

Common Course Outline
DEMT 101
Electrical / Electronic System Repair I
5 Semester Hours

The Community College of Baltimore County

Description

DEMT 101-- 5 Credits-- Electrical / Electronic System Repair I

introduces students to various electrical and electronic components, operations, and service procedures used in heavy duty trucks and equipment. Laboratory experiences include service of the battery, starting systems, charging systems, accessories, chassis wiring, and electronic engine controls.

5 credits: 3 lecture hours per week; 6 laboratory hours per week

Prerequisite: RDNG 052, ENGL 051, MATH 082

Overall Course Objectives

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

1. comply with personal and environmental safety practices associated with an electrical/electronic systems;
2. use wiring diagrams during diagnosis of electrical circuit problems;
3. obtain and interpret digital multimeter (DMM) readings;
4. check voltage and voltage drop in electrical/electronic circuits using a digital multimeter (DMM) and determine needed repairs;
5. check current flow in electrical/electronic circuits and components using an ammeter and determine needed repairs;
6. find shorts, grounds, opens, and resistance problems in electrical/electronic circuits and determine needed repairs;
7. inspect and test power and ground circuits and connections to determine service or replacement as needed;
8. inspect and test switches, connectors, relays, and wires of electrical/electronic circuits to determine repair or replacement as needed;
9. perform battery state-of-charge test and determine needed service;
10. perform battery capacity (load, high-rate discharge) test and determine needed service;
11. diagnose incorrect horn operation and repair as needed; and
12. perform other recommended tasks from the NATEF master course list.

Major Topics

- I. Battery/starter diagnosis and service
- II. Voltage and voltage drop
- III. Compare voltage, current, and resistance
- IV. Ohms law

- V. Electricity circuits
- VI. Integrated circuits testing

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