

# Common Course Outline

## DEMT 105

### Hydraulic System Repair

4 Semester Hours

## The Community College of Baltimore County

### Description

#### **DEMT 105 -- 4 Credits – Hydraulic System Repair**

covers the principles and applications of hydraulic systems. Topics include the operation, disassembly, failure analysis, rebuilding, testing, and troubleshooting of pumps, actuators, reservoirs, lines, fittings, fluids, hydrostatic drives, steering systems, pilot operated systems, and electronic hydraulics.

4 credits: 3 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 hydraulic system including personal protective equipment and the handling, storage, and disposal of chemicals and materials in accordance with federal, state, and local regulations;
2. identify system type and perform system tests and diagnosis;
3. read and interpret system diagrams and schematics;
4. diagnose causes of pump failure, unusual pump noises, temperatures, flow, and leakage problems and determine needed action;
5. service filters and breathers in accordance with manufacturers' recommended procedures;
6. diagnose causes of system contamination and determine needed action;
7. assemble hoses, tubes, connectors, and fittings in accordance with manufacturers' specifications and use proper procedures to avoid contamination;
8. diagnose the cause of incorrect actuator movement and leakage and determine needed repairs;
9. perform control valve operating pressure and flow tests and determine needed action; and
10. inspect pilot control valve linkages, cables, and PTO controls, and adjust, repair, or replace as needed.

### Major Topics

- I. General hydraulic system operation
- II. Pumps
- III. Filtration reservoirs (tanks)
- IV. Hoses, fittings, and connections

- V. Control valves
- VI. Actuators

### **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