



AUT 53 - Automatic Transmissions/Transaxles Lab

Catalog Description

Transfer Status: CSU

Prerequisite: AUT 3 (or concurrent enrollment)

Unit(s): 3.00

Lab: 153.00 Contact hours/0.00 Out of class hours/153.00 Total hours/3.00 Unit(s)

Total: 153.00 Contact hours/0.00 Out of class hours/153.00 Total hours/3.00 Unit(s)

Course Description: This course enhances skills in diagnosing, testing, and repair procedures of automotive transmissions/transaxles, drive lines and axles. Shop practice includes diagnostics, testing, and repairing of each system.

Objectives

Upon successful completion of this course, the student should be able to:

1. Identify the different types of automatic transmissions and transaxles found in today's cars and trucks.
2. Correctly identify the procedure then perform a fluid level check on various automatic transmissions.
3. Remove, disassemble, reassemble and install a transmission/transaxle using special tools and jigs.
4. Describe the operating characteristics of the mechanical and hydraulic systems found in an automatic transmission/transaxle.
5. Service an automatic transmission by replacing the filter and doing a fluid exchange using current industry practices.
6. Use a scan tool and pressure gauges to measure hydraulic pressures and access transmission related Diagnostic Trouble Codes (DTC's).
7. Interpret pressure readings and scan tool data to determine the root cause of transmission failures.

Course Content

Topic Titles / Suggested Time Topic	
Topics	Lab Hrs
Transmission identification using Mitchell or All Data and a Vehicle Identification Number (VIN).	5.00
Transmission fluid level check procedures.	10.00
Transmission tear down.	10.00
Transmission power flow through different planetary components.	30.00
Transmission holding clutches and hydraulic operation.	4.00
Transmission turning clutches and hydraulic operation.	4.00
Transmission one way clutch operation.	3.00
Transmission pump types and pressure regulation.	10.00
Valvebody and valve movement during shifts.	10.00
Transmission reassembly.	10.00
On car transmission pressure testing using scan tools and pressure gauges.	6.00
Using a scan tool to retrieve transmission related DTC's.	6.00
Using a scan tool to record transmission related data.	6.00
Using a scan tool to interpret adaptive values.	6.00
Using scan tools and pressure gauges to diagnose transmission related concerns.	18.00
Torque converter operation and transmission/transaxle removal and installation.	15.00
Total Hours: 153.00	

Methods of Instruction

- A. Class Activities
- B. Collaborative Group Work
- C. Demonstrations
- D. Laboratory Experiments
- E. Problem-Solving Sessions

Methods of Evaluation

- A. Demonstration
- B. Class participation

- C. Lab Projects
- D. Final Examination
- E. Performance Examinations

Examples of Assignments

Reading Assignments

1. Using Mitchell or All Data, look up the fluid level check procedure for an assigned vehicle. Be prepared to discuss with your instructor.
2. Using the supplied technical manual for the transmission used in lab, interpret the valve sequencing for up-shifts from first to fourth. Be prepared to discuss with your instructor.

Writing Assignments

1. After completing the required transmission services, write a story on the repair order in at least 100 words to industry standards and make sure it includes the 3 C's.
2. In your workbook, provide a detailed description of the process for flushing the cooler after removing a transmission. Your response must include all steps outlined in Mitchell or Alldata.

Out-of-Class Assignments

1. Not applicable.

Recommended Materials of Instruction

Erjavec, J., et al. (2025). Today's Technician: Automatic Transmissions and Transaxles Classroom Manual and Shop Manual. *Cengage*, 8th. 9780357935040.

Minimum Qualifications

Automotive Technology

Created/Revised by: Kielb, Craig

Date: 12/01/2025