HVAC industry, with a specialized focus on ductless technology. This course may not be transferable to a University for use towards a 4-year degree program.

Prerequisite(s): (HACR 1003 or 1150) and (HACR 1113 or 1210) and (HACR 1213 or 1220) and (HACR 1313 or 1230) and (HACR 1123 or 1160) and (HACR 1223 or 1170) and (HACR 1323 or 1180) and CORE 1003.

Corequisite(s): HACR 2072, HACR 2143, HACR 2243 and HACR 2422

HACR 2063, Heat Pumps (3 Credit Hours)

1 lecture hours per week, 4 lab hours per week, 5 contact hours per week

Theory and study of heat pumps and related systems. Provides the fundamentals of heat pump operation and diagnosis. Installation procedures, diagnosis, servicing procedures, valves, electrical components and geothermal ground source applications, dual fuel systems, and safety are topics included. This course may not be transferable to a University for use towards a 4-year degree program.

Prerequisite(s): (HACR 1003 or 1150) and (HACR 1113 or 1210) and (HACR 1213 or 1220) and (HACR 1313 or 1230) and (HACR 1123 or 1160) and (HACR 1223 or 1170) and (HACR 1323 or 1180) and CORE 1003.

Corequisite(s): HACR 2153, HACR 2253 and HACR 2413

HACR 2072, System Design (2 Credit Hours)

1 lecture hours per week, 3 lab hours per week, 4 contact hours per week

Theory and practice of different types of residential air conditioning systems heat loads. Topics include calculations, duct design, air filtration, and safety practices. This course may not be transferable to a University for use towards a 4-year degree program.

Prerequisite(s): (HACR 1003 or 1150) and (HACR 1113 or 1210) and (HACR 1213 or 1220) and (HACR 1313 or 1230) and (HACR 1123 or 1160) and (HACR 1223 or 1170) and (HACR 1323 or 1180) and CORE 1003.

Corequisite(s): HACR 2032, HACR 2143, HACR 2243 and HACR 2422

HACR 2143, Air Conditioning I (3 Credit Hours)

2 lecture hours per week, 3 lab hours per week, 5 contact hours per week

The study and theory of the major components and functions of central air conditioning systems. Includes the study of Air Conditioning system types and the proper and safe use of instruments and safety. This course requires a lab fee. This course may not be transferable to a University for use towards a 4-year degree program.

Prerequisite(s): (HACR 1003 or 1150) and (HACR 1113 or 1210) and (HACR 1213 or 1220) and (HACR 1313 or 1230) and (HACR 1123 or 1160) and (HACR 1223 or 1170) and (HACR 1323 or 1180) and CORE 1003.

Corequisite(s): HACR 2032, HACR 2072, HACR 2243 and HACR 2422

HACR 2153, Heating I (3 Credit Hours)

1 lecture hours per week, 4 lab hours per week, 5 contact hours per week

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, principles of combustion and safety for gas and electrical heating. This course may not be transferable to a University for use towards a 4-year degree program.

Prerequisite(s): (HACR 1003 or 1150) and (HACR 1113 or 1210) and (HACR 1213 or 1220) and (HACR 1313 or 1230) and (HACR 1123 or 1160) and (HACR 1223 or 1170) and (HACR 1323 or 1180) and CORE 1003.

Corequisite(s): HACR 2063, HACR 2253 and HACR 2413

HACR 2243, Air Conditioning II (3 Credit Hours)

2 lecture hours per week, 3 lab hours per week, 5 contact hours per week

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. This course requires a lab fee. This course may not be transferable to a University for use towards a 4-year degree program.

Prerequisite(s): (HACR 1003 or 1150) and (HACR 1113 or 1210) and (HACR 1213 or 1220) and (HACR 1313 or 1230) and (HACR 1123 or 1160) and (HACR 1223 or 1170) and (HACR 1323 or 1180) and CORE 1003.

Corequisite(s): HACR 2032, HACR 2072, HACR 2143 and HACR 2422

HACR 2253, Heating II (3 Credit Hours)

1 lecture hours per week, 4 lab hours per week, 5 contact hours per week

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. This course may not be transferable to a University for use towards a 4-year degree program.

Prerequisite(s): (HACR 1003 or 1150) and (HACR 1113 or 1210) and (HACR 1213 or 1220) and (HACR 1313 or 1230) and (HACR 1123 or 1160) and (HACR 1223 or 1170) and (HACR 1323 or 1180) and CORE 1003.

Corequisite(s): HACR 2063, HACR 2153 and HACR 2413

HACR 2413, Applied Electricity and Troubl (3 Credit Hours)

0 lecture hours per week, 9 lab hours per week, 9 contact hours per week

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. This course requires a lab fee. This course may not be transferable to a University for use towards a 4-year degree program.

Prerequisite(s): (HACR 1003 or 1150) and (HACR 1113 or 1210) and (HACR 1213 or 1220) and (HACR 1313 or 1230) and (HACR 1123 or 1160) and (HACR 1223 or 1170) and (HACR 1323 or 1180) and CORE 1003.

Corequisite(s): HACR 2063, HACR 2153 and HACR 2253

HACR 2422, Refrigeration (2 Credit Hours)

1 lecture hours per week, 4 lab hours per week, 5 contact hours per week

This course provides students with practical skills and knowledge in both high and low temperature refrigeration systems. Students will learn to apply fan cycle controls, understand and use cut-in and cut-out pressure switches, and adjust and install defrost timers. The course covers checking and verifying crankcase heaters, installing and setting cold controls, and installing and troubleshooting various metering devices. Through hands-on training and theoretical instruction, students will be well-prepared to handle real-world refrigeration system applications and challenges, equipping them for successful careers in the refrigeration industry. This course requires a lab fee. This course may not be transferable to a University for use towards a 4-year degree program.

Prerequisite(s): (HACR 1003 or 1150) and (HACR 1113 or 1210) and (HACR 1213 or 1220) and (HACR 1313 or 1230) and (HACR 1123 or 1160) and (HACR 1223 or 1170) and (HACR 1323 or 1180) and CORE 1003.

Corequisite(s): HACR 2032, HACR 2072, HACR 2143 and HACR 2243