

AER0199 - Automotive Engine Repair

2013 NATEF JOB TASKS COMPLETION REQUIREMENT: **P1 - 95% P2 - 80% P3 - 50%**

Student Name: _____

DETAILED COURSE CONTENT

ENGINE REPAIR TECHNICIAN

DEMONSTRATE PROFICIENCY IN GENERAL: ENGINE DIAGNOSIS;

REMOVAL AND REINSTALLATION (R & R) – The student will be able to:

		P1	P2	P3	Level	Date	Textbook Ch CDX Task
I-A-1	Complete work order to include customer information, vehicle identifying information, customer concern, related service history, cause, and correction.						10: C885
I-A-2	Research applicable vehicle and service information, such as internal engine operation, vehicle service history, service precautions, and technical service bulletins.						10: C002
I-A-3	Verify operation of the instrument panel engine warning indicators.						8: C898
I-A-4	Inspect engine assembly for fuel, oil, coolant, and other leaks; determine necessary action.						10: C004
I-A-5	Install engine covers using gaskets, seals, and sealers as required.						15: C541
I-A-6	Remove and replace timing belt; verify correct camshaft timing.						44: C899
I-A-7	Perform common fastener and thread repair, to include: remove broken bolt, restore internal and external threads, and repair internal threads with thread insert.						6: C886
I-A-8	Inspect, remove and replace engine mounts.						11: C596
I-A-9	Identify hybrid vehicle internal combustion engine service precautions.						52: C900
I-A-10	Remove and reinstall engine in an OBDII or newer vehicle; reconnect all attaching components and restore the vehicle to running condition.						11: C671

DEMONSTRATE PROFICIENCY IN CYLINDER HEAD AND

VALVE TRAIN DIAGNOSIS AND REPAIR – The student will be able to:

I-B-1	Remove cylinder head: inspect gasket condition; install cylinder head and gasket; tighten according to manufacturer's specifications and procedures.						12: C673
I-B-2	Clean and visually inspect a cylinder head for cracks; check gasket surface areas for warpage and surface finish; check passage condition.						12: C674

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		P1	P2	P3	Level	Date	Textbook Ch CDX Task
I-B-3	Inspect pushrods, rocker arms, rocker arm pivots and shafts for wear, bending, cracks, looseness, and blocked oil passages (orifices); determine necessary action.						12: C021
I-B-4	Adjust valves (mechanical or hydraulic lifters).						15: C723
I-B-5	Inspect and replace camshaft and drive belt/chain; includes checking drive gear wear and backlash, end play, sprocket and chain wear, overhead cam drive sprocket(s), drive belt(s), belt tension, tensioners, camshaft reluctor ring/tone-wheel, and valve timing components; verify correct camshaft timing.						15: C676
I-B-6	Establish camshaft position sensor indexing.						12: C677

DEMONSTRATE PROFICIENCY IN ENGINE BLOCK ASSEMBLY DIAGNOSIS AND REPAIR – The student will be able to:

I-C-1	Remove, inspect, or replace crankshaft vibration damper (harmonic balancer).						13: C679
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DEMONSTRATE PROFICIENCY IN LUBRICATION AND COOLING SYSTEMS DIAGNOSIS AND REPAIR – The student will be able to:

I-D-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 and galley plugs; determine necessary action.						46: C578
I-D-2	Identify causes of engine overheating.						46: C598
I-D-3	Inspect, replace, and adjust drive belts, tensioners, and pulleys; check pulley and belt alignment.						46: C734
I-D-4	Inspect and test coolant; drain and recover coolant; flush and refill cooling system with recommended coolant; bleed air as required.						46: C050
I-D-5	Inspect, remove, and replace water pump.						46: C680
I-D-6	Remove and replace radiator.						46: C052
I-D-7	Remove, inspect, and replace thermostat and gasket/seal.						46: C735
I-D-8	Inspect and test fan(s) (electrical or mechanical), fan clutch, fan shroud, and air dams.						46: C053
I-D-9	Perform oil pressure test; determine necessary action.						45: C732

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		P1	P2	P3	Level	Date	Textbook Ch CDX Task
I-D-10	Perform oil and filter change.						45: C737
I-D-11	Inspect auxiliary coolers; determine necessary action.						46: C871
I-D-12	Inspect, test, and replace oil temperature and pressure switches and sensors.						45: C736

	P1	P2	P3
Tasks Completed	0	0	0
Total Tasks	20	6	3
% of Total Tasks	0	0	0