

ASE Education Foundation

2025 Correlation Chart

Engine Performance (A8)

MLR- Maintenance & Light Repair

AST- Auto Service Technology (Includes MLR)

MAST- Master Auto Service Technology (Includes MLR and AST)

	Task	Priority	MLR	AST	MAST	Text Page #	Task Page #
A. General							
1.	Research vehicle service information such as fluid type, vehicle service history, service precautions, technical service bulletins, and recalls including xEV and vehicles equipped with advanced driver assistance systems (ADAS).	P-1	✓	✓	✓	117-119 692	
2.	Retrieve and record DTCs, OBD monitor status, and freeze frame data; clear codes and data when directed	P-1	✓	✓	✓	972-974 988-994	
3.	Verify proper engine cooling system operation; determine needed action.	P-1	✓*	✓	✓	187-188 248-249 986	
4.	Verify correct camshaft timing including engines equipped with variable valve timing (VVT) systems; determine needed action.	P-1	✓**	✓	✓	256 396-397	
5.	Identify engine performance concerns; determine needed action.	P-1		✓	✓	985-987	
6.	Diagnose abnormal engine noises or vibration concerns; determine needed action.	P-2		✓ (P-3)	✓	239-240	

*Demonstrate understanding of proper engine cooling system operation.

**Demonstrate understanding of camshaft timing including engines equipped with variable valve timing (VVT) systems.

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7.	Diagnose the cause of excessive oil consumption, coolant consumption, unusual exhaust color, odor, and sound; determine needed action.	P-2		✓	✓	214 237-238 737	
8.	Perform engine manifold pressure tests (vacuum/boost); determine needed action.	P-1		✓	✓	246-248	
9.	Perform cylinder power balance test; determine needed action.	P-1		✓ (P-2)	✓	245-246	
10.	Perform cylinder cranking and running compression tests; determine needed action.	P-1		✓	✓	241-245	
11.	Perform cylinder leakage test; determine needed action.	P-1		✓	✓	245	
B. Computerized Controls							
1.	Identify computerized control system components and configurations.	P-1	✓	✓	✓	837-842	
2.	Access and use service information to perform step-by-step (troubleshooting) diagnosis.	P-1		✓	✓	988-989	
3.	Perform active tests of actuators using a scan tool; determine needed action.	P-1		✓	✓	990-991	
4.	Demonstrate knowledge of OBD readiness flags, monitors, and drive cycle for repair verification	P-1		✓	✓	992-994	
5.	Inspect and test computerized engine control system sensors, powertrain/engine control module (PCM/ECM), actuators, and circuits using a graphing multimeter (GMM), digital storage oscilloscope (DSO), and/or scan tool; determine needed action.	P-1		✓ (P-2)	✓	457-463	

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6.	Describe the process for reprogramming or recalibrating the powertrain/engine control module (PCM/ECM).	P-1		✓	✓	980-983	
7.	Diagnose the causes of emissions or driveability concerns with stored or active diagnostic trouble codes (DTC); obtain, graph, and interpret scan tool data.	P-1			✓	991-993	
8.	Diagnose emissions or driveability concerns without stored or active diagnostic trouble codes; determine needed action.	P-1			✓	991	
9.	Diagnose driveability and emissions problems resulting from malfunctions of interrelated systems (cruise control, security alarms, suspension controls, traction controls, HVAC, automatic transmissions, non-OEM installed accessories, or similar systems); determine needed action.	P-2			✓	985-99	
C. Ignition System							
1.	Identify ignition system components and configurations.	P-1	✓	✓	✓	814-820	
2.	Remove and replace spark plugs; inspect secondary ignition components for wear and damage; determine needed action.	P-1	✓ (P-2)	✓	✓	830-832	
3.	Diagnose no-starting, hard starting, engine misfire, poor driveability, spark knock, power loss, poor mileage, and emissions concerns related to ignition system problems; determine needed action.	P-1		✓ (P-2)	✓	826-830	

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4.	Inspect and test crankshaft and camshaft position sensor(s); determine needed action.	P-1		✓ (P-2)	✓	826	
5.	Inspect, test, and/or replace ignition control module and/or powertrain/engine control module; reprogram/initialize as needed.	P-2		✓	✓	980-983	
D. Fuel, Air Induction, and Exhaust Systems							
1.	Identify fuel, air induction, and exhaust system components and configurations.	P-1	✓	✓	✓	216-220 221-224 880-889 894-899	
2.	Replace fuel filter(s) where applicable.	P-3	✓	✓	✓	888-889	
3.	Inspect, service, or replace air filters, filter housings, and intake duct work.	P-1	✓	✓	✓	216-217	
4.	Inspect integrity of the exhaust manifold, exhaust pipes, muffler(s), catalytic converter(s), resonator(s), tail pipe(s), and heat shields; determine needed action.	P-1	✓	✓	✓	221-224 1735- 1736	
5.	Inspect condition of exhaust system hangers, brackets, clamps, and heat shields; determine needed action.	P-1	✓	✓	✓	223 1735	
6.	Check and refill diesel exhaust fluid (DEF).	P-3	✓	✓	✓	139 165	
7.	Check fuel for quality, composition, and contamination; determine needed action.	P-1		✓ (P-2)	✓	797-798 801-802	
8.	Inspect and test fuel pump(s) and pump control system for pressure, regulation, and volume; determine needed action.	P-1		✓	✓	890	
9.	Inspect throttle body, air induction system, intake manifold and gaskets for vacuum leaks and/or unmetered air.	P-1		✓	✓	862 924	

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10.	Inspect, test, and/or replace fuel injectors on low-and high-pressure systems.	P-1		✓ (P-2)	✓	919-922	
11.	Verify proper idle speed; determine needed action.	P-1		✓	✓	900 912-914	
12.	Perform exhaust system back-pressure test; determine needed action	P-2		✓	✓	964-965	
13.	Demonstrate knowledge of the operation of turbocharger/supercharger systems.	P-2		✓	✓	228-232	
14.	Diagnose hot or cold no-starting, hard starting, poor driveability, incorrect idle speed, poor idle, flooding, hesitation, surging, engine misfire, power loss, stalling, poor mileage, dieseling, and emissions problems; determine needed action.	P-2			✓	985-988	
E. Emissions Control Systems							
1.	Identify emission control system components and configurations.	P-1	✓	✓	✓	941-953 953-959 961-963	
2.	Inspect, test, service, and/or replace positive crankcase ventilation (PCV) filter/breather, valve, tubes, orifices, and hoses; determine needed action.	P-2	✓	✓	✓	956-957	
3.	Diagnose oil leaks, emissions, and driveability concerns caused by the positive crankcase ventilation (PCV) system; determine needed action.	P-2		✓	✓	956	

	Task	Priority	MLR	AST	MAST	Text Page #	Task Page #
4.	Diagnose emissions and driveability concerns caused by the exhaust gas recirculation (EGR) system; inspect, test, service and/or replace electrical/electronic sensors, controls, wiring, tubing, exhaust passages, vacuum/pressure controls, filters, and hoses of exhaust gas recirculation (EGR) systems; determine needed action.	P-1		✓ (P-2)	✓	951-953	
5.	Inspect and test electrical/electronically operated components and circuits of secondary air injection systems; determine needed action.	P-3		✓	✓	958-959	
6.	Diagnose emission and driveability concerns caused by catalytic converter system; determine needed action.	P-1		✓	✓	963-967	
7.	Diagnose emissions and driveability concerns caused by the evaporative emissions control (EVAP) system; determine needed action.	P-1		✓	✓	945-948	