



DEM206 Basic GE Mechanical

Credit Hours: 3

Description:

This is the second in a series of four courses in Locomotive Mechanics. This course is designed to introduce the student to the basic operation, maintenance, repair requirements and trouble shooting for GE diesel engines and support systems.

Supplies:

Please check with the instructor for details about any supplies that may be required.

Objectives:

1. Identify engine components from a diagram.
2. Describe and list the components of four-stroke engine theory.
3. Explain and distinguish problems with the fuel system.
4. Identify the parts and distinguish problems with the lubricating oil system.
5. Identify the parts and purpose of the cooling system.
6. List the steps in troubleshooting the crankcase ventilation system.
7. Identify the parts of the governor over-speed system.
8. Explain the operation of the equipment air system.
9. List the steps in inspecting the crankcase.
10. Interpret and apply the proper procedure for removal and reassembly of the power assembly.
11. Interpret and apply the proper procedure for removal and reassembly of the MUI cam section.

Content Outline and Competencies:

I. GE Locomotive and Engine Orientation

- A. Identify engine components from a diagram.
- B. Describe engine components.

II. Four Stroke Cycle Theory

- A. Identify and list the components for the four-stroke engine theory.
- B. Identify the firing sequence of a single cylinder on a four-stroke engine.
- C. Explain the operation of exhaust valves and intake ports.

III. Fuel System

- A. Identify the fuel system components
- B. Describe fuel system component operation.
- C. Identify fuel system defects from given scenarios.

IV. Lubricating Oil System

- A. Identify components of the lubricating oil system.
- B. Explain the purpose of the lubricating oil system.

V. Cooling System

- A. Explain the purpose of the cooling system.
- B. Identify the sub-systems found in the system.

VI. Crankcase Ventilation System

- A. Explain the purpose of the ventilation system.
- B. Identify failed components from given scenarios.

VII. Governor Over-speed System

- A. List the components of the governor over-speed system.
- B. Identify defects from given scenarios.

VIII. Equipment Air System

- A. Explain the operation of the equipment air system.
- B. Identify failed components which comprise the system.

IX. Crankcase Inspection

- A. List the steps in inspecting the crankcase.
- B. Identify the location of flaws in the crankcase.
- C. Select proper remedies from given scenarios.

X. Power Assembly

- A. Apply proper procedures for removal and reassembly of the power assembly.
- B. Apply proper procedures to adjust engines to correct settings.
- C. Explain basic engine operation.

XI. MUI Cam Section

- A. Apply proper procedures for removal and reassembly MUI cam section.
- B. Identify failed components from different scenarios.

Guidelines for Success:

Assessment Plan – Assessment is an integral part of the educational process at Washburn Tech and accurate feedback is an important tool in continuously improving the institution's technical programs. Students can expect to participate in assessment activities prior to entry into programs, within specific courses and following program completion for specific fields of study.

Grading Criteria:

- 90-100% A
- 80-89% B
- 70-79% C
- Below 70% Failing

- Labs Pass/Fail

Instruction includes 50% lecture and 50% laboratory exercises.

Attendance

Classroom attendance is required. Class attendance requirement is 90%.

Disability

The Americans with Disabilities Act (ADA) Office is responsible for assisting in arranging accommodations and for identifying resources at Washburn Institute of Technology for persons with disabilities. Qualified students with disabilities **MUST** self-identify by completing an application. In addition students must provide appropriate medical documentation to the ADA coordinator to be eligible for accommodations. New requests for accommodations should be submitted at least two months or more prior to the date the accommodations are needed. However, please contact the ADA office as soon as a need may arise. Depending on the accommodation request, four to eight weeks lead time may be needed for timely and effective provision of accommodations. The ADA Office coordinates and assists in arranging accommodations it deems appropriate for eligible students on a case-by-case basis.

If you are a student with a disability that may substantially limit your ability to participate in any of our classes and you believe that you will need accommodations, it is your responsibility to contact:

ADA Coordinator

Phone: 785-228-6356

Email: gloria.christian@washburn.edu

