



AUTO 1505 (formerly AUTO 1500)

Division: Career and Technical Education

Department: Transportation Technology

Course: AUTO 1505 (formerly AUTO 1500)

Title: Automotive Brakes Lab

Catalog Description:

This course gives students the hands on lab experience for AUTO 1501. 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. **The lab AUTO 1505 must be taken concurrently with the lecture AUTO 1501.**

General Education Requirements: N/A

Semesters Offered: TBA

Credit/Time Requirement: Credit: 3; Lecture: 0; Lab: 9

Clock/Hour Requirements: 135

Offered for Non-Credit: Yes

Prerequisites: N/A

Corequisites: AUTO 1501

Justification:

This course is required for Automotive Service Excellence (A.S.E.) certification. It is approved by the advisory committee for an AAS degree in Automotive Technology.

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:

- complete shop tasks as outlined in the current edition of *A.S.E. Certification for Automobile Training Programs*
- student feedback as per A.S.E. requirements
- students passing A.S.E. tests
- students 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: 15

Maximum Class Size: 25

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)