

**CORRELATION
FLORIDA DEPARTMENT OF EDUCATION
COURSE DESCRIPTION**

SUBJECT: Industrial Education
COURSE NAME: Automotive Service Technology 1
SUBMISSION TITLE: Automotive Excellence Volume 1 & 2 © 2007
PUBLISHER: Glencoe/McGraw-Hill
GRADE(S): 9-12

COURSE CODE NUMBER: 8709410

OUTCOME NUMBER	BENCHMARK NUMBER	INTENDED OUTCOME/BENCHMARK DESCRIPTION	PAGE(S) OR LOCATION(S) WHERE TAUGHT IN MAJOR TOOL	I/M*
1		DEMONSTRATE PROFICIENCY IN THE EQUIPMENT SKILLS AND SAFETY REGULATIONS RELATING TO THE AUTOMOTIVE INDUSTRY		
1.01		Apply shop safety rules, EPA and OSHA standards LA.A.246, LA.A.247, LA.A.248 .	SE1: HB88-105	I
1.02		Identify and use appropriate emergency first aid procedures LA.C.141, LA.C.142	SE1: HB97	M
1.03		Identify, use and maintain hand and power tools properly. LA.C.141, LA.A.142, LA.A.241, LA.A.248	SE1: HB50-87	I
1.04		Identify and practice using appropriate precision-measuring tools and torque methods.LA.A.244, LA.A.247, LA.C.241, LA.C.242, MA.B.241, MA.B.442	SE1: HB75-78, SS519	I
1.05		Identify and describe the proper procedure to apply and remove automotive fasteners, including thread inserts. LA.A.244, LA.C.141, MA.B.141	SE1: HB81-82	I
1.06		Identify and use Metric and English measurement skills. LA.A.142, MA.B.143	SE1: HB74-76	I
1.07		Use computer and operate keyboard. LA.A.244	SE1: HB39, EP468	M
1.08		Identify automobiles according to engine location, cylinders, type of drive system, purpose, etc. LA.A.244	SE1: HB33-35, EP354-369	I
1.09		Identify and describe typical automotive lubricants and lubricant properties. LA.A.244, LA.C.142, LA.C.342	SE1: BR176, SS558	I
1.10		Interpret the Federal'Workers Right To Know Law'. LA.A.244, LA.A.143	SE1: HB90	I
1.11		Identify and describe typical automotive seals and gaskets. LA.A.244, LA.C.141	SE1: HB84-85	I
1.12		Utilize flat rate manuals, service manuals, service bulletins, parts manuals and electronic service information. LA.A.248	SE1: HB42	M

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1.13		Demonstrate knowledge of the Automotive Service Excellence (ASE) Certification and other applicable certifications. LA.A.248	SE1: HB42	I
1.14		Describe and identify supplemental restraint systems (SRS). SC.C.246, SC.C.142, LA.A.244, LA.A.143	SE1: EL341-347	I
1.15		Disable supplemental restraint systems (SRS) in accordance with manufacturers' procedures. SC.C.246, SC.C.142, LA.A.241, LA.A.143, LA.A.142	SE1: EL345	I
2		DEMONSTRATE PROFICIENCY IN THE PROFICIENCY IN ROUTINE MAINTENANCE AND CONSUMER SERVICES AKA Light Line AKA General Service Technician		
2.01		Inspect, test headlamps, tail lamps and stop lamps. Aim headlights. SC.H.147, LA.A.244, LA.A.142, LA.A.143, MA.B.442	SE1: EL309-319	I
2.02		Perform oil and filter change including lubricating suspension and steering systems. SC.H.147, LA.A.244, LA.A.142, LA.A.143, MA.B.442	SE1: EP384-385	I
2.03		Service transmission; perform visual inspection; replace fluids and filters. SC.H.147, LA.A.244, LA.A.142, LA.A.143, MA.B.442	SE2: AT414-418	I
2.04		Inspect engine assembly for fuel, oil, coolant, and other leaks. SC.H.147, LA.A.244, LA.A.142, LA.A.143, MA.B.442	SE2: ER162-163	I
2.05		Inspect manual and power steering fluid levels and condition. SC.H.147, LA.A.244, LA.A.142, LA.A.143, MA.B.442	SE1: SS540	I

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2.06		Check rear axle drive assembly seals and vents; check lube level. SC.H.147, LA.A.244, LA.A.142, LA.A.143, MA.B.442	SE2: MD679	I
2.07		Remove, inspect, and service front and rear wheel bearings on non-drive axles. SC.H.147, LA.A.244, LA.A.142, LA.A.143	SE2: SS560-561	I
2.08		Inspect tires and diagnose tire wear patterns. Check and adjust air pressure. SC.H.147, LA.A.244, LA.A.142, LA.A.143, MA.B.442	SE1: SS513-515	I
2.09		Rotate tires according to manufacturer's recommendations, install wheels, torque lug nuts. SC.H.147, LA.A.244, LA.A.142, LA.A.143, MA.B.442	SE1: SS515, SS517-518	I
2.10		Balance wheel and tire assembly (static and dynamic). SC.H.147, SC.C.246, LA.A.244, LA.A.142, LA.A.143, MA.B.442	SE1: SS525-527	I
2.11		Dismount, inspect, repair, and remount tire on wheel. SC.H.147, LA.A.244, LA.A.142, LA.A.143	SE1: SS521-523	I
2.12		Check master cylinder for internal and external leaks and proper operation. SC.H.147, LA.A.244, LA.A.142, LA.A.143	SE1: BR127-129	I
2.13		Inspect brake lines and fittings for leaks, dents, kinks, rust, cracks or wear; tighten loose fittings and supports. SC.H.147, LA.A.244, LA.A.142, LA.A.143	SE1: BR129	M
2.14		Inspect flexible brake hoses for leaks, kinks, cracks, bulging or wear; tighten loose fittings and supports. SC.H.147, LA.A.244, LA.A.142, LA.A.143	SE1: BR129	M
2.15		Select, handle, store, and install brake fluids to proper level. SC.H.147, LA.A.244, LA.A.142, LA.A.143, MA.B.241, MA.B.442	SE1: BR114-117, BR125-126, BR148	I

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2.16		Fill master cylinder with recommended fluid and seat pads. SC.H.147, LA.A.244, LA.A.142, LA.A.143	SE1: BR125-128	I
2.17		Inspect, clean, fill, and replace battery. SC.H.147, LA.A.244, LA.A.142, LA.A.143	SE1: EL265-266	I
2.18		Inspect and clean battery cables, connectors, clamps, and hold-downs; repair or perform necessary action. SC.H.147, LA.A.244, LA.A.142, LA.A.143	SE1: EL264-265	I
2.19		Start a vehicle using jumper cables using a battery auxiliary power supply. SC.H.147, LA.A.244, LA.A.142, LA.A.143	SE1: EL268-269	I
2.20		Perform slow/fast battery charge. SC.H.147, LA.A.244, LA.A.142, LA.A.143, MA.B.442	SE1: EL265	I
2.21		Observe dash warning lamps during bulb check. SC.H.147, LA.A.244, LA.A.142, LA.A.143	SE1: EL322	I
2.22		Locate and interpret vehicle and major component identification numbers (VIN, vehicle certification labels and calibration decals). SC.H.147, LA.A.244, LA.A.142, LAA143	SE1: HB44, EP410-411, SS528	I
2.23		Practice recommended precautions when handling static sensitive devices. SC.H.147, LA.A.244, LA.A.142, LA.A.143	SE1: EL249	I
2.24		Inspect and test positive crankcase ventilation (PCV) filter/breather cap, valve, tubes, orifices, and hoses; service or perform necessary action. SC.H.147, LA.A.244, LA.A.142, LA.A.143	SE1: EP488-489	I
2.25		Inspect, replace, and adjust drive belts and pulleys. LA.A.142, LA.A.143, LA.A.244	SE1: SS539	I

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2.26		35.05 [08.29, 15.18] Inspect and replace engine cooling and heater system hoses. LA.A.142, LA.A.143, LA.A.244	SE2: ER132-133	I
2.27		Inspect, test, and replace thermostat and housing. LA.A.142, LA.A.143, LA.A.244, MA.B.442, MA.E.141	SE1: EP383	I
2.28		Perform cooling system pressure tests; inspect and test radiator, pressure cap, coolant recovery tank, and hoses; service or perform necessary action. LA.A.142, LA.A.143, LA.A.244	SE1: EP380-381	I
2.29		Inspect and test mechanical/electrical fans, fan clutch, fan shroud/ducting, air dams, and fan control devices; service or perform necessary action. LA.A.142, LA.A.143, LA.A.244, MA.B.442, MA.E.141	SE1: HB-384	I
2.30		Determine coolant condition; drain, flush, recover and refill cooling system with recommended coolant and bleed air as required. LA.A.142, LA.A.143, LA.A.244	SE1: EP380-384	I
2.31		Inspect, test, remove, and replace water pump. LA.A.142, LA.A.143, LA.A.244	SE2: ER137	I
2.32		Check parking brake operation; adjust as needed. LA.A.142, LA.A.143, LA.A.244, MA.B.442, MA.E.141, MA.B.242	SE1: BR199-202	I
2.33		13.05 [08.37, 14.01] Use wiring diagrams to diagnose electrical circuit problems. SC.H.147, LA.A.142, LA.A.143, LA.A.244	SE1: EL239-240	I
2.34		Check electrical circuits with a test light; determine necessary action. SC.H.147, SC.C.242, LA.A.142, LA.A.143, LA.A.244	SE1: EL243-245	I

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2.35		Check voltage and voltage drop in electrical circuits using a digital multimeter (DMM). SC.H.147, SC.C.242, SC.H.346, LA.A.142, LA.A.143, LA.A.244, MA.B.442, MA.B.242.	SE1: EL282-283, EL302	I
2.36		Check current flow in electrical/electronic circuits and components using an ammeter. SC.H.147, SC.C.242, SC.H.346, LA.A.142, LA.A.143, LA.A.244, MA.B.442, MA.B.242.	SE1: EL230-231, EL240-245, EL301	I
2.37		Check electrical circuits using a fused jumper wire. SC.H.147, SC.C.242, SC.H.346, LA.A.142, LA.A.143, LA.A.244	SE1: EL243	I
2.38		Measure and diagnose the cause(s) of abnormal key-off battery drain. SC.H.147, SC.H.346, LA.A.142, LA.A.143, LA.A.244, MA.B.442	SE1: EL253, EL261-263	I
2.39		Inspect and test fusible links, circuit breakers, and fuses; perform necessary action. SC.H.147, SC.C.242, LA.A.142, LA.A.143, LA.A.244, MA.B.442	SE1: EL237-238, EL313	I
2.40		Perform battery capacity (load, high-rate discharge) test; determine necessary service. SC.H.147, SC.C.242, SC.H.346, LA.A.142, LA.A.143, LA.A.244, MA.B.442	SE1: EL260	I
2.41		Maintain or restore electronic memory functions. SC.H.147, LA.A.142, LA.A.143, LA.A.244	SE1: EL265-266	I
2.42		Perform starter current draw and circuit voltage drop test; determine necessary action. SC.H.147, SC.H.346, LA.A.142, LA.A.143, LA.A.244, MA.B.442, MA.B.242	SE1: EL280-282	I
2.43		Remove and replace/reinstall starter. SC.H.147, LA.A.142, LA.A.143, LA.A.244	SE1: EL283-284	I

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2.44		Perform charging system test. SC.H.147, LA.A.142, LA.A.143, LA.A.244	SE1: EL301-302	I
2.45		Remove, inspect, and replace/reinstall alternator. SC.H.147, LA.A.142, LA.A.143, LA.A.244	SE1: EL303-304	I
2.46		Demonstrate retrieving stored diagnostic trouble codes using a scan tool. SC.H.147, SC.H.346, LA.A.142, LA.A.143, LA.A.244, MA.B.442	SE1: EL242, EP483	I
2.47		Obtain and interpret digital multimeter (DMM) readings. SC.H.147, SC.H.346, LA.A.142, LA.A.143, LA.A.244, MA.B.442	SE1: EL240-245	I
2.48		Inspect fuel tank and fuel cap; inspect and replace fuel lines, fittings, and hoses. SC.H.147, LA.A.142, LA.A.143, LA.A.244	SE1: EP495-496	I
2.49		Replace a fuel filter. SC.H.147, LA.A.142, LA.A.143, LA.A.244	SE1: EP459	I
2.50		Inspect exhaust manifold, exhaust pipes, mufflers, resonators, tail pipes, and heat shields; repair or perform necessary action. SC.H.147, LA.A.142, LA.A.143, LA.A.244	SE1: EP366-367, EP397-398	I
2.51		Adjust valves on engines with mechanical lifters. SC.H.147, LA.A.142, LA.A.143, LA.A.244, MA.B.442	SE1: EP359, EP362	I
2.52		Remove and replace valve cover gaskets. SC.H.147, LA.A.142, LA.A.143, LA.A.244	SE1: HB84-85	M
2.53		Inspect passenger restraint system, repair if needed. SC.H.147, LA.A.142, LA.A.143, LA.A.244	SE1: EL341-347	I