

## **AIRC 110**

### **HVAC Safety, Tools and Methods**

3 Credits: 2 Lecture hours per week; 2 lab hours per week

Community College of Baltimore County  
Common Course Outline

#### **Description**

**AIRC 110 – 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.

**Pre-requisites: none**

#### **Overall Course Objectives**

Upon completion of this course, students 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

The Common Course Outline (CCO) determines the essential nature of each course.  
For more information, see your professor's syllabus.

## **Course Requirements**

Grading will be determined by the individual faculty member, but shall include the following, at minimum:

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

Written assignments and research projects: Students are required to use appropriate academic resources in their research and cite sources according to the style selected by their professor.

## **Other Course Information**

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

Date Revised: 6/5/2009