AUTO 151
Automotive Automatic Transmissions
5 Credits: 2 Lecture, 9 Lab hours

Community College of Baltimore County
Common Course Outline

Description

AUTO 151 – Automotive Automatic Transmissions: is a course in which students are introduced to the diagnosis and repair of automatic transmissions and transaxles. Topics include disassembly, inspection, component repair, adjustments, reassembly, and external adjustments.

Pre-requisites: AUTO 136, AUTO 141

Overall Course Objectives

Upon completion of this course, students will be able to:

1. interpret and verify transmission related complaints;
2. verify proper motor operation to determine needed repairs;
3. perform transmission pressure and stall tests to interpret results;
4. inspect, adjust, or replace manual shift control systems, throttle linkages or cables, and check gear select indicator operation (as applicable);
5. service transmission, perform a visual inspection and replace fluids and filters;
6. inspect, measure, clean, and replace the valve body such as valve body surfaces and bores, springs, valves, sleeves, retainers, brackets, check-balls, screens, spacers, and gaskets;
7. check and adjust valve body bolt torque;
8. inspect internal transmission parts to determine needed repairs;
9. disassemble, clean, and inspect transmission/transaxle;
10. assemble transmission/transaxle;
11. measure endplays or preload to determine needed service;
12. inspect, measure, and replace thrust washers and bearings;
13. inspect and measure planetary gear assemblies and replace as needed;
14. inspect transaxle drive, link chains, sprockets, gears, bearings, and bushings and replace as needed;
15. inspect clutch drum, piston, check-balls, springs, retainers, seals, friction, and pressure plates and replace as needed;
16. measure clutch packs clearance and adjust as needed;
17. air test operation of clutch and servo assemblies; and
18. perform all required Automotive Service Excellence (ASE) Education Foundation tasks from the ASE master course list.

Major Topics

I. Automatic transmission theory and operation

II. Torque converter operation
III. Hydraulic clutch operation
IV. Control valve body

Course Requirements

Grading will be determined by the individual faculty member, but shall include the following, at a minimum:

- three quizzes
- weekly lab projects
- research paper (6-8 pages typed) or obtain the ASE Professional Certification
- three homework assignments
- active engagement in class activities
- one midterm exam
- one comprehensive final exam with a written component and a hands-on individual assessment

Written assignments and research projects: Students are required to use appropriate academic resources in their research and cite sources according to the style selected by their professor.

Other Course Information

This class combines lab with lecture and students apply knowledge learned in a hands-on environment.

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