

ATOE-2200: MECHANICAL REPAIR

Cuyahoga Community College

Viewing: ATOE-2200 : Mechanical Repair

Board of Trustees:

2001-03-22

Academic Term:

Spring 2019

Subject Code

ATOE - Appd Ind Tech-Operating Engin.

Course Number:

2200

Title:

Mechanical Repair

Catalog Description:

Study of major mechanical systems. Detailed troubleshooting practice and procedures. Clutch diagnosis and repair, types of power trains and undercarriage maintenance also included.

Credit Hour(s):

3

Lecture Hour(s):

3

Lab Hour(s):

0

Requisites

Prerequisite and Corequisite

ATOE-1200 Basic Mechanical Concepts, or departmental approval.

Outcomes

Course Outcome(s):

N/A

Objective(s):

1. 1. Given several problems with bulldozers, troubleshoot, diagnose and recommend solutions.
2. 2. Given several problems with backhoes, troubleshoot, diagnose and recommend solution.
3. 3. Given several problems with graders, troubleshoot, diagnose and recommend solution.
4. 4. Given several problems with cranes, troubleshoot, diagnose and recommend solution.
5. 5. Rebuild major mechanical brake systems.
6. 6. Rebuild major mechanical powertrain systems.
7. 7. Rebuild major mechanical transmission systems.

Methods of Evaluation:

1. Quizzes
2. Exams
3. Classroom participation

Course Content Outline:

1. Troubleshooting the diesel fuel
 - a. Requirements of fuel systems
 - b. In-line injection pumps

- c. Main parts of the pump
- d. Air systems
- 2. Troubleshooting cooling system
 - a. Function
 - b. Types of cooling systems
 - c. Hose installation
 - d. Antifreezes
 - e. Servicing the cooling system
 - f. Rust-proofing the system
 - g. Cleaning and flushing the cooling system
 - h. Cooling system leakage
- 3. Troubleshooting hydraulic system
 - a. Simple hydraulic system
 - b. Components of a hydraulic system
 - c. Hydraulic oil
 - d. Reservoir
 - e. Strainers, filters, breathers
 - f. Pumps
 - g. Actuators
 - h. Transmission lines
 - i. Principles of fluid power hydraulics
- 4. Troubleshooting engine electrical systems
 - a. Battery interconnection
 - b. Series connection
 - c. Parallel connection
 - d. Cranking motors
 - e. Ignition systems
 - f. Storage battery
 - g. Basic troubleshooting procedures
- 5. Fuel and condition
 - a. Types of fuels
 - b. Problems to consider
- 6. Brake repair
 - a. Replacing braking system
 - b. Problem diagnosis

Resources

International Union of Operating Engineers, Local #18--Apprenticeship and Training. "Introductory Mechanics Training for Operating Engineers, First Year Student Workbook"

International Union of Operating Engineers, Local #18--Apprenticeship and Training. "Rough Terrain Forklift Training, Student Workbook"

"Construction Equipment Magazine"

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