

Student Name: _____

Date: _____

PROGRAM COMPETENCY PROFILE FOR CAREER TECHNICAL EDUCATION
Career Cluster: Transportation, Distribution, and Logistics

Program Name: Automobile/Automotive Mechanics Technology/Technician CIP: 470604

National Standard: National Automotive Technicians Education Foundation (NATEF)

Effective: 8/2013

Competencies (statement that provides the overview and defines the instructional area) Student will:	Knowledge, Content and Skills (what a student needs to know and be able to do and upon which they will be assessed) Student will:	<u>NH Common Core State Standards</u> – Aligned • English/Language Arts/Literacy: E • Mathematics: M • Science: S • Art: A	Rating Scale -Sample Performance Assessments (Performance tasks the student needs to demonstrate in order to be rated proficient in meeting the competency) Student will:	NATEF Standards				
Understand the concepts, techniques, and procedures of engine systems in order to repair and maintain engine systems. *General Engine Repair	1. Identify and describe the operation of the engine.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table> Customer with a hybrid states a light is on the dash. The tech must verify with customer, and diagnose the issue.	1	2	3	4	ER:G:2. Verify operation of the instrument panel engine warning indicators. ER:G:7. Identify hybrid vehicle internal combustion engine service precautions.
1	2	3	4					

Key: Rating Scale: 1 NO EXPOSURE; 2 = NOVICE (Information was covered in class, but student cannot demonstrate skill or knowledge without significant supervision); 3 = PROFICIENT (Student regularly demonstrates the knowledge or skill); 4= MASTERY (Student demonstrates successful completion of this skill numerous times without supervision.)

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	2. Evaluate condition and perform maintenance and light repair of the engine.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table> <p>A vehicle comes in for a 120k mile service. The technician will complete the service as follows: and returns RO to the service writer:</p> <ol style="list-style-type: none"> 1) T-belt 2) Water Pump 3) Valve adjustment 4) Replace engine oil. 5) Tire rotation 6) Replace engine oil filter. 7) Transmission service 8) Inspect front and rear brakes. 9) Check parking brake adjustment. 10) Inspect tie-rod ends, steering gearbox and boots. 11) Inspect suspension components. 12) Inspect drive shaft boots. 13) Inspect brake hoses and lines (including ABS). 14) Inspect all fluid levels, condition of fluids and check for leaks. 15) Inspect exhaust system. 16) Inspect fuel lines and connections. 17) Replace air cleaner element. 18) Replace dust and pollen filter. <p>Continue to # 3-5</p>	1	2	3	4	<p>ER:G:3. Inspect engine assembly for fuel, oil, coolant, and other leaks; determine necessary action.</p> <p>ER:G:4. Install engine covers using gaskets, seals, and sealers as required.</p> <p>ER:G:5. Remove and replace timing belt; verify correct camshaft timing.</p> <p>ER:G: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> <p>ER:CH:1. Adjust valves (mechanical or hydraulic lifters).</p>
1	2	3	4					
	3. Evaluate condition and perform maintenance and light repair of the lubrication and cooling system.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4	<p>ER:LC:1. 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> <p>ER:LC:2. Inspect, replace, and adjust drive belts, tensioners, and pulleys; check pulley and belt alignment.</p> <p>ER:LC:3. Remove, inspect, and replace thermostat and gasket/ seal.</p> <p>ER:LC:4. Inspect and test coolant; drain and recover coolant; flush and refill cooling system with recommended coolant; bleed air as required.</p> <p>ER:LC:5. Perform engine oil and filter change.</p>
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Understand the concepts, procedures and techniques of automatic transmission & transaxle in order to repair and maintain automatic transmission & transaxle. *Automatic/Transmission & Transaxle	4. Evaluate condition and perform maintenance and light repair of the Automatic Transmission & Transaxle.		<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">1</td> <td style="width: 20px; text-align: center;">2</td> <td style="width: 20px; text-align: center;">3</td> <td style="width: 20px; text-align: center;">4</td> </tr> </table>	1	2	3	4	AT:G:2. Check fluid level in a transmission or a transaxle equipped with a dip-stick. AT:G:3. Check fluid level in a transmission or a transaxle not equipped with a dip-stick. AT:G:4. Check transmission fluid condition; check for leaks. AT:IV:2. Inspect for leakage at external seals, gaskets, and bushings. AT:IV:3. Inspect power train mounts. AT:IV:4. Drain and replace fluid and filter(s).
1	2	3	4					
Understand the concepts, procedures and techniques of manual drive train and axles in order to repair and maintain manual drive train and axles. *Manual Drive Train And Axles	5. Evaluate condition and perform maintenance and light repair of the manual transmission & transaxle.		<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">1</td> <td style="width: 20px; text-align: center;">2</td> <td style="width: 20px; text-align: center;">3</td> <td style="width: 20px; text-align: center;">4</td> </tr> </table>	1	2	3	4	MT:G:2. Drain and refill manual transmission/ transaxle and final drive unit. MT:G:3. Check fluid condition; check for leaks. MT:C:1. Check and adjust clutch master cylinder fluid level. MT:C:2. Check for system leaks. MT:DIF:1. Clean and inspect differential housing; check for leaks; inspect housing vent. MT:DIF:2. Check and adjust differential housing fluid level. MT:DIF:3. Drain and refill differential housing. MT:AXL:1. Inspect and replace drive axle wheel studs. MT:FWD:2. Check for leaks at drive assembly seals; check vents; check lube level.
1	2	3	4					
Understand the concepts, procedures, and techniques of Suspension and Steering Systems in order to repair and maintain Suspension and Steering Systems	6. Evaluate the condition and perform maintenance and light repair of S&S.		<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">1</td> <td style="width: 20px; text-align: center;">2</td> <td style="width: 20px; text-align: center;">3</td> <td style="width: 20px; text-align: center;">4</td> </tr> </table> <p>As a tech working in a dealership, you are asked to diagnose a customer complaint of a banging noise while driving over bumps. You take the vehicle for a ride to confirm the complaint, and do hear the noise yourself and suspect that it's coming from the front. You raise the vehicle in the air and start checking the ball joints, and tie-rod ends. Those components seem good; however you notice the stabilizer bar end links are</p>	1	2	3	4	SS:G:2. Disable and enable supplemental restraint system (SRS). SS:RSS:1. Inspect rack and pinion steering gear inner tie rod ends (sockets) and bellows boots. SS:RSS:2. Determine proper power steering fluid type; inspect fluid level and condition. SS:RSS:4. Inspect for power steering fluid leakage; determine necessary action. SS:RSS:5. Remove, inspect, replace, and adjust power steering pump drive belt. SS:RSS:8. Inspect pitman arm, relay (centerlink/
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<p>*Suspension and Steering Systems</p>			loose. You replace them and road test the vehicle to confirm the noise is gone. After confirmation you return the vehicle back to service.	intermediate) rod, idler arm and mountings, and steering linkage damper. SS:RSS:9. Inspect tie rod ends (sockets), tie rod sleeves, and clamps. SS:RSS:10. Inspect upper and lower control arms, bushings, and shafts. SS:RSS:11. Inspect and replace rebound and jounce bumpers. SS:RSS:12. Inspect track bar, strut rods/ radius arms, and related mounts and bushings. SS:RSS:13. Inspect upper and lower ball joints (with or without wear indicators). SS:RSS:14. Inspect suspension system coil springs and spring insulators (silencers). SS:RSS:15. Inspect suspension system torsion bars and mounts. SS:RSS:16. Inspect and replace front stabilizer bar (sway bar) bushings, brackets, and links. SS:RSS:17. Inspect strut cartridge or assembly. SS:RSS:18. Inspect front strut bearing and mount. SS:RSS:19. Inspect rear suspension system lateral links/ arms (track bars), control (trailing) arms. SS:RSS:20. Inspect rear suspension system leaf spring(s), spring insulators (silencers), shackles, brackets, bushings, center pins/ bolts, and mounts. SS:RSS:21. Inspect, remove, and replace shock absorbers; inspect mounts and bushings.

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	7. Evaluate the condition and perform maintenance and light repair of wheels and tires.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table> As a technician, you are handed a repair order with a customer complaint that the right front tire keeps losing air. Upon inspection you find a nail stuck in the sidewall of the tire and deem it not repairable. You then have service sell the customer a new tire and explain why the old one could not be repaired. After the customer agrees to the repair you mount and balance the new tire on to the rim and install the rim back on the vehicle.	1	2	3	4	SS:WA:1. Perform prealignment inspection and measure vehicle ride height; determine necessary action. SS:WT: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. SS:WT:2. Rotate tires according to manufacturer's recommendations. SS:WT:3. Dismount, inspect, and remount tire on wheel; balance wheel and tire assembly (static and dynamic). SS:WT:4. Dismount, inspect, and remount tire on wheel equipped with tire pressure monitoring system sensor. SS:WT:5. Inspect tire and wheel assembly for air loss; perform necessary action. SS:WT:6. Repair tire using internal patch. SS:WT:8. Demonstrate knowledge of steps required to remove and replace sensors in a tire pressure monitoring system.
1	2	3	4					
Understand the concepts, procedures and techniques in order to repair and maintain braking systems. *General, Hydraulic, Drum, and Disc Brake Systems	8. Identify and describe operation of Hydraulic and related systems.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table> Working as a technician in local dealership, you are asked to describe to a customer the procedure that will need to be performed in order to verify the customer's concern of an unusual brake noise and a red Brake lamp illuminated. The customer authorizes all repairs per estimate. Continue to #9	1	2	3	4	BR:G:2. Describe procedure for performing a road test to check brake system operation, including an anti-lock brake system (ABS). BR:HS:5. Identify components of brake warning light system.
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	9. Evaluate condition and perform maintenance and light repair of brake hydraulic and related systems.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4	BR:HS:1. Measure brake pedal height, travel, and free play (as applicable); determine necessary action. BR:HS:2. Check master cylinder for external leaks and proper operation. BR:HS:3. Inspect brake lines, flexible hoses, and fittings for leaks, dents, kinks, rust, cracks, bulging, wear, loose fittings and supports; determine necessary action. BR:HS:4. Select, handle, store, and fill brake fluids to proper level. BR:HS:6. Bleed and/ or flush brake system. BR:HS:7. Test brake fluid for contamination.
1	2	3	4					
	10. Evaluate condition and perform maintenance and light repair of drum brakes.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table> Working as a technician in local dealership, you are asked by your writer to check the rear drum brakes on a car which has fluid dripping from the rear backing plates. You inspect rear brakes and report back to service writer.	1	2	3	4	BR:DR:1. Remove, clean, inspect, and measure brake drum diameter; determine necessary action. BR:DR:2. Refinish brake drum and measure final drum diameter; compare with specifications. BR:DR:3. Remove, clean, and inspect brake shoes, springs, pins, clips, levers, adjusters/ self-adjusters, other related brake hardware, and backing support plates; lubricate and reassemble. BR:DR:4. Inspect wheel cylinders for leaks and proper operation; remove and replace as needed. BR:DR:5. Pre-adjust brake shoes and parking brake; install brake drums or drum/ hub assemblies and wheel bearings; make final checks and adjustments. BR:DR:6. Install wheel and torque lug nuts.
1	2	3	4					
	11. Identify and describe the operation of disc brakes.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table> Working as a technician in a local independent shop, you are asked to inspect a car that is equipped with rear disc brakes and is squealing from the rear wheels. Customer authorizes all repairs needed per estimate. Continue to #12	1	2	3	4	BR:DI:11. Describe importance of operating vehicle to burnish/ break-in replacement brake pads according to manufacturer's recommendations.
1	2	3	4					
	12. Evaluate condition and perform maintenance and light repair of disc brakes.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td> <td>2</td> <td>3</td> <td>4</td> </tr> </table>	1	2	3	4	BR:DI:1. Remove and clean caliper assembly; inspect for leaks and damage/ wear to caliper housing; determine necessary action. BR:DI:2. Clean and inspect caliper mounting and slides/ pins for proper operation, wear, and damage; determine necessary action.
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				BR:DI:3. Remove, inspect, and replace pads and retaining hardware; determine necessary action. BR:DI:4. Lubricate and reinstall caliper, pads, and related hardware; seat pads and inspect for leaks. BR:DI:5. Clean and inspect rotor, measure rotor thickness, thickness variation, and lateral runout; determine necessary action. BR:DI:6. Remove and reinstall rotor. BR:DI:7. Refinish rotor on vehicle; measure final rotor thickness and compare with specifications. BR:DI:8. Refinish rotor off vehicle; measure final rotor thickness and compare with specifications. BR:DI:9. Retract and re-adjust caliper piston on an integral parking brake system. BR:DI:10. Check brake pad wear indicator; determine necessary action.				
	13. Evaluate condition and perform maintenance/light repair of miscellaneous parts of braking system.		<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="width: 20px; text-align: center;">1</td> <td style="width: 20px; text-align: center;">2</td> <td style="width: 20px; text-align: center;">3</td> <td style="width: 20px; text-align: center;">4</td> </tr> </table> <p>While performing a state inspection you check the parking brake for normal operation. You find that the car does not stay put when the e-brake lever is pulled and the vehicle is put in drive. Upon further inspection you find that the e-brake cable has snapped. To pass this vehicle for inspection you need to replace the e-brake cable and adjust it so that the vehicle is held securely in place when the lever is pulled up.</p>	1	2	3	4	BR:PA:2. Check vacuum supply (manifold or auxiliary pump) to vacuum-type power booster. BR:MSC:1. Remove, clean, inspect, repack, and install wheel bearings; replace seals; install hub and adjust bearings. BR:MSC:2. Check parking brake cables and components for wear, binding, and corrosion; clean, lubricate, adjust or replace as needed. BR:MSC:3. Check parking brake operation and parking brake indicator light system operation; determine necessary action. BR:MSC:4. Check operation of brake stop light system. BR:EB:1. Identify traction control/vehicle stability control system components.
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Understand the procedures and techniques of Electrical/Electronic Systems in order to repair and maintain Electrical/Electronic Systems. *Electrical /Electronic Systems	14. Identify and describe operation of basic electrical systems.		<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">1</td> <td style="width: 20px; text-align: center;">2</td> <td style="width: 20px; text-align: center;">3</td> <td style="width: 20px; text-align: center;">4</td> </tr> </table> <p>Working as a technician in a local dealership you are asked to inspect several lighting issues. Using a DMM along with wiring diagrams you find several wiring issues including an open circuit, a short circuit and high resistance. Customer authorizes all repairs needed per estimate. Continue to # 15</p>	1	2	3	4	EL:G:2. Demonstrate knowledge of electrical/electronic series, parallel, and series-parallel circuits using principles of electricity (Ohm's Law). EL:G:3. Use wiring diagrams to trace electrical/electronic circuits. EL:G:4. Demonstrate proper use of a digital multimeter (DMM) when measuring source voltage, voltage drop (including grounds), current flow, and resistance. EL:G:5. Demonstrate knowledge of the causes and effects from shorts, grounds, opens, and resistance problems in electrical/electronic circuits.
	1	2	3	4				
	15. Evaluate condition and perform maintenance and light repair of basic electrical systems.		<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">1</td> <td style="width: 20px; text-align: center;">2</td> <td style="width: 20px; text-align: center;">3</td> <td style="width: 20px; text-align: center;">4</td> </tr> </table>	1	2	3	4	EL:G:8. Measure key-off battery drain (parasitic draw). EL:G:9. Inspect and test fusible links, circuit breakers, and fuses; determine necessary action. EL:G:10. Perform solder repair of electrical wiring. EL:G:11. Replace electrical connectors and terminal ends.
1	2	3	4					
16. Identify and describe operation of battery, starting and charging systems.		<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; text-align: center;">1</td> <td style="width: 20px; text-align: center;">2</td> <td style="width: 20px; text-align: center;">3</td> <td style="width: 20px; text-align: center;">4</td> </tr> </table> <p>Working as a technician in a local dealership you are asked to diagnosis a vehicle that will not crank. You must charge the battery before further diagnosis. After charging the battery the vehicle will now start. The customer wants a thorough inspection of the starting and charging system for winter. You perform voltage drop of the starter circuit and an alternator output test. The alternator is found to be bad. Customer authorizes all repairs needed per estimate. Continue to #17</p>	1	2	3	4	EL:BS:8. Identify electronic modules, security systems, radios, and other accessories that require reinitialization or code entry after reconnecting vehicle battery.	
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	18. Evaluate condition and perform maintenance and light repair of lightening and accessories.		<table border="1" style="margin-bottom: 5px;"> <tr> <td style="width: 20px; text-align: center;">1</td> <td style="width: 20px; text-align: center;">2</td> <td style="width: 20px; text-align: center;">3</td> <td style="width: 20px; text-align: center;">4</td> </tr> </table> <p>You are assisting an experienced technician at a local shop. He asks you to check all the lights and the wiper operation on a used car he is working on. You found there is a blown tail lamp bulb and the headlamps are aimed wrong. You also find the vehicle has bad wiper blades and a cracked door panel. You are instructed to perform these repairs and reset the oil life monitor light as authorized by the used car manager.</p>	1	2	3	4	EL:LI:1. Inspect interior and exterior lamps and sockets including headlights and auxiliary lights (fog lights/driving lights); replace as needed. EL:LI:2. Aim headlights. EL:ACC:1. Disable and enable airbag system for vehicle service; verify indicator lamp operation. EL:ACC:2. Remove and reinstall door panel. EL:ACC:4. Verify operation of instrument panel gauges and warning/indicator lights; reset maintenance indicators. EL:ACC:5. Verify windshield wiper and washer operation; replace wiper blades.
1	2	3	4					
Understand Heating and Air Conditioning (HAC) Systems in order to repair and maintain Heating and Air Conditioning (HAC) Systems. *HAC Systems	19. Evaluate condition and perform maintenance/light repair of heating and air conditioning.		<table border="1" style="margin-bottom: 5px;"> <tr> <td style="width: 20px; text-align: center;">1</td> <td style="width: 20px; text-align: center;">2</td> <td style="width: 20px; text-align: center;">3</td> <td style="width: 20px; text-align: center;">4</td> </tr> </table> <p>Working as a technician in a local shop, you are asked to perform an AC performance test on a customer's car. The customer authorizes replacement of the AC drive belt and tensioner and you are asked to perform the repair.</p>	1	2	3	4	HAC:REF:1. Inspect and replace A/C compressor drive belts, pulleys, and tensioners; determine necessary action. HAC:REF:3. Inspect A/C condenser for airflow restrictions; determine necessary action. HAC:CO:1. Inspect engine cooling and heater systems hoses; perform necessary action. HAC:OS:1. Inspect A/C-heater ducts, doors, hoses, cabin filters, and outlets; perform necessary action.
1	2	3	4					
Understand the procedures and techniques, and routine(s) in Engine Performance. *Engine Performance	20. Evaluate condition and perform maintenance/light repair of general engine performance.		<table border="1" style="margin-bottom: 5px;"> <tr> <td style="width: 20px; text-align: center;">1</td> <td style="width: 20px; text-align: center;">2</td> <td style="width: 20px; text-align: center;">3</td> <td style="width: 20px; text-align: center;">4</td> </tr> </table> <p>As a technician, customer states vehicle lacks power and fails emission. You perform a compression test. Report and explain findings to the service writer. Continue to#37</p>	1	2	3	4	EP:G:2. Perform engine absolute (vacuum/boost) manifold pressure tests; determine necessary action EP:G:4. Perform cylinder cranking and running compression tests; determine necessary action. EP:G:5. Perform cylinder leakage test; determine necessary action. EP:G:6. Verify engine operating temperature. EP:G:7. Remove and replace spark plugs; inspect secondary ignition components for wear and damage.
1	2	3	4					
	21. Evaluate condition and perform maintenance/light repair of computerized engine controls.		<table border="1" style="margin-bottom: 5px;"> <tr> <td style="width: 20px; text-align: center;">1</td> <td style="width: 20px; text-align: center;">2</td> <td style="width: 20px; text-align: center;">3</td> <td style="width: 20px; text-align: center;">4</td> </tr> </table> <p>As a technician, a vehicle failed emissions inspection. You need to explain to the customer why this occurred.</p>	1	2	3	4	EP:CEC:1. Retrieve and record diagnostic trouble codes, OBD monitor status, and freeze frame data; clear codes when applicable. EP:CEC:2. Describe the importance of operating all OBDII monitors for repair verification.
1	2	3	4					

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PROGRAM COMPETENCY PROFILE FOR CAREER TECHNICAL EDUCATION

Career Cluster: Transportation, Distribution, and Logistics

Program Name: Automobile/Automotive Mechanics Technology/Technician CIP: 470604

National Standard: National Automotive Technicians Education Foundation (NATEF)

Effective 8/2013

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	22. Evaluate condition and perform maintenance/light repair of fuel air induction and exhaust systems.		<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="width: 20px; text-align: center;">1</td> <td style="width: 20px; text-align: center;">2</td> <td style="width: 20px; text-align: center;">3</td> <td style="width: 20px; text-align: center;">4</td> </tr> </table> <p>As a technician you are asked to perform a 120k service which includes remove and replacement of air and fuel filters, and inspection of the exhaust system. Report back to service writer.</p>	1	2	3	4	EP:FAE:1. Replace fuel filter(s). EP:FAE:2. Inspect, service, or replace air filters, filter housings, and intake duct work. EP:FAE:3. Inspect integrity of the exhaust manifold, exhaust pipes, muffler(s), catalytic converter(s), resonator(s), tail pipe(s), and heat shields; determine necessary action. EP:FAE:4. Inspect condition of exhaust system hangers, brackets, clamps, and heat shields; repair or replace as needed.
1	2	3	4					
Understand the personal and environmental safety practices in accordance with local, state, and federal regulations. *Personal and Environmental Safety	23. Research applicable customer, vehicle and service information.		<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="width: 20px; text-align: center;">1</td> <td style="width: 20px; text-align: center;">2</td> <td style="width: 20px; text-align: center;">3</td> <td style="width: 20px; text-align: center;">4</td> </tr> </table> <p>As a Service Writer a customer ask for vehicle service. You gather information from the customer. You write a repair order (RO) addressing customer concerns.</p>	1	2	3	4	ER:G:1. Research applicable vehicle and service information, vehicle service history, service precautions, and technical service bulletins. AT:G:1. Research applicable vehicle and service information, fluid type, vehicle service history, service precautions, and technical service bulletins. MT:G:1. Research applicable vehicle and service information, fluid type, vehicle service history, service precautions, and technical service bulletins. SS:G:1. Research applicable vehicle and service information, vehicle service history, service precautions, and technical service bulletins. BR:G:1. Research applicable vehicle and service information, vehicle service history, service precautions, and technical service bulletins. EL:G:1. Research applicable vehicle and service information, vehicle service history, service precautions, and technical service bulletins. HAC:G:1. Research applicable vehicle and service information, vehicle service history, service precautions, and technical service bulletins. EP:G:1. Research applicable vehicle and service information, vehicle service history, service precautions, and technical service bulletins.
1	2	3	4					

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	<p>24. Identify, describe and demonstrate shop and personal safety procedures.</p> <p>AAI 8. Health, Safety, and Environment: Explain the health and safety laws and practices affecting the employee, the surrounding community, and the environment in this industry.</p>		<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td style="width: 20px; text-align: center;">1</td> <td style="width: 20px; text-align: center;">2</td> <td style="width: 20px; text-align: center;">3</td> <td style="width: 20px; text-align: center;">4</td> </tr> </table> <p>As an entry level technician you have to participate in a training session that encompasses all the safety protocol and complete a written exam.</p>	1	2	3	4	<p>RS:SPS:1. Identify general shop safety rules and procedures.</p> <p>RS:SPS:2. Utilize safe procedures for handling of tools and equipment.</p> <p>RS:SPS:3. Identify and use proper placement of floor jacks and jack stands.</p> <p>RS:SPS:4. Identify and use proper procedures for safe lift operation.</p> <p>RS:SPS:5. Utilize proper ventilation procedures for working within the lab/shop area.</p> <p>RS:SPS:6. Identify marked safety areas.</p> <p>RS:SPS:7. 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.</p> <p>RS:SPS:8. Identify the location and use of eye wash stations.</p> <p>RS:SPS:9. Identify the location of the posted evacuation routes.</p> <p>RS:SPS:10. Comply with the required use of safety glasses, ear protection, gloves, and shoes during lab/shop activities.</p> <p>RS:SPS:11. Identify and wear appropriate clothing for lab/shop activities.</p> <p>RS:SPS:12. Secure hair and jewelry for lab/shop activities.</p> <p>RS:SPS:13. Demonstrate awareness of the safety aspects of supplemental restraint systems (SRS), electronic brake control systems, and hybrid vehicle high voltage circuits.</p> <p>RS:SPS:14. Demonstrate awareness of the safety aspects of high voltage circuits (such as high intensity discharge (HID) lamps, ignition systems, injection systems, etc.).</p> <p>RS:SPS:15. Locate and demonstrate knowledge of material safety data sheets (MSDS).</p>
1	2	3	4					

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	25. Identify, describe and demonstrate proper use of tools and equipment. AAI 4. Technical and Production Skills: Identify specific production and technical skills required for this industry. AAI 5. Underlying Principles of Technology: Explain through discussion the technological systems used within this industry.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table> <p>As a technician you will be asked to perform a proper state inspection by a NH state trooper to obtain your state inspection license. You will need to demonstrate to the officer the proper use of tools and equipment required to complete a NH state inspection.</p>	1	2	3	4	RS:TE:1. Identify tools and their usage in automotive applications. RS:TE:2. Identify standard and metric designation. RS:TE:3. Demonstrate safe handling and use of appropriate tools. RS:TE:4. Demonstrate proper cleaning, storage, and maintenance of tools and equipment. RS:TE:5. Demonstrate proper use of precision measuring tools (i.e. micrometer, dial-indicator, dial-caliper).
1	2	3	4					
	26. Identify, describe and demonstrate proper vehicle preparation.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table> <p>As a Service Writer a customer asks for vehicle service. You gather information from the customer. You write a repair order (RO) addressing customer concerns.</p>	1	2	3	4	RS:PVS:1. Identify information needed and the service requested on a repair order. RS:PVS:2. Identify purpose and demonstrate proper use of fender covers, mats. RS:PVS:3. Demonstrate use of the three C's (concern, cause, and correction). RS:PVS:4. Review vehicle service history. RS:PVS:5. Complete work order to include customer information, vehicle identifying information, customer concern, related service history, cause, and correction.
1	2	3	4					
	27. Identify, describe and demonstrate proper customer service.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table> <p>As a Service Writer a customer asks for vehicle service. You gather information from the customer. You write a repair order (RO) addressing customer concerns and upon completion of vehicle service you ensure vehicle is prepared to return per company policy.</p>	1	2	3	4	RS:PVC:1. Ensure vehicle is prepared to return to customer per school/company policy (floor mats, steering wheel cover, etc.).
1	2	3	4					

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	28. Identify and describe general Hybrid safety precautions		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table> As a technician a hybrid vehicle comes in for service. You take the necessary safety precautions and complete the service.	1	2	3	4	AT:OV:2. Describe the operational characteristics of a hybrid vehicle drive train. SS:RSS:23. Identify hybrid vehicle power steering system electrical circuits and safety precautions. EL:BS:7. Identify high-voltage circuits of electric or hybrid electric vehicle and related safety precautions. EL:BS:9. Identify hybrid vehicle auxiliary (12v) battery service, repair, and test procedures.
1	2	3	4					
Understand the necessary employability skills to achieve success in today’s workplace.	29. Discuss and assess business creation possibilities and the process of opening your own shop. AAI 1. Planning: Explain the key elements of a long-term plan for a successful company. AAI 2. Management: Discuss the different forms of management and ownership within this industry. AAI 3. Finance: Explain the key components of financial management of a company. AAI 6. Labor Issues: Explain the employees' and employers' rights and responsibilities in this industry. AAI 7. Community Issues: Discuss the ways a company can impact its community and the ways a community can impact a company.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table> You have decided that you want to open your own shop. You have made an appointment to meet with a small business representative to discuss a business plan Continue to #30	1	2	3	4	
1	2	3	4					

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	30. Identify and discuss the traits and behaviors of an entrepreneur (leadership, personal assessment, personal management).		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table>	1	2	3	4	
1	2	3	4					
	31. Demonstrate personal growth, community leadership, democratic principles and social responsibility by participating in activities/events offered through student organizations.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table> As a (CTSO) member develop and share with your peers a personal plan of standards and strategies for achieving growth, and leadership skills.	1	2	3	4	
1	2	3	4					
	32. Decision-Making & Problem-Solving: Demonstrate and apply good decision-making and problem-solving skills by outlining issues in situations/problems and determining, collecting, and organizing information needed in order to formulate a solution.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table> You are a recent college graduate that is applying for a highly competitive position in the auto industry. How will you stand out from other applicants? You will need to create a cover letter, resume, and electronic portfolio that highlight your strengths. Continue to 33-36, 38	1	2	3	4	
1	2	3	4					
	33. Self-Management: Demonstrate and apply self-management skills by adhering to regulations, being responsible and following through on commitments.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td>1</td><td>2</td><td>3</td><td>4</td> </tr> </table>	1	2	3	4	
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	34. Communication Skills: Demonstrate and apply effective communication skills: verbal, written, visual and listening		<table border="1" style="display: inline-table;"> <tr> <td style="width: 20px;">1</td> <td style="width: 20px;">2</td> <td style="width: 20px;">3</td> <td style="width: 20px;">4</td> </tr> </table>	1	2	3	4	
1	2	3	4					
	35. Ability to Work with Others: Demonstrate and apply the necessary skills in order to work effectively with others. AAI 9. Personal Work Habits: Explain the work habits an employer looks for in an employee in this industry.		<table border="1" style="display: inline-table;"> <tr> <td style="width: 20px;">1</td> <td style="width: 20px;">2</td> <td style="width: 20px;">3</td> <td style="width: 20px;">4</td> </tr> </table>	1	2	3	4	
1	2	3	4					
	36. Information Use - Research, Analysis, and Technology: Demonstrate and apply the use of information through research, analysis, and technology. AAI 5. Underlying Principles of Technology: Explain through discussion the technological systems used within this industry."		<table border="1" style="display: inline-table;"> <tr> <td style="width: 20px;">1</td> <td style="width: 20px;">2</td> <td style="width: 20px;">3</td> <td style="width: 20px;">4</td> </tr> </table>	1	2	3	4	
1	2	3	4					
	37. Mathematical Concepts: Demonstrate mathematical and computation skills as applied to real world situations.		<table border="1" style="display: inline-table;"> <tr> <td style="width: 20px;">1</td> <td style="width: 20px;">2</td> <td style="width: 20px;">3</td> <td style="width: 20px;">4</td> </tr> </table>	1	2	3	4	
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	38. Career Development: Demonstrate personal/career development skills by completing a career plan.		<table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 25%;">1</td> <td style="width: 25%;">2</td> <td style="width: 25%;">3</td> <td style="width: 25%;">4</td> </tr> </table>	1	2	3	4	
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