

Standards Correlations

Automotive Technology I (MLR 3-Year Program)

(8502)

Automotive Technology I (8506)

Task	Standards of Learning
Demonstrating Personal Qualities and Abilities	
Demonstrate creativity and innovation.	<p>English: 6.1, 6.3, 6.4, 6.6, 6.7, 6.9, 7.1, 7.3, 7.4, 7.6, 7.7, 7.9, 8.1, 8.3, 8.4, 8.6, 8.7, 8.9, 9.1, 9.5, 9.6, 9.8, 10.1, 10.5, 10.6, 10.8, 11.1, 11.5, 11.6, 11.8, 12.1, 12.5, 12.6, 12.8</p> <p>History and Social Science: CE.1, CE.4, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WG.4, WHI.1, WHII.1</p> <p>Mathematics: 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7, 6.10, 6.11, 6.12, 7.2, 7.3, 7.8, 7.9, 8.2, 8.4, 8.6, 8.7, 8.11, 8.12, 8.17, 8.18, A.9, AFDA.3, AFDA.4, AFDA.5, AFDA.6, AFDA.7, AFDA.8, AII.9, COM.1, COM.3, COM.4, COM.5, COM.8, DM.7, DM.1*, DM.10, DM.2*, DM.3*, PS.3*, PS.4*, PS.7*, PS.9*, PS.10*</p> <p>Science: 6.1, BIO.1, CH.1, ES.1, LS.1, PS.1</p>
Demonstrate critical thinking and problem solving.	<p>English: 6.1, 6.3, 6.4, 6.5, 6.6, 6.7, 6.9, 7.1, 7.3, 7.4, 7.5, 7.6, 7.7, 7.9, 8.1, 8.3, 8.4, 8.5, 8.6, 8.7, 8.9, 9.1, 9.5, 9.6, 9.8, 10.1, 10.5, 10.6, 10.8, 11.1, 11.5, 11.6, 11.8, 12.1, 12.5, 12.6, 12.8</p> <p>History and Social Science: CE.1, CE.4, CE.11, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WG.4, WHI.1, WHII.1</p> <p>Mathematics: 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.10, 6.11, 7.2, 7.3, 7.8, 7.12, 7.13, 8.2, 8.4, 8.8, 8.9, 8.10, 8.11, A.8, A.9, G.1, G.13, G.14, AFDA.3, AFDA.5, AFDA.8, AII.9, AII.10, AII.11, COM.1, COM.3, COM.4, COM.5, COM.8, DM.4, DM.7, DM.1*, DM.2*, DM.3*, DM.9*, PS.9*, PS.10*</p> <p>Science: 6.1, BIO.1, CH.1, ES.1, LS.1, PS.1</p>
Demonstrate initiative and self-direction.	<p>English: 6.1, 6.4, 6.6, 6.7, 6.9, 7.1, 7.4, 7.6, 7.7, 7.9, 8.1, 8.4, 8.6, 8.7, 8.9, 9.1, 9.5, 9.6, 9.8, 10.1, 10.5, 10.6, 10.8, 11.1, 11.5, 11.6, 11.8, 12.1, 12.5, 12.6, 12.8</p> <p>History and Social Science: CE.1, CE.4, CE.11, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1</p>
Demonstrate integrity.	<p>English: 6.1, 7.1, 8.1, 9.1, 9.5, 10.1, 10.5, 11.1, 11.5, 12.1, 12.5</p> <p>History and Social Science: CE.1, CE.3, CE.4, GOVT.1, GOVT.16, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1</p>
Demonstrate work ethic.	<p>English: 6.1, 7.1, 8.1, 9.1, 10.1, 11.1, 12.1</p> <p>History and Social Science: CE.1, CE.4, CE.14, GOVT.1, GOVT.16, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1</p>

Task	Standards of Learning
	Science: CH.1
Demonstrating Interpersonal Skills	
Demonstrate conflict-resolution skills.	English: 6.1, 6.2, 6.4, 6.6, 6.7, 6.9, 7.1, 7.2, 7.4, 7.6, 7.7, 7.9, 8.1, 8.2, 8.4, 8.6, 8.7, 8.9, 9.1, 10.1, 11.1, 12.1 History and Social Science: CE.1, CE.4, GOVT.1, USI.1, VUS.1
Demonstrate listening and speaking skills.	English: 6.1, 6.2, 6.4, 6.6, 7.1, 7.2, 7.4, 7.6, 8.1, 8.2, 8.4, 8.6, 9.1, 10.1, 11.1, 12.1 History and Social Science: CE.1, CE.4, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1
Demonstrate respect for diversity.	English: 6.1, 7.1, 8.1, 9.1, 10.1, 11.1, 12.1 History and Social Science: CE.1, CE.3, CE.4, GOVT.1, GOVT.16, USI.1, USII.1, USII.9, VUS.1, VUS.13, WG.1, WHI.1, WHII.1
Demonstrate customer service skills.	English: 6.1, 6.4, 6.7, 7.1, 7.4, 7.7, 8.1, 8.4, 8.7, 9.1, 9.5, 9.6, 10.1, 10.5, 10.6, 11.1, 11.5, 11.6, 12.1, 12.5, 12.6 History and Social Science: CE.1, CE.4, GOVT.1, GOVT.16, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1
Collaborate with team members	English: 6.1, 7.1, 8.1, 9.1, 10.1, 11.1, 12.1 History and Social Science: CE.1, CE.3, CE.4, GOVT.1, GOVT.16, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1
Demonstrating Professional Competencies	
Demonstrate big-picture thinking.	English: 6.1, 6.4, 7.1, 7.4, 8.1, 8.4, 9.1, 9.5, 10.1, 10.5, 11.1, 11.5, 12.1, 12.5 History and Social Science: CE.1, CE.4, CE.12, GOVT.1, GOVT.15, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1
Demonstrate career- and life-management skills.	English: 6.1, 6.7, 7.1, 7.7, 8.1, 8.7, 9.1, 9.6, 10.1, 10.6, 11.1, 11.6, 12.1, 12.6 History and Social Science: CE.1, CE.4, CE.12, CE.14, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1 Mathematics: 8.4
Demonstrate continuous learning and adaptability.	English: 6.1, 6.4, 6.7, 6.9, 7.1, 7.4, 7.7, 7.9, 8.1, 8.4, 8.7, 8.9, 9.1, 9.5, 9.6, 9.8, 10.1, 10.5, 10.6, 10.8, 11.1, 11.5, 11.6, 11.8, 12.1, 12.5, 12.6, 12.8 History and Social Science: CE.1, CE.3, CE.4, CE.14, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1 Science: BIO.1, CH.1, LS.1, PH.1, PH.4, PS.1
Manage time and resources.	English: 6.1, 6.2, 6.4, 6.7, 6.9, 7.1, 7.2, 7.4, 7.7, 7.9, 8.1, 8.2, 8.4, 8.7, 8.9, 9.1, 9.5, 9.6,

Task	Standards of Learning
	<p>9.8, 10.1, 10.5, 10.6, 10.8, 11.2, 11.5, 11.6, 11.8, 12.2, 12.5, 12.6, 12.8</p> <p>History and Social Science: CE.1, CE.4, CE.11, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1</p> <p>Mathematics: 6.10, 6.11, 6.12, 7.2, 7.3, 7.8, 7.9, 7.10, 7.11, 7.12, 7.13, 8.4, 8.11, 8.12, 8.13, 8.14, 8.17, 8.18, A.4, A.5, A.8, A.9, AFDA.3, AFDA.4, AFDA.5, AFDA.6, AFDA.7, AFDA.8, COM.1, COM.3, COM.5, COM.8</p>
Demonstrate information-literacy skills.	<p>English: 6.1, 6.2, 6.4, 6.6, 6.7, 6.9, 7.1, 7.2, 7.3, 7.4, 7.6, 7.7, 7.9, 8.1, 8.2, 8.3, 8.4, 8.6, 8.7, 8.9, 9.2, 9.5, 9.6, 9.8, 10.2, 10.5, 10.6, 10.8, 11.2, 11.5, 11.6, 11.8, 12.2, 12.5, 12.6, 12.8</p> <p>History and Social Science: CE.1, CE.4, CE.14, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1</p> <p>Mathematics: 6.10, 6.11, 7.8, 7.9, 8.11, 8.12, A.8, A.9, AFDA.3, AFDA.4, AFDA.6, AFDA.7, AFDA.8, DM.8, PS.1*, PS.2*, PS.3*, PS.4*, PS.7*, PS.8*, PS.9*, PS.10*</p> <p>Science: 6.1, BIO.1, CH.1, ES.1, LS.1, PH.1, PS.1</p>
Demonstrate an understanding of information security.	<p>English: 6.1, 6.2, 6.3, 6.4, 6.6, 6.7, 6.8, 6.9, 7.1, 7.2, 7.3, 7.4, 7.6, 7.7, 7.8, 7.9, 8.1, 8.2, 8.3, 8.4, 8.6, 8.7, 8.8, 8.9, 9.1, 9.2, 9.5, 9.6, 9.8, 10.1, 10.2, 10.5, 10.6, 10.8, 11.1, 11.2, 11.5, 11.6, 11.8, 12.1, 12.2, 12.5, 12.6, 12.8</p> <p>History and Social Science: CE.1, CE.4, CE.14, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1</p> <p>Mathematics: COM.10</p>
Maintain working knowledge of current information-technology (IT) systems.	<p>English: 6.1, 6.3, 6.4, 6.6, 6.9, 7.1, 7.3, 7.4, 7.6, 7.9, 8.1, 8.3, 8.4, 8.6, 8.9</p> <p>History and Social Science: CE.1, CE.4, CE.14, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1</p> <p>Mathematics: 7.8, COM.1, COM.2, COM.7, COM.9, COM.10, COM.11, COM.16, COM.18, PS.17</p> <p>Science: BIO.1, CH.1, ES.1, PH.1</p>
Demonstrate proficiency with technologies, tools, and machines common to a specific occupation.	<p>History and Social Science: CE.1, CE.4, CE.14, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1</p> <p>Mathematics: 6.10, 6.11, 7.9, 8.4, A.7, A.8, A.9, AFDA.1, AFDA.3, AFDA.5, AII.4, AII.7, AII.9, COM.1, COM.7, COM.10, COM.11, COM.12, COM.16</p> <p>Science: CH.1, ES.1, LS.1, PH.1, PS.1</p>
Apply mathematical skills to job-specific tasks.	<p>English: 6.4, 6.6, 6.7, 7.4, 7.6, 7.7, 8.4, 8.6, 8.7, 9.5, 9.6, 10.5, 10.6, 11.5, 11.6, 12.5, 12.6</p>

Task	Standards of Learning
	<p>History and Social Science: CE.1, CE.4, CE.14, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1</p> <p>Mathematics: 6.1, 6.2, 6.5, 6.6, 6.12, 6.13, 6.14, 7.1, 7.2, 7.3, 7.4, 7.5, 7.6, 7.8, 7.9, 7.11, 7.12, 7.13, 8.4, 8.5, 8.6, 8.8, 8.9, 8.10, 8.11, 8.12, 8.13, 8.14, 8.15, 8.16, 8.17, 8.18, A.1, A.3, A.4, A.5, A.7, A.8, A.9, AFDA.1, AFDA.3, AFDA.5, AFDA.8, AII.3, AII.7, AII.9, AII.10, COM.1, COM.7</p> <p>Science: 6.1, BIO.1, CH.1, ES.1, LS.1, PH.1, PS.1</p>
Demonstrate professionalism.	<p>English: 6.1, 7.1, 8.1, 9.1, 10.1, 11.1, 12.1</p> <p>History and Social Science: CE.1, CE.4, CE.14, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1</p>
Demonstrate reading and writing skills.	<p>English: 6.1, 6.6, 6.7, 7.1, 7.6, 7.7, 8.1, 8.6, 8.7, 9.1, 9.5, 9.6, 9.7, 10.1, 10.5, 10.6, 10.7, 11.1, 11.5, 11.6, 11.7, 12.1, 12.5, 12.6, 12.7</p> <p>History and Social Science: CE.1, CE.4, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1</p> <p>Science: 6.1, PH.1, PS.1</p>
Demonstrate workplace safety.	<p>English: 6.4, 7.4, 8.4, 9.5, 10.5, 11.5, 12.5</p> <p>History and Social Science: CE.1, CE.4, GOVT.1, USI.1, USII.1, VUS.1, WG.1, WHI.1, WHII.1</p> <p>Science: CH.1</p>
Examining All Aspects of an Industry	
Examine aspects of planning within an industry/organization.	History and Social Science: GOVT.16
Examine aspects of management within an industry/organization.	
Examine aspects of financial responsibility within an industry/organization.	
Examine technical and production skills required of workers within an industry/organization.	
Examine principles of technology that underlie an industry/organization.	
Examine labor issues related to an industry/organization.	History and Social Science: GOVT.16
Examine community issues related to an industry/organization.	History and Social Science: GOVT.16
Examine health, safety, and environmental issues related to an industry/organization.	History and Social Science: GOVT.16
Addressing Elements of Student Life	
Identify the purposes and goals of the student organization.	
Explain the benefits and responsibilities of membership in the student organization as	
a student and in professional/civic organizations as an adult.	
Demonstrate leadership skills through participation in student organization activities, such as meetings, programs, and projects.	

Task	Standards of Learning
Identify Internet safety issues and procedures for complying with acceptable use standards.	
Exploring Work-Based Learning	
Identify the types of work-based learning (WBL) opportunities.	
Reflect on lessons learned during the WBL experience.	
Explore career opportunities related to the WBL experience.	
Participate in a WBL experience, when appropriate.	
REQUIRED SUPPLEMENTAL TASKS: Lab/Shop and Personal Safety	
Identify general lab safety rules and procedures.	English: 10.5, 11.5 Science: CH.1
Utilize safe procedures for handling tools and equipment.	English: 10.5, 11.5
Identify and use proper placement of floor jacks and jack stands.	English: 10.5, 11.5
Identify and use proper procedures for safe lift operation.	English: 10.5, 11.5
Use proper ventilation procedures for working in the lab area.	
Identify marked safety areas.	English: 10.5, 11.5
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.	English: 10.5, 11.5 Science: CH.1
Identify the location and use of eye wash stations.	English: 10.5, 11.5 Science: CH.1
Identify the location of posted evacuation routes.	English: 10.5, 11.5 Science: CH.1
Comply with the required use of safety glasses, ear protection, gloves, and shoes during lab activities.	English: 10.5, 11.5 Science: CH.1
Identify and wear appropriate clothing for lab activities.	English: 10.5, 11.5 Science: CH.1
Secure hair and jewelry for lab activities.	Science: CH.1
Demonstrate awareness of the safety aspects of supplemental restraint systems (SRS), electronic brake control systems, and hybrid vehicle high-voltage circuits.	English: 10.5, 11.5
Demonstrate awareness of the safety aspects of high-voltage circuits such as high intensity discharge (HID) lamps, ignition systems, and injection systems.	English: 10.5, 11.5
Locate and demonstrate knowledge of safety data sheets (SDS).	English: 10.5, 11.5 History and Social Science: WHII.1; VUS.1 Science: CH.1
REQUIRED SUPPLEMENTAL TASKS: Tools and Equipment	
Identify tools and their usage in automotive applications.	
Identify standard and metric measurement designations.	English: 10.5, 11.5 History and Social Science: WHII.1; VUS.1
Demonstrate the safe handling and use of appropriate tools.	English: 10.5, 11.5
Demonstrate cleaning, storage, and maintenance of tools and equipment.	English: 10.5, 11.5

Task	Standards of Learning
Demonstrate the use of precision measuring tools (i.e., micrometer, dial-indicator, dial-caliper).	English: 10.5, 11.5 History and Social Science: WHII.1; VUS.1
REQUIRED SUPPLEMENTAL TASKS: Preparing Vehicle for Service	
Identify information needed and the service requested on a repair order.	English: 10.5, 11.5
Identify the purpose and demonstrate the proper use of fender covers and mats.	
Demonstrate the use of the three Cs (i.e., concern, cause, and correction).	English: 10.1, 11.1 History and Social Science: WHII.1; VUS.1
Review the vehicle service history.	English: 10.5, 11.5
Complete the work order to include customer information, vehicle identifying information, customer concern, related service history, cause, and correction.	English: 10.5, 11.5
Explain the importance of a vehicle walk-around inspection.	English: 10.5, 10.6, 10.7, 11.5, 11.6, 11.7 History and Social Science: WHII.1; VUS.1
Explain the importance of a vehicle multi-point inspection and inspection report.	English: 10.5, 10.6, 10.7, 11.5, 11.6, 11.7 History and Social Science: WHII.1; VUS.1
Explain the importance of a plan of action for each specific service or diagnostic situation.	English: 10.5, 11.5 History and Social Science: WHII.1; VUS.1
REQUIRED SUPPLEMENTAL TASKS: Preparing Vehicle for Customer	
Ensure the vehicle is prepared to return to the customer per school/company policy (i.e., floor mats, steering wheel cover, etc.).	
ENGINE REPAIR: General	
Research vehicle service information, including fluid type, vehicle service history, service precautions, and technical service bulletins (TSBs).	English: 10.5, 10.8, 11.5, 11.8 History and Social Science: WHII.1; VUS.1
Verify the operation of the instrument panel engine warning indicators.	English: 10.5, 11.5
Inspect the engine assembly for fuel, oil, coolant, and other leaks; determine the necessary action.	History and Social Science: WHII.1; VUS.1
Identify service precautions related to the service of the internal combustion engine of a hybrid vehicle.	English: 10.5, 11.5

Task	Standards of Learning
ENGINE REPAIR: Lubrication and Cooling Systems	
Identify lubrication and cooling system components and configurations.	
Perform cooling system pressure and dye tests to identify leaks; check the coolant condition and level; inspect and test the radiator, pressure cap, coolant recovery tank, heater core, and galley plugs; determine the needed action.	English: 10.5, 11.5
Inspect, replace, and/or adjust drive belts, tensioners, and pulleys; check the pulley and belt alignment.	
Remove, inspect, and replace the thermostat and gasket/seal.	
Inspect and test coolant; drain and recover coolant; flush and refill the cooling system; use the proper fluid type per manufacturer specification; bleed air as required.	English: 10.5, 11.5
Perform an engine oil and filter change; use the proper fluid type per manufacturer specification; reset the maintenance reminder as required.	English: 10.5, 11.5
AUTOMATIC TRANSMISSION AND TRANSAXLE: General	
Research vehicle service information, including fluid type, vehicle service history, service precautions, and TSBs.	English: 10.5, 10.8, 11.5, 11.8 History and Social Science: WHII.1; VUS.1
Check the fluid level in a transmission or a transaxle equipped with a dipstick.	
Check the fluid level in a transmission or a transaxle not equipped with a dipstick.	
Check the transmission fluid condition; check for leaks.	English: 10.5, 11.5
Identify drive-train components and configuration.	
AUTOMATIC TRANSMISSION AND TRANSAXLE: In-Vehicle Transmission/Transaxle	
Inspect for leakage at external seals, gaskets, and bushings.	
Drain and replace fluid and filter(s); use proper fluid type per manufacturer specification.	English: 10.5, 11.5
MANUAL DRIVE TRAIN AND AXLES: General	
Research the vehicle service information, including fluid type, vehicle service history, service precautions, and TSBs.	English: 10.5, 10.8, 11.5, 11.8 History and Social Science: WHII.1; VUS.1
Drain and refill the manual transmission/transaxle and final drive unit; use the proper fluid type per manufacturer specification.	
Check the fluid condition and check for leaks.	History and Social Science: WHII.1; VUS.1
Identify the manual drive train and axle components and configurations.	
MANUAL DRIVE TRAIN AND AXLES: Clutch	
Check and adjust the clutch master cylinder fluid level; use the proper fluid type per manufacturer specifications.	English: 10.5, 11.5
Check for hydraulic system leaks.	English: 10.5, 11.5
MANUAL DRIVE TRAIN AND AXLES: Drive Shaft, Half Shafts, Universal Joints, and Constant-Velocity (CV) Joints (Front, Rear, All, and Four-Wheel Drive)	
Check for leaks at the drive assembly and transfer case seals; check vents; check fluid level; use the proper fluid type per manufacturer specification.	

Task	Standards of Learning
MANUAL DRIVE TRAIN AND AXLES: Differential Case Assembly	
Check and adjust the differential case fluid level; use the proper fluid type per manufacturer specification.	
Drain and refill differential housing.	
Inspect and replace the drive axle wheel studs.	
SUSPENSION AND STEERING SYSTEMS: General	
Research vehicle service information, including fluid type, vehicle service history, service precautions, TSBs, and recalls, including vehicles equipped with advanced driver assistance systems (ADAS).	English: 10.5, 10.8, 11.5, 11.8 History and Social Science: WHII.1; VUS.1
SUSPENSION AND STEERING SYSTEMS: Related Suspension and Steering Service	
Inspect rack-and-pinion steering gear inner tie-rod ends (sockets) and bellows boots.	English: 10.5, 11.5
Inspect the power steering fluid level and condition.	English: 10.5, 11.5
Flush, fill, and bleed the power steering system; use the proper fluid type per manufacturer specification.	English: 10.5, 11.5
Inspect for power steering fluid leakage.	English: 10.5, 11.5 History and Social Science: WHII.1; VUS.1
Remove, inspect, replace, and/or adjust the power steering pump drive belt.	English: 10.5, 11.5
Inspect and replace the power steering hoses and fittings.	
Inspect the pitman arm, relay (center link/intermediate) rod, idler arm, mountings, and steering linkage damper.	
Inspect the tie rod ends (sockets), tie rod sleeves, and clamps.	English: 10.5, 11.5
Inspect the upper and lower control arms, bushings, and shafts.	English: 10.5, 11.5
Inspect and replace rebound and/or jounce bumpers.	English: 10.5, 11.5
Inspect the track bar, strut rods/radius arms, and related mounts and bushings.	English: 10.5, 11.5
Inspect the upper and lower ball joints (with or without wear indicators).	English: 10.5, 11.5
Inspect the suspension system coil springs and spring insulators (silencers).	English: 10.5, 11.5
Inspect the suspension system torsion bars and mounts.	English: 10.5, 11.5
Inspect and/or replace front/rear stabilizer bar (sway bar) bushings, brackets, and links.	English: 10.5, 11.5
Inspect, remove, and/or replace strut cartridge or assembly; inspect mounts and bushings.	English: 10.5, 11.5
Inspect the front strut bearing and mount.	
Inspect the rear suspension system lateral links/arms (track bars) and control (trailing) arms.	English: 10.5, 11.5
Inspect the rear suspension system leaf spring(s), spring insulators (silencers), shackles, brackets, bushings, center pins/bolts, and mounts.	English: 10.5, 11.5
Inspect the components of electronically controlled suspension systems.	
Inspect, remove, and/or replace shock absorbers; inspect the mounts and bushings.	English: 10.5, 11.5
Inspect the electric power steering assist system.	
Identify hybrid vehicle power steering system electrical circuits and safety precautions.	English: 10.5, 11.5
Describe the function of suspension and steering control systems and components (i.e., active suspension and stability control) and configuration.	

Task	Standards of Learning
SUSPENSION AND STEERING SYSTEMS: Wheel Alignment	
Perform a prealignment inspection; measure the vehicle ride height.	English: 10.5, 11.5
Describe alignment angles (i.e., camber, caster, and toe).	
SUSPENSION AND STEERING SYSTEMS: Wheels and Tires	
Inspect the tire condition; identify tire wear patterns; check for correct tire size, application (load and speed ratings), and air pressure as listed on the tire information placard/label.	English: 10.5, 11.5
Rotate tires according to manufacturer's recommendations including vehicles equipped with tire pressure monitoring systems (TPMS).	English: 10.5, 11.5
Dismount, inspect, and remount the tire on the wheel; balance the wheel and tire assembly.	English: 10.5, 11.5
Perform road force balance/match mounting.	English: 10.5, 11.5
Dismount, inspect, and remount the tire on the wheel equipped with the TPMS sensor.	English: 10.5, 11.5
Inspect the tire and wheel assembly for air loss; determine the necessary action.	History and Social Science: WHII.1; VUS.1
Repair a tire following the vehicle manufacturer approved procedure.	
Identify tire pressure monitoring systems (indirect and direct); calibrate the system; verify the operation of instrument panel lamps.	English: 10.5, 11.5
Demonstrate knowledge of the steps required to remove and replace sensors in a TPMS, including relearn procedure.	English: 10.5, 11.5
BRAKES: General	
Research vehicle service information such as fluid type, vehicle service history, service precautions, TSBs, and recalls including vehicles equipped with advanced driver assistance systems (ADAS).	English: 10.5, 10.8, 11.5, 11.8 History and Social Science: WHII.1; VUS.1
Describe the procedure for performing a road test to check the brake system operation, including an anti-lock brake system (ABS).	
BRAKES: Hydraulic System	
Describe the proper brake pedal height, travel, and feel.	
Check the master cylinder for external leaks and proper operation.	
Inspect the brake lines, flexible hoses, and fittings for leaks, dents, kinks, rust, cracks, bulging, wear, and loose fittings/supports.	
Select, handle, store, and fill brake fluids to proper level; use proper fluid type per manufacturer specification.	
Identify the components of the hydraulic brake warning light system.	
Bleed and/or flush the brake system.	
Test the brake fluid for contamination.	
BRAKES: Drum Brakes	
Remove, clean, and inspect the brake drum; measure the brake drum diameter; determine serviceability.	
Refinish the brake drum and measure the final drum diameter; compare with specification.	English: 10.5, 11.5
Remove, clean, inspect, and/or replace brake shoes, springs, pins, clips, levers, adjusters/self-adjusters, other related brake hardware, and backing support plates; lubricate and reassemble.	English: 10.5, 11.5
Inspect the wheel cylinders for leaks and proper operation; remove and replace as needed.	

Task	Standards of Learning
Pre-adjust brake shoes and the parking brake; install brake drums or drum/hub assemblies and wheel bearings; make final checks and adjustments.	
Install wheel and torque lug nuts.	
BRAKES: Disc Brakes	
Remove and clean the caliper assembly; inspect for leaks and damage/wear; determine the necessary action.	English: 10.5, 11.5 History and Social Science: WHII.1; VUS.1
Inspect the caliper mounting and slides/pins for proper operation, wear, and damage; determine the necessary action.	History and Social Science: WHII.1; VUS.1
Remove, inspect, and/or replace brake pads and retaining hardware; determine the necessary action.	English: 10.5, 11.5 History and Social Science: WHII.1; VUS.1
Lubricate and reinstall caliper, brake pads, and related hardware; seat brake pads and inspect for leaks.	English: 10.5, 11.5
Clean and inspect the rotor and mounting surface; measure rotor thickness, thickness variation, and lateral runout; determine the necessary action.	History and Social Science: WHII.1; VUS.1
Remove and reinstall/replace the rotor.	English: 10.5, 11.5
Refinish the rotor on the vehicle; measure the final rotor thickness and compare it with the specification.	English: 10.5, 11.5 History and Social Science: WHII.1; VUS.1
Refinish the rotor off vehicle; measure the final rotor thickness and compare it with the specification.	English: 10.5, 11.5 History and Social Science: WHII.1; VUS.1
Retract and readjust the caliper piston on an integrated parking brake system.	
Check the brake pad wear indicator; determine the necessary action.	English: 10.5, 11.5 History and Social Science: WHII.1; VUS.1
Describe the importance of operating the vehicle to burnish/break-in replacement brake pads according to manufacturer's recommendations.	History and Social Science: WHII.1; VUS.1
BRAKES: Power-Assist Units	
Check the brake pedal travel with and without the engine running to verify the proper power booster operation.	English: 10.5, 11.5
Identify components of the brake power assist system (vacuum and hydraulic); check the vacuum supply (manifold or auxiliary pump) to vacuum-type power booster.	
BRAKES: Related Systems (i.e., Wheel Bearings, Parking Brakes, Electrical)	
Remove, clean, inspect, repack, and install wheel bearings; replace seals; install the hub and adjust bearings.	English: 10.5, 11.5
Check the parking brake system components for wear, binding, and corrosion; clean, lubricate, adjust and/or replace as needed.	
Check the parking brake operation and parking brake indicator light system operation; determine the necessary action.	History and Social Science: WHII.1; VUS.1
Check the operation of the brake stop light system.	
Replace the wheel bearing and race.	