

# Maintenance and Light Repair I (MLR I)

Students will perform safety examinations and maintain safety records. **1**

**1.1** Use and inspect personal protective equipment and demonstrate appropriate related safety procedures. **1.1**

---

**1.2** Inspect, maintain, and employ safe operating procedures with tools and equipment, such as hand and power tools, ladders, scaffolding, and lifting equipment. **1.2**

---

**1.3** Demonstrate continuous awareness of potential hazards to self and others and respond appropriately. **1.3**

---

**1.4** Assume responsibilities under HazCom (Hazard Communication) regulations. **1.4**

---

**1.5** Adhere to responsibilities, regulations, and Occupational Safety & Health Administration (OSHA) policies to protect coworkers and bystanders from hazards; report accidents and observed hazards; and comply with emergency response procedures. **1, 5**

---

**1.6** Pass with 100% accuracy a written examination relating to safety issues relating specifically to Maintenance and Light Repair. **1.6**

---

**1.7** Pass with 100% accuracy a performance examination relating to safety issues relating specifically to Maintenance and Light Repair. **1.7**

---

**1.8** Maintain a portfolio record of written safety examinations and equipment examination for which the student has passed an operational checkout by the instructor. **1.8**

---

Students will demonstrate leadership, citizenship, and teamwork skills required for success in the school, community, and workplace. **2**

**2.1** Cultivate positive leadership skills. Take part in opportunities to practice and demonstrate personal leadership skills. For example, taking advantage of opportunities provided by a career and technical student organization (CTSO), such as SkillsUSA. **2.1**

---

**2.2** Assess situations, apply problem-solving techniques and decision-making skills within the school, community, and workplace. **2.2**

---

**2.3** Participate as a team member in a learning environment. **2.3**

---

**2.4** Respect the opinions, customs, and individual differences of others. 2.4

---

**2.5** Build personal career development by identifying career interests, strengths, and opportunities. 2.5

---

**Students will demonstrate shop and personal safety.** 3

**3.1** Identify and demonstrate knowledge of how to utilize marked safety areas and equipment, such as location and use of eye wash stations; types of fire extinguishers and other fire safety equipment; posted evacuation routes; and proper ventilation procedures for working within the lab/shop area. 3.1

---

**3.2** Comply with the required use of safety glasses, ear protection, gloves, appropriate clothing, and shoes during lab/shop activities; demonstrate knowledge of procedures for securing hair and jewelry for lab/shop activities. 3.2

---

**3.3** Demonstrate awareness of the safety aspects of supplemental restraint systems (SRS), electronic brake control systems, and hybrid vehicle high voltage circuits. 3.3

---

**3.4** Locate and demonstrate knowledge of material safety data sheets (MSDS). 3.4

---

**Students will identify and properly use, maintain, and store automotive service hand tools, power tools, and shop equipment.** 4

**4.1** Identify tools and their usage in automotive applications. 4.1

---

**4.2** Identify standard and metric designation. 4.2

---

**4.3** Demonstrate safe handling and use of appropriate tools. 4.3

---

**4.4** Demonstrate proper cleaning, storage, and maintenance of tools and equipment. 4.4

---

**4.5** Demonstrate proper use of precision measuring tools (i.e. micrometer, dial-indicator, dial-caliper). 4.5

---

**Students will prepare a vehicle for service.** 5

**5.1** Identify information needed and the service requested on a repair order. 5.1

---

**5.2** Identify purpose and demonstrate proper use of fender covers, mats. 5.2

---

**5.3** Demonstrate use of the three C's: concern, cause, and correction. 5.3

---

**5.4** Review vehicle service history. 5.4

---

**5.5** Complete work order to include customer information, vehicle identifying information, customer concern, related service history, cause, and correction. 5.5

---

**Students will perform basic vehicle engine**

**6.1** Research applicable vehicle and service information, vehicle service history, service precautions, and technical service bulletins. (P-1) 6.1

**service and maintenance. 6**

---

**6.2** Verify operation of the instrument panel engine warning indicators. (P-1) 6.2

---

**6.3** Inspect engine assembly for fuel, oil, coolant, and other leaks; and determine necessary action. (P-1) 6.3

---

**6.4** Install engine covers using gaskets, seals, and sealers as required. (P-1) 6.4

---

**6.5** Remove and replace timing belt; verify correct camshaft timing. (P-1) 6.5

---

**6.6** 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) 6.6

---

**6.7** Identify hybrid vehicle internal combustion engine service precautions. (P-3) 6.7

---

**6.8** 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) 6.8

---

**6.9** Inspect, replace, and adjust drive belts, tensioners, and pulleys; check pulley and belt alignment. (P-1) 6.9

---

**6.10** Remove, inspect, and replace thermostat and gasket/seal. (P-1) 6.10

---

**6.11** Inspect and test coolant; drain and recover coolant; flush and refill cooling system with recommended coolant; bleed air as required. (P-1) 6.11

---

**6.12** Perform engine oil and filter change. (P-1) 6.12

---

**Students will properly inspect and service tires and wheels. 7**

---

**7.1** Inspect tire condition; identify tire wear patterns; check for correct size and application (load and speed ratings) and adjust air pressure; determine necessary action. 7.1

---

**7.2** Rotate tires according to manufacturer's recommendations. 7.2

---

**7.3** Dismount, inspect, and remount tire on wheel; balance wheel and tire assembly (static and dynamic). 7.3

---

**7.4** Dismount, inspect, and remount tire on wheel equipped with tire pressure monitoring system sensor. 7.4

---

**7.5** Inspect tire and wheel assembly for air loss; perform necessary action. 7.5

---

**7.6** Repair tire using internal patch. 7.6

---

**7.7** Identify and test tire pressure monitoring systems (indirect and direct) for operation; verify operation of instrument panel lamps. 7.7

---

---

**7.8 Demonstrate knowledge of steps required to remove and replace sensors in a tire pressure monitoring system. 7.8**