North Carolina CTE

Automotive Service III (2016): Grades 9, 10, 11, 12

Adopted 2016

Understand Engine Service 1.00	**I-A-5.** Remove and replace timing belt; verify correct camshaft timing. I-A-5
	I-B-1. Adjust valves (mechanical or hydraulic lifters). I-B-1
Understand Automatic Transmission/Transaxle Service 2.00	**II-B-2.** Inspect for leakage at external seals, gaskets, and bushings. II-B-2
	II-B-3. Inspect replace and align power train mounts. II-B-3
	II-C-1. Describe the operational characteristics of a continuously variable transmission (CVT). II-C-1
	II-C-2. Describe the operational characteristics of a hybrid vehicle drive train. II-C-2
Understand Manual Drive Train & Axle Service 3.00	**III-C-1.** Describe the operational characteristics of an electronically-controlled manual transmission/transaxle. III-C-1
	III-D-1. Inspect, remove, and replace front wheel drive (FWD) bearings, hubs, and seals. III-D-1
	III-D-2. Inspect, service, and replace shafts, yokes, boots, and universal/CV joints. (Phasing) III-D-2
	III-E-1. Inspect and replace drive axle wheel studs. III-E-1
	III-F-1. Inspect front-wheel bearings and locking hubs. III-F-1
	III-F-2. Check for leaks at drive assembly seals; check vents; check lube level. III-F-2
	ASE-C-6. Road test the vehicle to verify drive train noises and vibration. ASE-C-6
Understand Suspension & Steering Service 4.00	**IV-A-2.** Disable and enable supplemental restraint system (SRS). IV-A-2
	-21. Inspect electric power-assisted steering. IV-B-21

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	IV-C-1. Perform prealignment inspection and measure vehicle ride height; determine necessary action. IV-C-1
	ASE-D-11. Inspect and replace steering linkage damper(s). ASE-D-11
	ASE-D-39. Identify alignment-related symptoms such as vehicle wander, drift, and pull. ASE-D-39
	ASE-D-41. Measure front and rear wheel camber; adjust as needed. ASE-D-41
	ASE-D-42. Measure caster; adjust as needed. ASE-D-42
	ASE-D-43. Measure front wheel toe; adjust as needed. ASE-D-43
	ASE-D-44. Center the steering wheel using mechanical methods. ASE-D-44
	ASE-D-45. Measure rear wheel toe; adjust as needed. ASE-D-45
	ASE-D-46. Measure thrust angle. ASE-D-46
	ASE-D-47. Calibrate steering angle sensor ASE-D-47
	ASE-D-17. Inspect non-independent front axle assembly for damage and misalignment. ASE-D-17
	ASE-D-33. Inspect non-independent rear axle assembly for damage and misalignment. ASE-D-33
Understand Brake Service 5.00	**V-B-1.** Measure brake pedal height, travel, and free play (as applicable); determine necessary action. V-B-1
	V-E-1. Check brake pedal travel with, and without, engine running to verify proper power booster operation. V-E-1
	V-E-2. Check vacuum supply (manifold or auxiliary pump) to vacuum-type power booster. V-E-2
	V-F-2. Check parking brake cables and components for wear, binding, and corrosion; clean, lubricate, adjust or replace as needed. V-F-2
	V-F-5. Replace wheel bearing and race. V-F-5
	V-F-6. Inspect and replace wheel studs. V-F-6
	V-G-1. Identify traction control/vehicle stability control system components. V-G-1
	V-G-2. Describe the operation of a regenerative braking system. V-G-2
Un Skip to main content **Electrical/Electronic**	**\-4.** Demonstrate proper use of a digital multimeter (DMM) when measuring source voltage, voltage drop (including grounds), current flow, and

System Service 6.00	**resistance.** VI-A-4
	VI-A-5. Demonstrate knowledge of the causes and effects from shorts, grounds, opens, and resistance problems in electrical/electronic circuits. VI-A-5
	VI-A-6. Check operation of electrical circuits with a test light. VI-A-6
	VI-A-7. Check operation of electrical circuits with fused jumper wires. VI-A-7
	VI-A-8. Measure key-off battery drain (parasitic draw). VI-A-8
	VI-B-8. Identify electronic modules, security systems, radios, and other accessories that require reinitialization or code entry after reconnecting vehicle battery. VI-B-8
	VI-C-2. Perform starter circuit voltage drop tests; determine necessary action. VI-C-2
	VI-D-4. Perform charging circuit voltage drop tests; determine necessary action. VI-D-4
	VI-F-1. Disable and enable airbag system for vehicle service; verify indicator lamp operation. VI-F-1
	VI-F-3. Describe the operation of keyless entry/remote-start systems. VI-F-3
Understand Heating & Air Conditioning Service 7.00	**VII-D-2.** Identify the source of A/C system odors. VII-D-2
Understand Engine Performance Service 8.00	**VIII-A-2.** Perform engine absolute (vacuum/boost) manifold pressure tests; determine necessary action VIII-A-2
	VIII-A-3. Perform cylinder power balance test; determine necessary action. VIII-A-3
	VIII-A-4. Perform cylinder cranking and running compression tests; determine necessary action. VIII-A-4
	VIII-A-5. Perform cylinder leakage test; determine necessary action. VIII-A-5
	VIII-B-1. Retrieve and record diagnostic trouble codes, OBD monitor status, and freeze frame data; clear codes when applicable. VIII-B-1
	VIII-B-2. Describe the importance of operating all OBDII monitors for repair verification. VIII-B-2
Preparing Vehicle For Cu	**ST-D-1.** Ensure vehicle is prepared to return to customer per school/company policy. (floor mats, steering wheel cover, etc.) ST-D-1

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Personal Standards 10.00	**ST-E-1.**	**Reports to work daily on time; able to take directions and motivated to accomplish the task at hand.** ST-E-1
	ST-E-2.	**Dresses appropriately and uses language and manners suitable for the workplace.** ST-E-2
	ST-E-3.	**Maintains appropriate personal hygiene.** ST-E-3
	ST-E-4.	**Meets and maintains employment eligibility criteria, such as drug/alcohol-free status, clean driving record, etc.** ST-E-4
	ST-E-5.	**Demonstrates honesty, integrity, and reliability.** ST-E-5
Work Habits/Ethic 11.00	**ST-F-1.**	**Complies with workplace policies/laws.** ST-F-1
	ST-F-2.	**Contributes to the success of the team, assists others and requests help when needed.** ST-F-2
	ST-F-3.	**Works well with all customers and coworkers.** ST-F-3
	ST-F-4.	**Negotiates solutions to interpersonal and workplace conflicts.** ST-F-4
	ST-F-5.	**Contributes ideas and initiative.** ST-F-5
	ST-F-6.	**Follows directions.** ST-F-6
	ST-F-7.	**Communicates (written and verbal) effectively with customers and coworkers.** ST-F-7
	ST-F-8.	**Reads and interprets workplace documents; writes clearly and concisely.** ST-F-8
	ST-F-9.	**Analyzes and resolves problems that arise in completing assigned tasks.** ST-F-9
	ST-F-10.	**Organizes and implements a productive plan of work.** ST-F-10
	ST-F-11.	**Uses scientific, technical, engineering and mathematics principles and reasoning to accomplish assigned tasks.** ST-F-11
	ST-F-12.	**Identifies and address the needs of all customers, providing helpful, courteous and knowledgeable service and advice as needed.** ST-F-12