

Department:

Transportation Division; Diesel Technology Program

Course Description:

This course teaches disassembly, inspection, and troubleshooting of the three major types of clutch systems used by present engine manufacturers. The course also teaches installation techniques and adjustments.

Course Competencies:

The learning outcomes and competencies detailed in this syllabus meet or exceed the learning outcomes and competencies specified by the Kansas Core Outcomes Groups for this course as approved by the Kansas Board of Regents.

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

1. Identify air brakes
2. Inspect air brakes
3. Diagnose air brakes
4. Repair air brakes
5. Identify hydraulic brakes
6. Inspect hydraulic brakes
7. Diagnose hydraulic brakes
8. Repair hydraulic brakes

Course Content:

- A. Truck Brake Systems
 - 1) Air Brake Sub-Systems
 - 2) The Air Supply Circuit
 - 3) Primary Circuit
 - 4) Secondary Circuit
 - 5) Trailer Circuit
 - 6) Foundation Brakes
 - 7) Air Brake System Components
- B. Hydraulic Brakes and Air-Over-Hydraulic Brake Systems
 - 1) Hydraulic Brake System Components
 - 2) Air-Over-Hydraulic Brake Systems
 - 3) Hydraulic Brake Service Procedures
- C. Anti-lock Braking System (ABS) and Electronic Braking System (EBS)
 - 1) Basics of ABS Operation
 - 2) ABS Components
 - 3) ABS Configurations

- 4) Automatic Traction Control (ATC) Systems
 - 5) Trailer ABS
- D. Air Brake Servicing
- 1) Maintenance and Safety
 - 2) Assessing Brake System Performance
 - 3) Supply Circuit Service
 - 4) Service Application Circuit
 - 5) Parking/Emergency Circuit

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](#).