



AUTO 1200

Division: Career and Technical Education

Department: Transportation Technology

Course: AUTO 1200

Title: Automotive Automatic Transmissions and Transaxles

Catalog Description:

This course covers theory, operation, diagnosis, and overhaul procedures of automotive automatic transmissions and trans-axles, including planetary gearing, valve bodies, computerized transmission controls, and torque converter lock-up.

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:

Course objectives will be accomplished by providing students with learning experiences in the following subject areas:

- safety
- torque converters
- torque converter clutch control
- planetary gear operation
- planetary gear systems in transmissions/trans-axles

- hydraulic fundamentals
- pumps and valves
- hydraulic operation in transmissions/trans-axles
- fluid and seals
- electronic shift control circuits
- diagnosis of torque converter and torque converter clutch
- diagnosis of electronic shift control circuits
- transmission/trans-axle removal and installation
- transmission/trans-axle disassembly
- transmission/trans-axle overhaul practices
- sub-assembly reconditioning
- transmission/trans-axle assembly practices
- Chrysler automatic transmission/trans-axle summaries
- Ford automatic transmission/trans-axle summaries
- General Motors automatic transmission/trans-axle summaries.

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 utilize electronic, written reference manuals, and computer diagnostics to identify, troubleshoot, and repair transmissions and other related components. Students will participate in transmission and other diagnostic procedures.

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 ASE 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:

- 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:

- Erjavec, Jack, Ronald, *Automatic Transmissions and Transaxles*, 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)