South Central College

AST 2452  Automatic Transmission II

Course Outcome Summary

Course Information

Description
This course is a hands-on lab class in which various transmissions and transaxles are overhauled, adjusted and bench tested. Basic overhaul techniques and special tool and gauge usage are included. Prior knowledge gained by successful completion of AST1112 and AST2442 is required for student success in this class. 2 Cr (1 lect/pres, 1 lab, 0 other)

Total Credits 2
Total Hours 48

Types of Instruction

Instruction Type Credits/Hours
Lecture
Lab

Pre/Corequisites
Admission into the Automotive Service program.

Institutional Core Competencies

Critical and Creative Thinking - Students will be able to demonstrate purposeful thinking with the goal of using a creative process for developing and building upon ideas and/or the goal of using a critical process for the analyzing and evaluating of ideas.

Course Competencies

1. Exhibit professionalism
   Learning Objectives
   - Display shop safety
   - Perform shop safety

2. Diagnose automatic transmission/transaxle
   Learning Objectives
   - Install tester version automatic trans/transaxle
   - Perform automatic trans/transaxle pressure test, including transmissions/transaxles equipped with electronic pressure control: determine necessary action
   - Perform stall test
Perform dyno or road test

3. **Disassemble automatic transmission**

   **Learning Objectives**
   - Identify trans/transaxle
   - Identify special automatic trans/transaxle tools/usage
   - Clean trans/transaxle, inspect case, bores, passages, mating surfaces, bushings and vents
   - Demonstrate parts catalogues use
   - Prepare transmission / transaxle repair bill
   - Explain automatic transmission power flow
   - Inspect and replace external seals, gaskets, and bushings.
   - Inspect bands and drums
   - Inspect / measure or replace thrust washers / bearings and bushings
   - Inspect oil delivery circuits, including seal rings, ring grooves, and sealing surface areas, feed pipes, orifices, and check valves/balls.
   - Inspect, measure, clean, and replace valve body (includes surfaces, bores, springs, valves, sleeves, retainers, brackets, check-valves/balls, screens, spacers, and gaskets).
   - Inspect, measure, and reseal oil pump assembly and components.
   - Inspect / repair or replace governor / cover / seals / sleeve / valve / weights / springs / retainers and gear
   - Inspect and measure planetary gear assembly components (includes sun, ring gear, thrust washers, planetary gears, and carrier assembly); determine necessary action.
   - Bench air test automatic transmission units

4. **Assemble automatic transmission**

   **Learning Objectives**
   - Perform converter service, Install and seat torque converter to engage drive/splines.
   - Flush trans/transaxle cooler
   - Install trans/transaxle using manufacturers service information
   - Perform lock-up converter system tests; determine necessary action
   - Perform dyno or road test

5. **Disassemble automatic transaxle**

   **Learning Objectives**
   - Identify trans/transaxle
   - Identify special automatic trans/transaxle tools/usage
   - Clean trans/transaxle, inspect case, bores, passages, mating surfaces, bushings and vents
   - Demonstrate parts catalogues use
   - Prepare transmission / transaxle repair bill
   - Inspect oil delivery circuits, including seal rings, ring grooves, and sealing surface areas, feed pipes, orifices, and check valves/balls.
   - Inspect transaxle drive, link chains, sprockets, gears, bearings, and bushings; perform necessary action.
   - Inspect power transfer gear train condition
   - Inspect and measure planetary gear assembly components (includes sun, ring gear, thrust washers, planetary gears, and carrier assembly); determine necessary action.
   - Inspect thrust washers / bearings and bushings
   - Inspect, measure, repair or replace final drive and adjust final drive clearance
   - Inspect, measure, clean, and replace valve body (includes surfaces, bores, springs, valves, sleeves, retainers, brackets, check-valves/balls, screens, spacers, and gaskets).
   - Inspect or replace trans/transaxle speedometer drive gear / driven gear or VSS and retainers
   - Replace automatic transaxle axle seals
   - Bench air test automatic transaxle units

6. **Assemble automatic transaxle**

   **Learning Objectives**
   - Perform converter service, Install and seat torque converter to engage drive/splines.
   - Flush trans/transaxle cooler
   - Install trans/transaxle using manufacturers service information
   - Perform lock-up converter system tests; determine necessary action
   - Perform dyno or road test
SCC Accessibility Statement

South Central College strives to make all learning experiences as accessible as possible. If you have a disability and need accommodations for access to this class, contact the Academic Support Center to request and discuss accommodations. North Mankato: Room B-132, (507) 389-7222; Faribault: Room A-116, (507) 332-7222.

Additional information and forms can be found at: www.southcentral.edu/disability

This material can be made available in alternative formats by contacting the Academic Support Center at 507-389-7222.