

**NATEF AUTOMOTIVE TASK LIST**  
**AUT 105 - BEGINNING ENGINE REPAIR**

TERM: \_\_\_\_\_  
 INSTRUCTOR: \_\_\_\_\_

SID: \_\_\_\_\_  
 NAME: \_\_\_\_\_

**For every task in Engine Repair, the following safety requirement must be strictly enforced:  
 Comply with personal and environmental safety practices associated with clothing; eye protection; hand tools; power equipment; proper ventilation; and the handling, storage and disposal of chemicals/materials in accordance with local, state and federal safety and environmental regulations.**

<u>Task Code</u>	<u>Task</u>	<u>Priority</u>
<b><u>A. General Engine Diagnosis: Removal and Reinstallation (R&amp;R)</u></b>		
1.A.1	Complete work order to include customer information, vehicle identifying information, customer concern, related service history, cause, and correction.	P-1
1.A.2	Research applicable vehicle and service information, such as internal engine operation, vehicle service history, service precautions, and technical service bulletins.	P-1
1.A.3	Verify operation of the instrument panel engine warning indicators.	P-1
1.A.4	Inspect engine assembly for fuel, oil, coolant, and other leaks; determine necessary action.	P-1
1.A.5	Install engine covers using gaskets, seals, and sealers as required.	P-1
1.A.6	Remove and replace timing belt; verify correct camshaft timing.	P-1
1.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.	P-1
1.A.8	Inspect, remove and replace engine mounts.	P-2
1.A.9	Identify hybrid vehicle internal combustion engine service precautions.	P-3
1.A.10	Remove and reinstall engine in an OBDII or newer vehicle, reconnect all attaching components and restore the vehicle to running condition.	P-3
<b><u>B. Cylinder Head and Valve Train Diagnosis and Repair</u></b>		
1.B.1	Remove cylinder head; inspect gasket condition: install cylinder head and gasket: tighten according to manufacturer's specifications and procedures	P-1
1.B.2	Clean and visually inspect a cylinder head for cracks: check gasket surface areas for warpage and surface finish: check passage condition.	P-1
1.B.3	Inspect pushrods, rocker arms, rocker arm pivots and shafts for wear, bending, cracks, looseness, and blocked oil passages (orifices); determine necessary action.	P-2
1.B.4	Adjust valves (mechanical or hydraulic lifters).	P-1
1.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.	P-1

1.B.6	Establish camshaft position sensor indexing.	P-1
1.B.7	Inspect valve springs for squareness and free height comparison; determine necessary action.	P-3
1.B.8	Replace valve stem seals on an assembled engine; inspect valve spring retainers, locks/keepers, and valve lock/keeper grooves; determine necessary action.	P-2
1.B.9	Inspect valve guides for wear; check valve stem-to-guide clearance; determine necessary action.	P-3
1.B.10	Inspect valves and valve seats; determine necessary action.	P-3
1.B.11	Check valve spring assembled height and valve stem height; determine necessary action.	P-3
1.B.12	Inspect valve lifters; determine necessary action.	P-2
1.B.13	Inspect and/or measure camshaft for run out, journal wear and lobe wear.	P-2
1.B.14	Inspect camshaft bearing surface for wear, damage, out-of-round, and alignment; determine necessary action.	P-3