Common Course Outline
AIRC 110
HVAC Safety, Tools and Methods
3 Semester Hours

The Community College of Baltimore County

Description

AIRC 110 – 3 Credits - HVAC Safety, Tools and Methods explores the tools used in the HVACR trade and how to accomplish basic tasks. The course highlights construction of fittings made of sheet metal and glass duct board for air duct systems. Safe use of tools and safe procedures for soldering and brazing are emphasized.

3 credits: 2 lecture hours per week; 2 lab hours per week
Prerequisite: None

Overall Course Objectives

Upon completion of this course the student will be able to:

1. use hand tools and specified equipment safely;
2. construct fittings and components;
3. identify various types of tubing, piping, and fittings used in air conditioning, refrigeration and heating systems;
4. use hand tools and machines to thread pipe;
5. use a drill press and post grinder;
6. assemble dampers in round air ducts;
7. form flare fittings in copper tubing;
8. form swage fittings in copper tubing;
9. list safety procedures for using torches; and
10. solder and braze copper tubing using various torches and alloys.

Major Topics

I. Safety procedures
II. Hand tools
III. Duct work
IV. Fasteners and connectors
V. Factory fittings
VI. Types of tubing
VII. Flare and swage fittings
VIII. Torch procedures
IX. Soldering and brazing procedures
X. Pipe-threading
XI. Power tools

Grading/exams: Grading procedures will be determined by the individual faculty member and will be provided on the first day of class.

The following will be required for this course:

1. Approved practical project
2. Midterm exam
3. Comprehensive final
4. Minimum of three (3) classroom/lab assignments
5. Minimum of four (4) homework assignments
6. Class discussion and participation

Other Course Information

This is a Heating, Ventilating, Air Conditioning, and Energy Technology program requirement.