Department:

Automotive Technology

Course Description:

This course is designed to provide students with an understanding of how various basic and antilock brake systems work.

Course Competencies:

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

1. Perform systemized pressure and travel calculations utilizing Pascal’s Law.
2. Complete service work orders.
3. Determine appropriate system pressure tests using service specifications.
4. Determine brake system concerns and necessary actions.
5. Diagnose poor stopping, pulling, or dragging concerns caused by malfunctions in the hydraulic system.
6. Determine how to inspect, fabricate, and replace brake lines and hoses.
7. Determine the service specifications pertaining to the removal, cleaning, and refinishing procedures on brake drums.
8. Apply drum brake repair and replacement procedures.
9. Diagnose poor stopping, noise vibration, pulling, grabbing, dragging, or pedal pulsation concerns on disc brake vehicles.
10. Determine disc brake repair and replacement procedures.
11. Determine how to caliper piston retractions.
12. Diagnose wheel bearing noise, wheel shimmy, and vibration concerns.
13. Determine how to remove, inspect, and replace bearing and hub assemblies.

Course Content:

A. Brake System Components and Performance Standards
B. Braking System Principles
C. Brake Hydraulic Systems
D. Hydraulic Valves and Switches
E. Brake Fluid and Lines
F. Brake Bleeding Methods and Procedure
G. Wheel Bearings and Service
H. Drum Brake Parts and Operation
I. Drum Brake Diagnosis and Service
J. Parking Brake Operation, Diagnosis, and Service
K. Machining Brake Drums and Rotors
L. Power Brake Unit Operation, Diagnosis, and Service
M. ABS Components and Operation
N. ABS Diagnosis and Service

Learning Assessments:

Assessments may include quizzes, tests, project work, demonstrations, observations, weekly assignments, and written papers.

Instructional Materials:


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” at this link: https://highlandcc.edu/pages/disability-services.

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.