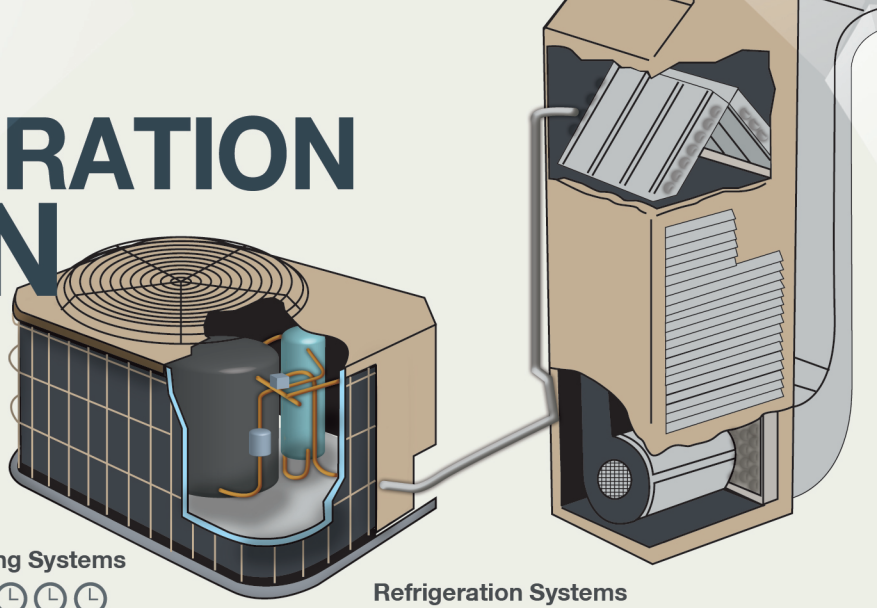
Diploma Program in

A/C & REFRIGERATION TECHNICIAN

8 MONTHS - 24 CREDITS



Fundamentals of Refrigeration

ACR1052

This course is an introduction to basic concepts related to heat and air conditioning cooling, the study of the physical laws relating to refrigerants and basic components of a mechanical refrigeration system for vapor compression. The course will be focused on saving energy and preserving the environment by using green technologies with special attention to new technologies applied to high efficiency HVACR systems, as well as studying the mechanical and safety codes on the most significant topics related to the subject.

Fundamentals of Electricity

ACR1101

The course is an introduction to basic concepts of electricity and magnetism. It includes topics such as: atomic structure of matter, sources of electricity, simple circuits, Ohm's Law and its use in solving loads in series and parallel circuits. It also includes alternating and direct currents, determination of circuit problems, concepts of inductance, capacitance, resistance, impedance, power factor and electricity and the environment, as well as describing how to calculate the electrical power, electrical cable sizing and electrical protection and the use of the multimeter hooked.

Principles & Application of Electricity

ACR1113

A study of electrical circuits applied to air conditioning and heating. Topics include: electrical symbols, schematics real circuits, diagnostics of the most common electrical problems in the compressors' electric motor, and forms or methods used to start a compressor. Other topics include electrical connections and air conditioning system protective controls, as well as explaining and making electrical connections of low voltage components. The course content will be taught through theory and practice.

Prerequisites: ACR1101

Air Conditioning Systems

ACR1500

This course will provide the students with adequate knowledge in order to identify the most common materials used in today's industry as well as the proper understanding of related terminology. Topics covered in this course will permit future electricians to be familiar with current materials and components utilized for electrical projects at residencial, commercial and industrial areas. A description about the diverse types of conductors used in lighting, entrant services, communications and control will be studied, together with explanations on boxes, tubing and fitting for circuit installations. Emphasis is focused on the service and distribution equipment, safety disconnection and fire protection, security, commmunication and digital control devices.

Prerequisites: ACR1052

Electric Motor & Solid State Devices

ACR1152

This course is a study of the general principles of operation of electric motors. The course includes topics such as: types of engines, applications, starting methods, starting and running capacitors, electric motors for compressors and fans, variable speed motors, multi-speed motors. Other topics include electric motors diagrams, safety measures, connecting motors to the power source and testing the electrical measurements. In the workshop the students are faced with different problems and practice how to solve them.

Prerequisites: ACR1101

Refrigeration Systems

ACR1215

This course is a study of the general principles of operation of electric motors. The course includes topics such as: types of engines, applications, starting methods, starting and running capacitors, electric motors for compressors and fans, variable speed motors, multi-speed motors. Other topics include electric motors diagrams, safety measures, connecting motors to the power source and testing the electrical measurements. In the workshop the students are faced with different problems and practice how to solve them.

Prerequisites: ACR1052

Room Air Conditioning & Refrigeration

ACR1023

This course discusses window and wall air conditioners, refrigerators and freezers. Topics include: the electrical system, cleaning methods, the solution of common problems, the air distribution system of a refrigerator, electrical schematics, defrost methods and components. Special attention is paid to applications of new technologies and advances in air conditioning systems and window wall units, refrigerators and freezers designed for high-efficiency energy saving and environmental protection. In workshops, students will acquire skills in handling tools and measurement instruments in the service of and installation of these units, as well as studying the mechanical and safety codes most significant topics relevant to the subject.

= 1 semester credit hour

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*For more information about our graduation rates, the median debt of students who completed the program, and other important information, please visit our website at, www.cbt.edu/academics/disclosure.

CBT College
SCHOOL OF TECHNOLOGY

DIPLOMAPROGRAM

H.V.A.C TECHNICIAN

Stats & Fun Facts!

Program Description

The Air Conditioning Repair Technician program is designed to train the students for an entry-level position in the air conditioning/ refrigeration industry. The program includes theoretical and hands-on courses in the installation, basic design, maintenance, and repair of residential and commercial refrigeration, air conditioning, and heating equipment.

Employment Statistics

= **2,000** employment number

Texas, Florida, California & New York were the states with the highest employment numbers in 2011.

Projected growth 2010-2020

Compared to the other industries, HVAC mechanics & installers have shown a greater percentage in employment change.

HVAC Mechanics & Installers | HVAC Repair & Maintenance | Total Occupations

Certifications

CBT College prepares students to become certified in the following:

- EPA 608 (Universal Technician)
- EPA R-410 A
- EPA PM Technician
- EPA IAQ
- EPA Green Technology
- UNICO CPT Installer

Fun Facts

The first household refrigerator was produced by **Maricel Audiffren** from **General Electric** in ***1911.***

The first Air Conditioner was invented by **Willis Carrier** in ***1902.***

In ***1903***, the **New York Exchange Building** was the first to use an A/C unit.

Information Sources

http://www.bls.gov/oes/current/oes499021.htm

http://www.bls.gov/ooh/Installation-Maintenance-and-Repair/Heating-air-conditioning-and-refrigeration-mechanics-and-installers.htm

http://www.cardomplumbingandheating.com/PlumbingandHeating/2012/04/hvac-fun-facts/

http://federsair.com/blog/?p=60