

Common Course Outline
DEMT 112
Heating, Ventilation & Air Conditioning
3 Semester Hours

The Community College of Baltimore County

Description

DEMT 112 -- 3 Credits –Heating, Ventilation & Air Conditioning

integrates the study of components, operations and service procedures used to maintain heating and air conditioning systems in heavy duty vehicles. Laboratory experience will include components replacement and system purging, evacuating, charging and testing.

3 credits: 2 lecture hours per week; 3 laboratory hours per week

Prerequisite: DEMT 101

Overall Course Objectives

Upon completion of this course, students will be able to:

1. comply with personal and environmental safety practices associated with a HVAC system including personal protective equipment and the handling, storage, and disposal of chemicals and materials in accordance with federal, state, and local regulations;
2. verify the need for service or repair of HVAC systems based on unusual operating noises, or visual, smell and touch conditions and determine needed action;
3. diagnose the cause of temperature control problems in the A/C system and determine needed action;
4. identify refrigerant type and check for contamination and determine needed action;
5. evacuate A/C system using appropriate equipment;
6. charge A/C systems with refrigerant;
7. diagnose A/C system problems that cause protection devices (pressure, thermal, and electronic) to interrupt system operation and determine needed action;
8. diagnose system failures resulting in refrigerant loss from the A/C system high pressure relief device and determine needed action;
9. diagnose the cause of failures in HVAC electrical control systems and determine needed action;
10. identify and recover A/C system refrigerant; and
11. handle, label, and store refrigerant in accordance with EPA and appropriate SAE “J” standards.

Major Topics

- I. HVAC systems diagnosis, service, and repair
- II. A/C system and component diagnosis, service, and repair
- III. Heating and engine cooling systems diagnosis, service, and repair
- IV. Operating systems and related controls diagnosis and repair

V. Refrigerant recovery, recycling, and handling

Course Requirements

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. Written paper or suitable practical project
2. Midterm exam
3. Comprehensive final (including a practical exam).

If a written paper is assigned, the following will apply:

- a. Topic of the paper will be selected by the student and should relate to the subject material of the course.
- b. The paper should be six (6) to eight (8) pages in length, typewritten, and double-spaced. It should include in addition to the six (6) to eight (8) pages of text, an author and title page and bibliography utilizing a minimum of three reference resources excluding classroom materials.
- c. All papers are due when 80% of the class sessions are completed.

In addition, students can expect additional grades from the following areas:

4. Quizzes
5. Lab Projects
6. Homework Assignments.

Other Course Information

This course is a Diesel and Equipment Maintenance Technology core course.

Individual faculty members may include additional course objectives, major topics, and other course requirements to the minimum expectations stated in the Common Course Outline.

(8) Date Revised: 10/17/06