

Print Date: 7/14/14
Course Objectives/Course Outline
Spokane Community College

Course Title: Application of Manual Drive Train/Transmissions
Prefix and Course Number: Auto 130

Course Learning Outcomes:

By the end of this course, a student should be able to:

a student should learn diagramming methods used in electrical wiring systems:

- Inspect and diagnose late model transmissions/transaxles and perform necessary repairs
- Overhaul sub-assemblies
- Inspect and diagnose steering systems and perform necessary repairs.
- Diagnose and repair oil pumps and converters
- Diagnose noise/vibrations causes in transmissions
- Diagnose and repair gear trans, shafts, and bushings
- Diagnose and repair friction and reaction units
- Diagnose and repair steering systems.

Course Outline

- I. Repair and Diagnosis of Automatic Transmissions/Transaxles
 - A. Causes of Noise/Vibration
 - B. Fluids
 1. usage
 2. level
 3. condition
 4. types
 - C. Pressure
 - D. Lock-up Converter Systems
 - E. Vacuum Control Systems
 1. electronic
 2. mechanical
 - F. Electronic Sensors
 - G. In-Car Transmissions
 - H. Off-Car Transmissions
- II. Repair and Diagnosis of Oil Pump and Converters
 - A. Converters
 1. flex plate
 2. torque converter
 3. stator clutch
 - B. Oil Pumps
 1. housings
 2. shafts
 3. rotors
 4. gears
 5. valves
 6. seals
 7. bushings
- III. Repair and Diagnosis of Gear Trains, Shafts, and Bushings
 - A. Gear Trains
 1. inspection
 2. diagnosis/repair/replacement

- B. Shafts
 - 1. inspection
 - 2. diagnosis/repair/replacement
- C. Bushings
 - 1. inspection
 - 2. diagnosis/repair/replacement
- IV. Diagnosis and Repair of Friction and Reaction Units
 - A. Clutch Assembly
 - 1. drum
 - 2. piston
 - 3. springs
 - 4. retainers
 - 5. seals
 - 6. friction/pressure plates
 - 7. types
 - a. sprag
 - b. roller
- V. Diagnosis and Repair of Steering Systems
 - A. Manual Steering Gear
 - 1. inspection
 - 2. diagnosis/repair/replacement
 - B. Power Steering Gear
 - 1. rack and pinion
 - 2. non-rack and pinion
 - 3. inspection
 - 4. diagnosis/repair/replacement