



AUTO 1405 (formerly AUTO 1400)

Division: Career and Technical Education

Department: Transportation Technology

Course: AUTO 1405 (formerly AUTO 1400)

Title: Automotive Suspension and Steering Lab

Catalog Description:

This course gives students the hands on lab experience for AUTO 1401. This course covers repair and adjustment suspension and steering systems. Students study steering gears, rack and pinion, conventional and McPherson struts, alignment angles, and alignment with a computerized four wheel alignment fixture. **This lab AUTO 1405 must be taken concurrently with the lecture AUTO 1401.**

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 1401

Justification:

This course is required for Automotive Service Excellence (A.S.E.) certification. It is also 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 be able to understand and explain:

- safety
- history and evolution of automotive suspension systems
- wheel bearings
- tire and wheel design and repair
- four wheel drive front end and types

- suspension electrical and electronic system design and operation
- four-wheel alignment
- spring types
- shock absorber and strut design types
- suspension angles; i.e. camber, caster, and toe.

General Education Outcomes:

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 suspension 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:

- Knowles, Don, *Automotive Suspension and Steering 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)