AUTO G181: AUTOMOTIVE EXPRESS SERVICE

Item	Value
Curriculum Committee Approval Date	02/07/2023
Top Code	094800 - Automotive Technology
Units	4 Total Units
Hours	108 Total Hours (Lecture Hours 54; Lab Hours 54)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	No
Open Entry/Open Exit	No
Grading Policy	Standard Letter (S)

Course Description

This course focuses on the skills required to be successful as an entry-level automotive technician. Proper vehicle inspection, maintenance, and repair skills presented in this course are essential to all areas of the automotive industry. This course aligns with multiple automotive manufacture procedures and best practices in regards to factory scheduled vehicle inspection and maintenance. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. Course Outcomes
2. Analyze automotive systems and related components for normal system operation.
3. Use diagnostic tools and equipment for automotive repair.
4. Perform vehicle multi-point inspections per manufacture's service procedures.
5. Perform precision torque applications.

Course Objectives

- 1. Perform a scheduled maintenance service with 100% accuracy under designated time constraints in both solo and two person team configurations while maintaining industry safety standards.
- 2. Recall vehicle specific service information and procedures required for inspection and maintenance.
- 3. Identify and inspect automotive system specific components.

Lecture Content

Introduction to Automotive Safety Automotive safety certificate Personal Equipment Environmental Culture of shop safety Service Information Resources Electronic service publications Service procedures and specifications Technical Service Bulletins (TSB) Service news articles Service manual library Tools and Equipment Basic hand tools Factory service tools Precision tools Shop equipment Shop Preparation Efficiency through set up Clean up procedures Multi-point Vehicle Inspection Interior and exterior inspection Lighting operation service Windshield wiper and washer operation and service Parking brake operation Horn operation Clutch operation Cabin air filter inspection and replacement Battery performance testing Conductance testing Memory saver module application Replacement Charging Jump starting procedure Underhood inspection Fluid level inspection and adjustment Drive belt inspection and replacement Radiator hose inspection Engine air filter element replacement Under vehicle inspection Brake lines and hoses Shock absorber and strut Tie rod ends and boot Exhaust system Fluid leaks Drive shaft boots and constant velocity boots and bands Tire and wheel inspection Sidewall information Pressure Tire Pressure Monitor System (TPMS) calibration Tread depth Tread wear pattern Rotations Damage Brake condition inspection Disc brake system Brake pad lining thickness Brake caliper inspection Brake hose and line inspection Drum brake system Brake shoe lining thickness Drum brake hardware inspection Wheel cylinder inspection Parking brake system Manual parking brake operation Parking brake cable inspection Caliper based parking brake Drum brake based parking brakes Electric parking brake operation Service Choreography Solo technician Two technician team Multi-Point Vehicle Inspection (MPVI) documentation Fasteners and Torque Fasteners for automotive use Fastener types Metric Standard Pre-torque Final torque Maintenance Monitor Systems Oil life indicators Service intervals

Lab Content

Shop Safety Personal Personal safety responsibilities Equipment Safe vehicle lifting procedures Express service hoist Two-post hoist Environmental Fluid handling procedures Hazardous material storage Carbon Monoxide exhaust extraction system Using Service Information Resources Recall service procedures Recall service specifications Part numbers and pricing information Manufacture labor operation times Recall Technical Service Bulletins (TSB) Tool and Equipment Usage Use of tools for automotive service and maintenance Basic hand tools Factory specific service tools Torque and measurement precision tools Tire repair equipment Battery test equiment Service Set Up and Preparation Setting up stall for vehicle service Selecting appriate tools for vehicle MPVI Choreography Solo and team choreographies Interior and exterior inspection and service Battery physical inspection and electronic testing Underhood component inpsection Under vehicle component inpection Tire and wheel inspection and service Brake system component inspection

Method(s) of Instruction

- Lecture (02)
- DE Live Online Lecture (02S)
- DE Online Lecture (02X)
- Lab (04)
- DE Live Online Lab (04S)
- DE Online Lab (04X)

Reading Assignments

Text Manufacture service websites

Writing Assignments

MPVI inspection sheet Repair order documentation

Out-of-class Assignments

Workbook Assignments Online Training Modules

Demonstration of Critical Thinking

Diagnose and identify vehicle safety concerns Analyze, confirm, and diagnose mechanical and other issues based on symptoms indicated on

repair orders Relate diagnostic test results directly to component failures based on readings or measurements

Required Writing, Problem Solving, Skills Demonstration

Create vehicle repair orders, perform math exercises for parts and labor calculations Prepare for written and practicum exams through online research, outside reading assignments and lab activities Use online service repair information to compare factory specifications with actual readings and measurements acquired during diagnostic testing Use online and owner's manual resources to determine maintenance intervals, correct fluids and levels based on reading or measurements

Eligible Disciplines

Automotive technology: Any bachelor's degree and two years of professional experience, or any associate degree and six years of professional experience.

Textbooks Resources

1. Required American Honda Motors. Honda Online University, ed. American Honda Motors, 2022 2. Required Subaru Motors. Subaru University, ed. Subaru Motors, 2022 3. Required Chris Johansen. Auto Fundamentals, 13 ed. Goodheart Wilcox, 2024