

## Maintenance and Light Repair Section D: Competency List

STUDENT NAME: \_\_\_\_\_ DATE: \_\_\_\_\_

INSTRUCTOR: \_\_\_\_\_

### Required Supplemental Tasks

<b>Task</b>	<b>Competency</b>
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.).	

Task	Priority	Competency
<b><u>Starting System</u></b>		
Perform starter current draw test; determine necessary action.	P-1	
Perform starter circuit voltage drop tests; determine necessary action.	P-1	
Inspect and test starter relays and solenoids; determine necessary action.	P-2	
Remove and install starter in a vehicle.	P-1	

Inspect and test switches, connectors, and wires of starter control circuits; determine necessary action.	P-2	
<b><u>Charging System</u></b>		
Perform charging system output test; determine necessary action.	P-1	
Inspect, adjust, or replace generator (alternator) drive belts; check pulleys and tensioners for wear; check pulley and belt alignment.	P-1	
Remove, inspect, and re-install generator (alternator).	P-2	
Perform charging circuit voltage drop tests; determine necessary action.	P-1	
<b><u>Lighting Systems</u></b>		
Inspect interior and exterior lamps and sockets including headlights and auxiliary lights (fog lights/driving lights); replace as needed.	P-1	
Aim headlights.	P-2	
Identify system voltage and safety precautions associated with high-intensity discharge headlights.	P-2	
<b><u>Accessories</u></b>		
Disable and enable airbag system for vehicle service; verify indicator lamp operation.	P-1	
Remove and reinstall door panel.	P-1	
Describe the operation of keyless entry/remote-start systems.	P-3	
Verify operation of instrument panel gauges and warning/indicator lights; reset maintenance indicators.	P-1	

Verify windshield wiper and washer operation; replace wiper blades.	P-1	
<b>HEATING AND AIR CONDITIONING</b>		
<b><u>General</u></b>		
Research applicable vehicle and service information, vehicle service history, service precautions, and technical service bulletins.	P-1	
<b><u>Refrigeration System Components</u></b>		
Inspect and replace A/C compressor drive belts, pulleys, and tensioners; determine necessary action.	P-1	
Identify hybrid vehicle A/C system electrical circuits and the service/safety precautions.	P-2	
Inspect A/C condenser for airflow restrictions; determine necessary action.	P-1	
<b><u>Heating, Ventilation, and Engine Cooling Systems</u></b>		
Inspect engine cooling and heater systems hoses; perform necessary action.	P-1	
<b><u>Operating Systems and Related Controls</u></b>		
Inspect A/C-heater ducts, doors, hoses, cabin filters, and outlets; perform necessary action.	P-1	
Identify the source of A/C system odors.	P-2	
<b>ENGINE PERFORMANCE</b>		
<b><u>General</u></b>		
Research applicable vehicle and service information, vehicle service history, service	P-1	

precautions, and technical service bulletins.		
Perform engine absolute (vacuum/boost) manifold pressure tests; determine necessary action	P-1	
Perform cylinder power balance test; determine necessary action.	P-2	
Perform cylinder cranking and running compression tests; determine necessary action.	P-1	
Perform cylinder leakage test; determine necessary action.	P-1	
Verify engine operating temperature.	P-1	
Remove and replace spark plugs; inspect secondary ignition components for wear and damage.	P-1	
<b><u>Computerized Engine Controls</u></b>		
Retrieve and record diagnostic trouble codes, OBD monitor status, and freeze frame data; clear codes when applicable.	P-1	
Describe the importance of operating all OBDII monitors for repair verification.	P-1	
<b><u>Fuel, Air Induction, and Exhaust Systems</u></b>		
Replace fuel filter(s).	P-1	
Inspect, service, or replace air filters, filter housings, and intake duct work.	P-1	
Inspect integrity of the exhaust manifold, exhaust pipes, muffler(s), catalytic converter(s), resonator(s), tail pipe(s), and heat shields; determine necessary action.	P-1	

Inspect condition of exhaust system hangers, brackets, clamps, and heat shields; repair or replace as needed.	P-1	
Check and refill diesel exhaust fluid (DEF).	P-3	
<b>Emissions Control Systems</b>		
Inspect, test, and service positive crankcase ventilation (PCV) filter/breather cap, valve, tubes, orifices, and hoses; perform necessary action.	P-2	