AUTO 1305 (formerly AUTO 1300)

Division: Career and Technical Education
Department: Transportation Technology
Course: AUTO 1305 (formerly AUTO 1300)
Title: Automotive Manual Transmissions/Transaxles and Power Trains Lab
Catalog Description:

This course gives students the hands on lab experience required for AUTO 1301. This course covers theory, operation, diagnosis, maintenance, and overhaul of the clutch, standard transmission, standard trans-axles, drive lines, differentials, front wheel drive units, and four wheel drive components. **This lab AUTO 1305 must be taken concurrently with the lecture AUTO 1301.**

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 1301

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 be able to understand and explain:

- safety
- drive train theory
- clutch design and operation
- manual transmission/transaxle design, operation, and maintenance
- front drive axle design, construction, types, maintenance, and repair

- drive shafts and universal joints construction, types, maintenance, and repair
- differential and drive shaft operation, types, and repair
- four-wheel drive system design and types
- drive train electrical and electronic system design and operation.

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 on, and study manual transmission and drive train systems similar to those f ound in industry.

2) Students will become aware of industry specific certification and develop skills sufficient to acquire the same.

The tests and homework for this class are designed to simulate and prepare the students to take A.S.E. certification tests.

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:

- Erjavec, Jack, *Manual Transmissions and Transaxles*, 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)