

Maintenance and Light Repair Section A: Competency List

STUDENT NAME: _____ DATE: _____

INSTRUCTOR: _____

Required Supplemental Tasks

Task	Competency
Identify general shop safety rules and procedures.	
Utilize safe procedures for handling of tools and equipment.	
Identify and use proper placement of floor jacks and jack stands.	
Identify and use proper procedures for safe lift operation.	
Utilize proper ventilation procedures for working within the lab/shop area.	
Identify marked safety areas.	

Identify the location and the types of fire extinguishers and other fire safety equipment; demonstrate knowledge of the procedures for using fire extinguishers and other fire safety equipment.	
Identify the location and use of eye wash stations.	
Identify the location of the posted evacuation routes.	
Comply with the required use of safety glasses, ear protection, gloves, and shoes during lab/shop activities.	
Identify and wear appropriate clothing for lab/shop activities.	
Secure hair and jewelry for lab/shop activities.	
Demonstrate awareness of the safety aspects of supplemental restraint systems (SRS), electronic brake control systems, and hybrid vehicle high voltage circuits.	
Demonstrate awareness of the safety aspects of high voltage circuits (such as high intensity discharge (HID) lamps, ignition systems, injection systems, etc.).	
Locate and demonstrate knowledge of material safety data sheets (MSDS).	
Identify tools and their usage in automotive applications.	
Identify standard and metric designation.	
Demonstrate safe handling and use of appropriate tools.	

Demonstrate proper cleaning, storage, and maintenance of tools and equipment.	
Demonstrate proper use of precision measuring tools (i.e. micrometer, dial-indicator, dial-caliper).	
Identify information needed and the service requested on a repair order.	
Identify purpose and demonstrate proper use of fender covers, mats.	
Demonstrate use of the three C's (concern, cause, and correction).	
Review vehicle service history.	
Complete work order to include customer information, vehicle identifying information,	
customer concern, related service history, cause, and correction.	
Ensure vehicle is prepared to return to customer per school/company policy (floor mats, steering wheel cover, etc.).	

ENGINE REPAIR		
Task	Priority	Competency
<u>General</u>		
Research applicable vehicle and service information, vehicle service history, service precautions, and technical service bulletins.	P-1	
Verify operation of the instrument panel engine warning indicators.	P-1	
Inspect engine assembly for fuel, oil, coolant, and other leaks; determine necessary action.	P-1	
Install engine covers using gaskets, seals, and sealers as required.	P-1	
Remove and replace timing belt; verify correct camshaft timing.	P-1	
Perform common fastener and thread repair, to include: remove broken bolt, restore internal and external threads, and repair internal threads with thread insert.	P-1	
Identify hybrid vehicle internal combustion engine service precautions.	P-3	
<u>Cylinder Head and Valve Train</u>		
Adjust valves (mechanical or hydraulic lifters).	P-1	
<u>Lubrication and Cooling Systems</u>		
Perform cooling system pressure and dye tests to identify leaks; check coolant condition and level; inspect and test radiator, pressure cap, coolant recovery tank, and heater core; determine necessary action.	P-1	
Inspect, replace, and adjust drive belts, tensioners, and pulleys; check pulley and belt alignment.	P-1	

Remove, inspect, and replace thermostat and gasket/seal.	P-1	
Inspect and test coolant; drain and recover coolant; flush and refill cooling system with recommended coolant; bleed air as required.	P-1	
Perform engine oil and filter change.	P-1	
AUTOMATIC TRANSMISSION AND TRANSAXLE		
<u>General</u>		
Research applicable vehicle and service information, fluid type, vehicle service history, service precautions, and technical service bulletins.	P-1	
Check fluid level in a transmission or a transaxle equipped with a dip-stick.	P-1	
Check fluid level in a transmission or a transaxle not equipped with a dip-stick.	P-1	
Check transmission fluid condition; check for leaks.	P-2	
<u>In-Vehicle Transmission/Transaxle</u>		
Inspect, adjust, and replace external manual valve shift linkage, transmission range sensor/switch, and park/neutral position switch.	P-2	
Inspect for leakage at external seals, gaskets, and bushings.	P-2	
Inspect power train mounts.	P-2	
Drain and replace fluid and filter(s).	P-1	

<u>Off-Vehicle Transmission and Transaxle</u>		
Describe the operational characteristics of a continuously variable transmission (CVT).	P-3	
Describe the operational characteristics of a hybrid vehicle drive train.	P-3	
MANUAL DRIVE TRAIN AND AXLES		
<u>General</u>		
Research applicable vehicle and service information, fluid type, vehicle service history, service precautions, and technical service bulletins.	P-1	
Drain and refill manual transmission/transaxle and final drive unit.	P-1	
Check fluid condition; check for leaks.	P-2	
<u>Clutch</u>		
Check and adjust clutch master cylinder fluid level.	P-1	
Check for system leaks.	P-1	
<u>Transmission/Transaxle</u>		
Describe the operational characteristics of an electronically-controlled manual transmission/transaxle.	P-3	
<u>Drive Shaft, Half Shafts, Universal and Constant-Velocity (CV) Joints</u>		
Inspect, remove, and replace front wheel drive (FWD) bearings, hubs, and seals.	P-2	
Inspect, service, and replace shafts, yokes, boots, and universal/CV joints.	P-2	

<u>Differential Case Assembly</u>		
Clean and inspect differential housing; check for leaks; inspect housing vent.	P-2	
Check and adjust differential housing fluid level.	P-1	
Drain and refill differential housing.	P-1	
<u>Drive Axles</u>		
Inspect and replace drive axle wheel studs.	P-2	
<u>Four-wheel Drive/All-wheel Drive</u>		
Inspect front-wheel bearings and locking hubs.	P-3	
Check for leaks at drive assembly seals; check vents; check lube level.	P-2	
<u>SUSPENSION AND STEERING SYSTEMS</u>		
<u>General</u>		
Research applicable vehicle and service information, vehicle service history, service precautions, and technical service bulletins.	P-1	
Disable and enable supplemental restraint system (SRS).	P-1	