Tennessee CTE

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