

**CORRELATION
FLORIDA DEPARTMENT OF EDUCATION
COURSE DESCRIPTION**

SUBJECT: Industrial Education
COURSE NAME: Automotive Service Technology 11
SUBMISSION TITLE: Automotive Excellence Volume 1 © 2007
PUBLISHER: Glencoe/McGraw-Hill
GRADE(S): 9-12

COURSE CODE NUMBER:

OUTCOME NUMBER	BENCHMARK NUMBER	INTENDED OUTCOME/BENCHMARK DESCRIPTION	PAGE(S) OR LOCATION(S) WHERE TAUGHT IN MAJOR TOOL
19.0		DEMONSTRATE PROFICIENCY IN GENERAL ENGINE DIAGNOSIS--The student will be able to:	
19.01		Identify and interpret engine performance concerns; determine necessary action. LA.A.142, LA.A.143, LA.A.244	P-1 SE1: EP371-378
19.02		Research applicable vehicle and service information, such as engine management system operation, vehicle service history, service precautions, and technical service bulletins. LA.A.142, LA.A.143, LA.A.244	P-1 SE1: HB44, SS548, SS592, EP372
19.03		Locate and interpret vehicle and major component identification numbers (VIN, vehicle certification labels, and calibration decals). LA.A.142, LA.A.143, LA.A.244	P-1 SE1: HB44, SS528, EP410-411
19.04		Inspect engine assembly for fuel, oil, coolant, and other leaks; determine necessary action. LA.A.142, LA.A.143, LA.A.244	P-2 SE1: EP371-378, EP380-381
19.05		Diagnose unusual engine noise or vibration concerns; determine necessary action. LA.A.142, LA.A.143, LA.A.244	P-2 SE1: EP371-379
19.06		Diagnose unusual exhaust color, odor, and sound; determine necessary action. LA.A.142, LA.A.143, LA.A.244	P-2 SE1: EP357, EP372
19.07		Perform engine absolute (vacuum/boost) manifold pressure tests; determine necessary action. SC.H.346, LA.A.142, LA.A.143, LA.A.244, MA.B.442, MA.E.141	P-1 SE1: EP376-378

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19.08		Perform cylinder power balance test; determine necessary action. SC.H.346, LA.A.142, LA.A.143, LA.A.244, MA.B.242	P-1 SE1: EP375
19.09		Perform cylinder compression test; determine necessary action. SC.H.346, LA.A.142, LA.A.143, LA.A.244, MA.B.242	P-1 SE1: EP372-374
19.10		Perform cylinder leakage test; determine necessary action. SC.H.346, LA.A.142, LA.A.143, LA.A.244, MA.B.242	P-1 SE1: EP374-375
19.11		Diagnose engine mechanical, electrical, electronic, fuel, and ignition concerns with an oscilloscope and engine diagnostic equipment; determine necessary action. SC.H.346, LA.A.142, LA.A.143, LA.A.244, MA.B.442, MA.E.41	P-1 SE1: EP425, EP478-479
19.12		Prepare 4 or 5 gas analyzer; inspect and prepare vehicle for test and obtain exhaust readings; interpret readings and determine necessary action. SC.H.346, LA.A.142, LA.A.143, LA.A.244, MA.B.442, MA.E.141	P-1 SE1: EP501
19.13		Verify engine operating temperature; determine necessary action. SC.H.346, LA.A.142, LA.A.143, LA.A.244, MA.B.442, MA.E.141	P-1 SE1: EP381
19.14		Perform cooling system pressure tests; check coolant condition; inspect and test radiator, pressure cap, coolant recovery tank, and hoses; perform necessary action. SC.H.346, LA.A.142, LA.A.143, LA.A.244, MA.B.442, MA.E.141	P-1 SE1: EP381-383
19.15		Verify correct camshaft timing. SC.H.346, LA.A.142, LA.A.143, LA.A.244, MA.B.442, MA.E.141	P-2 SE1: EP362-363

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20.0		DEMONSTRATE PROFICIENCY IN COMPUTERIZED ENGINE CONTROLS DIAGNOSIS AND REPAIR --The student will be able to:	
20.01		Retrieve and record stored OBD I diagnostic trouble codes; clear codes. SC.H.346, LA.A.142, LA.A.143, LA.A.244, MA.B.442, MA.E.141	P-1 SE1: EP471-474, EP476-483
20.02		Retrieve and record stored OBDII diagnostic trouble codes; clear codes. SC.H.346, LA.A.142, LA.A.143, LA.A.244, MA.B.442, MA.E.141	P-1 SE1: EP405-406, EP471-474, EP475-483
20.03		Diagnose the causes of emissions or driveability concerns resulting from failure of computerized engine controls with stored diagnostic trouble codes. SC.H.346, LA.A.142, LA.A.143, LA.A.244, MA.B.442, MA.E.141	P-1 SE1: EP475-480, EP500-501
20.04		Diagnose emissions or driveability concerns resulting from failure of computerized engine controls with no stored diagnostic trouble codes determine necessary action. SC.H.346, LA.A.142, LA.A.143, LA.A.244	P-1 SE1: EP475-480, EP500-501
20.05		Check for module communication errors using a scan tool.	P-2 SE1: EP391, EP412
20.06		Inspect and test computerized engine control system sensors, powertrain control module (PCM), actuators, and circuits using a graphing multimeter (GMM)/digital storage oscilloscope (DSO); perform necessary action. SC.H.346, LA.A.142, LA.A.143, LA.A.244, MA.B.442, MA.E.141	P-1 SE1: EP478-479
20.07		Obtain and interpret scan tool data. SC.H.346, LA.A.142, LA.A.143, LA.A.244, MA.B.442, MA.E.141	P-1 SE1: EP372

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20.08		Access and use service information to perform step-by-step diagnosis. (ESI). SC.H.346, LA.A.142, LA.A.143, LA.A.244, MA.B.442, MA.E.141	P-1 SE1: EP500-501
20.09		Diagnose driveability and emissions problems resulting from malfunctions of interrelated systems (cruise control, security alarms, suspension controls, traction controls, A/C, automatic transmissions, non-OEM-installed accessories, or similar systems); determine necessary action. SC.H.346, LA.A.142, LA.A.143, LA.A.244, MA.B.442, MA.E.141	P-3 SE1: EP389-391
21.0		DEMONSTRATE PROFICIENCY IN IGNITION SYSTEM DIAGNOSIS AND REPAIR--The student will be able to:	
21.01		Diagnose ignition system related problems such as no-starting, hard starting, engine misfire, poor driveability, spark knock, power loss, poor mileage, and emissions concerns on vehicles with electronic ignition (distributorless) systems; determine necessary action. SC.H.346, LA.A.142, LA.A.143, LA.A.244, MA.B.442, MA.E.141	P-1 SE1: EP355-356, EP418-433, EP470-483
21.02		Inspect and test ignition primary circuit wiring and components; perform necessary action. SC.H.346, LA.A.142, LA.A.143, LA.A.244, MA.B.442, MA.E.141	P-2 SE1: EP418-420, EP423, EP425
21.03		Inspect and test distributor; perform necessary action. SC.H.346, LA.A.142, LA.A.143, LA.A.244	P-3 SE1: EP420, EP429-430
21.04		Inspect and test ignition system secondary circuit wiring and components; perform necessary action. SC.H.346, LA.A.142, LA.A.143, LA.A.244, MA.B.442, MA.E.141	P-2 SE1: EP425

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21.05		Inspect and test ignition coil(s); perform necessary action. SC.H.346, LA.A.142, LA.A.143, LA.A.244, MA.B.442, MA.E.141	P-1 SE1: EP418-420, EP423, EP425
21.06		Check and adjust ignition system timing and timing advance/retard (where applicable). SC.H.346, LA.A.142, LA.A.143, LA.A.244, MA.B.442, MA.E.141	P-3 SE1: EP428, EP429-433
21.07		Inspect and test ignition system pick-up sensor or triggering devices; perform necessary action. SC.H.346, LA.A.142, LA.A.143, LA.A.244, MA.B.442, MA.E.141	P-2 SE1: EP418-433

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