

SUBJECTS AND COURSES

COURSE DESCRIPTIONS - AIR COND/ REFRIGERATION (ACR)

ACR 111 Principles of Refrigeration

This course emphasizes the fundamental principles for air conditioning and refrigeration. Instruction is provided in the theory and principles of refrigeration and heat transfer, HVAC/R system components, common, and specialty tools for HVAC/R, and application of the concepts of basic compression refrigeration. Upon completion, students should identify system components and understand their functions, identify and use common and specialty HVAC/R tools, and maintain components of a basic compression refrigeration system. (Taught on Demand)

5 Credit Hours

ACR 112 HVACR Service Procedures

This course covers system performance checks and refrigerant cycle diagnosis. Emphasis is placed on the use of refrigerant recovery/recycle units, industry codes, refrigerant coils and correct methods of charging and recovering refrigerants. Upon completion, students should be able to properly recover/recycle refrigerants and demonstrate safe, correct service procedures which comply with the no-venting laws.

5 Credit Hours

ACR 113 Refrigeration Piping Practices

The course introduces students to the proper installation procedures of refrigerant piping and tubing for the heating, ventilation, air conditioning and refrigeration industry. This course includes various methods of working with and joining tubing. Upon completion, students should comprehend related terminology, and be able to fabricate pipe, tubing, and pipe fittings.

5 Credit Hours

ACR 119 Fundamentals of Gas Heating Sy

This course provides instruction on general service and installation for common gas furnace system components. Upon completion, students will be able to install and service gas furnaces in a wide range of applications.

5 Credit Hours

ACR 121 Principles of Elect for HVAC

This course is designed to provide the student with the basic knowledge of electrical theory and circuitry as it pertains to air conditioning and refrigeration. This course emphasizes safety, definitions, symbols, laws, circuits, and electrical test instruments. Upon completion, students should understand and be able to apply the basic principles of HVACR circuits and circuit components.

5 Credit Hours

ACR 122 HVACR Electrical Circuits

This course introduces the student to electrical circuits and diagrams. Electrical symbols and basic wiring diagrams are constructed in this course. Upon completion, students should understand standard wiring diagrams and symbols.

5 Credit Hours

ACR 123 HVACR Electrical Components

This course covers the basic maintenance of electric motors used in HVAC/R systems. Topics include types of motors, motor operations, motor installation, and troubleshooting motors. Upon completion, students should be able to install and service HVAC/R electric motors. Prerequisite(s): As required by College

5 Credit Hours

ACR 127 HVACR Electric Motors

This course covers the basic maintenance of electric motors used in HVAC/R systems. Topics include types of motors, motor operations, motor installation, and troubleshooting motors. Upon completion, students should be able to install and service HVAC/R electric motors. Prerequisite(s): As required by College

5 Credit Hours

ACR 128 Heat Load Calculations

This course focuses on heat flow into and out of building structures. Emphasis is placed on determining heat gain/heat loss of a given structure. Upon completion, students should be able to calculate heat load and determine HVAC equipment size requirements.

3 Credit Hours

ACR 130 Computer Assisted HVAC Trouble

This course focuses on troubleshooting procedures. Emphasis is placed on the proper use of test equipment and machine/electrical malfunctions. Upon completion, student should be able to diagnosis and repair service problems in HVAC equipment.

NaN Credit Hours

ACR 132 Residential Air Conditioning

This course introduces students to residential air conditioning systems. Emphasis is placed on the operation, service, and repair of residential air conditioning systems. Upon completion, students should be able to service and repair residential air conditioning systems.

5 Credit Hours

ACR 133 Domestic Refrigeration

This course covers domestic refrigerators and freezers. Emphasis is placed on installation, removal, and maintenance of components. Upon completion, students should be able to service and adjust domestic refrigeration units. Prerequisite(s): As required by College

5 Credit Hours

ACR 134 Ice Machines

This course introduces students to commercial ice machines. Emphasis is placed on components, electrical and mechanical operation sequences, control adjustment procedures, preventive maintenance, repairs, and installation procedures. Upon completion, student should be able to install, service and repair commercial ice machines. Prerequisite(s): As required by College

5 Credit Hours

ACR 135 Mechanical/Gas/Safety Codes

This course is to enhance the student knowledge of the Southern Mechanical and Gas Code as well as fire and job safety requirements. Emphasis is placed on code book content and compliance with installation requirements. Upon completion, students should be able to apply code requirements to all work.

3 Credit Hours

ACR 144 Basic Drawing & Blueprint Read

This course covers basic drawing and blueprint reading as applied to the HVAC industry. Emphasis is on three-view drawings, basic duct systems, and isometric piping. Upon course completion, students should be able to perform basic drawings related to HVAC systems and read pertinent blueprints.

3 Credit Hours

ACR 147 Refrigerant Transition/Recover

This course is EPA-approved and covers material relating to the requirements necessary for types I, II, III and universal certification. Upon completion, students should be able to take the EPA/608 refrigerant certification exam. (Taught on Demand)

3 Credit Hours

ACR 148 Heat Pump Systems I

Instruction received in this course centers around the basic theory and application of heat pump systems and components. Upon completion, students will be able to install and service heat pumps in a wide variety of applications.

5 Credit Hours

ACR 181 Special Topics in ACR I

This course provides specialized instruction in various areas related to the air conditioning and refrigeration industry. Emphasis is placed on meeting the students' needs. This course is guided independent study in special projects to give the student additional training in a specific area selected by the instructor. Emphasis is placed on individual student needs to improve or expand skills. Upon course completion, students should be able to demonstrate skills to meet specific needs.

3 Credit Hours

ACR 192 HVAC Apprenticeship/Internship

This course is designed to provide basic hands-on experiences in the work place. The student is provided with a training plan developed by the employer and instructor working together to guide the learning experience. Upon course completion, students should be able to work independently and apply related skills and knowledge. This course involves a minimum of 15 work hours per week. **15 Credit Hours**

ACR 200 Review for Contractors Exam

This course prepares students to take the State Certification Examination. Emphasis is placed on all pertinent codes, piping procedures, duct design, load calculation, psychometrics, installation procedures, and air distribution. Upon completion, students should be prepared to take the contractors exam. **3 Credit Hours**

ACR 203 Commercial Refrigeration

This course focuses on commercial refrigeration systems. Emphasis is placed on evaporators, condensers, compressors, expansion devices, special refrigeration components and application of refrigeration systems. Upon completion, students should be able to service and repair commercial refrigeration systems. **5 Credit Hours**

ACR 205 System Sizing/Air Distribution

This course provides instruction in the load calculation of a structure and system sizing. Topics of instruction include heat loss, heat gain, equipment and air distribution sizing, and factors making acceptable indoor air quality. Upon course completion, students should be able to calculate system requirements. **5 Credit Hours**

ACR 210 Troubleshooting HVACR Systems

This course provides instruction in the use of various meters and gauges used in the HVAC/R industry. Emphasis is placed on general service procedures, system diagnosis and corrective measures, methods of leak detection, system evacuation, charging and performance checks. Upon completion, students should be able to perform basic troubleshooting of mechanical and electrical components of HVAC/R systems.

5 Credit Hours