AUTO 1500

Division: Career and Technical Education
Department: Transportation Technology
Course: AUTO 1500
Title: Automotive Brakes
Catalog Description:

This course covers principles, repair, and adjustment of the automotive brake system and includes hydraulic theory, diagnosis, and service of brake systems. Students study drums, disks, power units, and Anti Lock Braking System (ABS) brakes.

General Education Requirements: N/A
Semesters Offered: TBA
Credit/Time Requirement: Credit: 5; Lecture: 2; Lab: 9
Clock/Hour Requirements: 165
Offered for Non-Credit: Yes
Prerequisites: N/A

Corequisites: N/A

Justification:

This course is required for Automotive Service Excellence (A.S.E.) certification. It is approved by the program advisory committee.

Student Learning Outcomes:

Upon successful completion of this course, students will be able to safely perform the tasks listed in the current edition of *A.S.E. Certification for Automobile Training Programs*.

Content:

Upon completion of this course, students will understand and be able to explain:

- safety
- history and evolution of automotive brake systems
- brake system fundamentals
- master cylinders and brake fluids
- hydraulic theory, lines, valves, and switches
- power brake systems

- disc and drum brake systems
- parking brake systems
- anti lock brake theory and systems
- relationship of related systems: tires, wheels, bearings, suspension, etc.

General Education Outcomes:

5) Apply a cultural and historical awareness to a variety of phenomena.

Students will develop an understanding of the history of automotive brake systems and its relationship to past, current, and future developments in the automotive field.

Applied Education Outcomes:

1) Students will acquire entry-level skills specific to and appropriate for employment in their chosen field of study.

Students will diagnose, repair, test, and study modern automotive braking systems similar to those found in the industry.

3) Students will demonstrate safe practices and awareness of potential hazards in their field of expertise.

Students will study, test on, and practice a safe work environment in the lab area.

Key Performance Indicators:

Student Learning Outcomes will be assessed by two or more of the following Key Performance Indicators:

- exams
- assignments
- student feedback as per ASE requirements
- student transferring to other post secondary institutions
- student performance in subsequent courses.

Representative Text and/or Supplies:

- Eichhorn, Lane and Clifton Owen, *Automotive Brake Systems,* current edition, Thomson/Delmar Learning.

Optimum Class Size: 10
Maximum Class Size: 18

Signatures:

I hereby submit this course syllabus:

Brent Reese, BS, Associate Professor

I hereby find this course consistent with the goals and resources of the Transportation Technology Department:

Brent Reese, BS, Associate Professor, Chair

I hereby find this course consistent with the goals and resources of the Career and Technical Education Division:

Michael P. Medley, MBA, Assistant Professor, Dean

I have discussed the need for library resources related to this class with the person submitting the syllabus:

Lynn Anderson, MLIS, Technical Services Librarian (Main Campus)

Michelle Olsen, MLS, Campus Librarian (Richfield Campus)