COURSE NUMBER & TITLE: ASES 2022: Transmission & Transfer Case Controls
CREDITS: 2 (1 Lec/ 1 Lab)
PREREQUISITES: Instructor approval.

CATALOG DESCRIPTION: Transmission & Transfer Case Controls covers the interaction between an electronic controller and the operation of the automatic transmission and the 4x4 transfer case. Theory of operation and proper diagnostic procedures are included. Use of the scan-tool and digital lab scope to assist in proper diagnosis will also be covered.

OUTLINE OF MAJOR CONTENT AREAS:
1. Review electronic controller operation
2. Review digital scope operation
3. Review amp clamp usage
5. Diagnosis of the GM electronic automatic transmission.
7. Diagnosis of the Ford electronic automatic transmission.
8. Operation of the Chrysler automatic transmission controls.
9. Diagnosis of the Chrysler automatic transmission.
10. Operation of the domestic electronic 4X4 transfer case controls.
11. Diagnosis of the domestic electronic 4X4 transfer case controls.
12. Proper road testing technique for electronic automatic transmissions
13. Proper road testing technique for electronic transfer case operation.

COURSE GOALS/OBJECTIVES/OUTCOMES:
1. Students will check for proper electronic pressure control operation with scan tools.
2. Students will clear transmission fault codes.
3. Students will check for proper torque converter lockup clutch operation with a scan tool.
4. Students will check electrical circuit operation using the digital lab scope and amp clamp.
5. Students will diagnose electronic transmission/transaxle control systems using appropriate test equipment and service information.
6. Students will inspect, test, adjust, repair, or replace electrical/electronic components and circuits including computers, solenoids, sensors, relays, terminal, connectors, switches, and harnesses.
MNTC GOALS AND COMPETENCIES MET:
N/A

HCC COMPETENCIES MET:
Working Productively & Cooperatively
Communicating Clearly & Effectively
Thinking Creatively & Critically

STUDENT CONTRIBUTIONS:
The student will:
1. Attend all class sessions.
2. Participate in class activities and discussions.
3. Request assistance when needed.
4. Complete and hand in assigned work when due.

Attendance is critical: if the student is not present, they cannot participate in or contribute to the learning process.

STUDENT ASSESSMENT SHALL TAKE PLACE USING INSTRUMENTS SELECTED/DEVELOPED BY THE COURSE INSTRUCTOR.

ADDITIONAL INFORMATION:
Tasks lists, handouts, and other materials will be provided.
Safety glasses are required in the lab.

Curriculum Committee Approval Date: April 3, 2018

AASC APPROVAL DATE: April 18, 2018
REVIEW DATE: April 2023