

Department:

Transportation Division; Diesel Technology Program

Course Description:

This course covers standard Db, DB2, and DM pump disassemble inspection and overhaul. It teaches removal, installation, and timing procedures on the above injection pumps. This course also teaches test stand operation, pump installation on the test stand, and proper calibration of the injection pump.

Course Competencies:

Upon completion of the course, the student should be able to:

1. Determine maintenance needed for given situations Course Competencies
2. Interpret maintenance troubleshooting charts
3. Inspect engine coolant level and condition
4. Pressure test coolant system and radiator cap
5. Take oil sample, and change oil and filter(s)
6. Inspect and test indicator system components
7. Perform a daily preventive maintenance check
8. Perform a mileage preventive maintenance check
9. Perform an engine tune-up

Course Content:

- A. Preventive Maintenance and Troubleshooting
 - 1) Setting Up a Preventive Maintenance PM Program
 - a) Daily Walk-Around Inspection
 - b) Level One Maintenance
 - c) Level Two Maintenance
 - d) Level Three Maintenance
- B. Career Opportunities
 - 1) The Diesel Field
 - a) Diesel Engine and Equipment Manufacturers
 - b) Diesel Technician
 - c) Shop Supervisors
 - 2) ASE Certification
 - a) ASE Test Content
 - 3) A Few Final Words
 - a) Working in the Field
- C. Engine Blocks
 - 1) Cylinder Blocks
 - 2) Accessing Diesel Engine Components
 - a) Accessing Components in a Stationary Engine
 - b) Accessing Components in a Mobile Engine

- D. Crankshafts
 - 1) Diesel Crankshafts
 - a) Crankshaft Terminology
 - b) Crankshaft Lubrication
 - c) Crankshaft Classification
 - d) Crankshaft Service
 - 2) Bearing Inspection
 - a) Bearing Material
 - b) Types of Diesel Engine Bearings

Learning Assessments:

Competencies will be assessed by assignments, case problems, quizzes, chapter tests, hands-on projects, lab assignments, a midterm test, and a final test. The test can be in the objective format or in a problem solving format.

Instructional Materials:

Textbook: Mack, James P., Daniels, Jason A., DeHart, Mark A., and Norman, A. (2022). *Diesel Engine Technology* (9th ed.). Tinley Park, IL: The Goodheart-Willcox Company, Inc. ISBN-13: 978-1-64564-685-3

Workbook: Mack, James P., Daniels, Jason A., DeHart, Mark A., and Norman, A. (2022). *Diesel Engine Technology* (9th ed.). Tinley Park, IL: The Goodheart-Willcox Company, Inc. ISBN-13: 978-1-64564-686-0

Guidelines for Requesting Accommodations Based on Documented Disability or Medical Condition

It is the intention of Highland Community College to work toward full compliance with the Americans with Disabilities Act, to make instructional programs accessible to all people, and to provide reasonable accommodations according to the law.

Students should understand that it is their responsibility to self-identify their need(s) for accommodation and that they must provide current, comprehensive diagnosis of a specific disability or medical condition from a qualified professional in order to receive services. Documentation must include specific recommendations for accommodation(s). Documentation should be provided in a timely manner prior to or early in the semester so that the requested accommodation can be considered and, if warranted, arranged.

In order to begin the process all students **must** complete the “Disabilities Self-Identification Form” on our [Disability Services website](#).

This form can also be accessed at the Highland Community College homepage under Students Services/Student Resources/Disability Service or by contacting the Disabilities Coordinator.

A Note on Harassment, Discrimination and Sexual Misconduct

Highland Community College seeks to assure all community members learn and work in a welcoming and inclusive environment. Title VII, Title IX, and College policy prohibit harassment, discrimination and sexual misconduct. Highland Community College encourages anyone experiencing harassment, discrimination or sexual misconduct to talk to report to the Vice President for Student Services, the Human Resources Director or complete an [online report](#) about what happened so that they can get the support they need and Highland Community College can respond appropriately.

There are both confidential and non-confidential resources and reporting options available to you. Highland Community College is legally obligated to respond to reports of sexual misconduct, and therefore we cannot guarantee the confidentiality of a report, unless made to a confidential resource. Responses may vary from support services to formal investigations. As a faculty member, I am required to report incidents of sexual misconduct and thus cannot guarantee confidentiality. I must provide our Title IX coordinator with relevant details such as the names of those involved in the incident. For more information about policies and resources or reporting options, please review our [Equity Grievance Policy](#).