Competency Task List – Secondary Component
Automobile/Automotive Mechanics Technology/Technician CIP 47.0604
High School Graduation Years 2025, 2026, 2027

100 Orientation

Item	Task	(X) Indicates Proficiency [1]	Secondary Course Crosswalk
101	Explain and follow all lab rules.		
102	Participate in shop management.		
103	Participate in parts ordering.		
104	Demonstrate auto shop safety and hygiene.		
	RESERVED (105)		
106	Provide customer service and communicate technical and service information to clients.		
107	Identify a vehicle by sight, vehicle identification number (VIN) and ID tag.		
108	Investigate career paths within the automotive technology profession.		
109	Complete a work order to include customer information, vehicle identifying information, customer concern, related service history, cause, and correction.		
110	Research applicable vehicle and service information, vehicle service history, service precautions, and technical service bulletins.		
111	Locate and interpret vehicle and major component identification numbers.		

200 Safety

Item	Task	(X) Indicates Proficiency [1]	Secondary Course Crosswalk
201	Identify and follow all safety rules.		
202	Demonstrate the ability to secure vehicles on jack stands and hydraulic lifts.		
203	Demonstrate the ability to set-up/shut-down oxygen acetylene welding equipment.		

204	Identify chemical safety, Right-To-Know laws and Safety Data Sheets (SDS).		
205	Identify and use hand tools.		
206	Identify and use power tools.		
207	Wear personal protective equipment (PPE).		
208	Follow guidelines for use of fire protection equipment.		
	RESERVED (209)		
210	Follow EPA and OSHA regulations.		

300 Tools/Fasteners

Item	Task	(X) Indicates Proficiency [1]	Secondary Course Crosswalk
301	Identify and use fasteners and bolts.		
302	Drill and use re-threading tools.		
303	Read and interpret precision automotive measuring tools.		
304	Identify and use automotive specialty tools.		
305	Perform common fastener and thread repairs, including remove broken bolt, restore internal and external threads, and repair internal threads with a threaded insert.		

400 Certifications

Item	Task	(X) Indicates Proficiency [1]	Secondary Course Crosswalk
401	Prepare to obtain PA Safety Inspection Certification.		
402	Prepare to obtain EPA 609 Refrigerant Recovery and Recycling Certification.		
403	Prepare to obtain Emission Inspection Certification.		

500 Suspension and Steering

Item	Task	(X) Indicates Proficiency [1]	Secondary Course Crosswalk
	RESERVED (501)		
502	Identify and interpret suspension and steering system concerns and determine necessary actions.		
	RESERVED (503-506)		
507	Inspect rack and pinion steering gear and mounting bushings and brackets.		
508	Inspect rack and pinion steering gear inner tie rod ends (sockets) and bellows boots.		
509	Determine proper power steering fluid type and inspect fluid level and condition.		
510	Flush, fill, and bleed power steering system.		
511	Diagnose power steering fluid leakage and determine necessary actions.		
	RESERVED (512)		
513	Remove and reinstall power steering pump.		
514	Remove and reinstall press fit power steering pump pulley and check pulley and belt alignment.		
515	Inspect and replace power steering hoses and fittings.		
516	Inspect and replace pitman arm, relay (centerlink/intermediate) rod, idler arm and mountings, and steering linkage damper.		
517	Inspect, replace, and adjust tie rod ends (sockets), tie rod sleeves, and clamps.		
	RESERVED (518)		
519	Inspect, and replace upper and lower control arms, bushings, shafts, and rebound bumpers.		
520	Inspect and replace strut rods and bushings.		
521	Inspect and replace upper and lower ball joints.		
522	Inspect and replace steering knuckle assemblies.		
523	Inspect and replace short and long arm suspension system coil springs and spring insulators.		

524	Inspect, replace, and adjust suspension system torsion bars and inspect mounts.		
525	Inspect and replace stabilizer bar bushings, brackets, and links.		
526	Inspect and replace strut cartridge or assembly, strut coil spring, insulators (silencers), and upper strut bearing mount.		
527	Inspect, remove, and replace shock absorbers.		
	RESERVED (528)		
529	Lubricate suspension and steering systems.		
530	Perform pre-alignment inspection and measure vehicle ride height and; perform necessary actions.		
531	Perform four-wheel alignment.		
	RESERVED (532-534)		
535	Check front and rear cradle (subframe) alignment.		
536	Inspect tire condition, identify tire wear patterns, and check and adjust air pressure.		
537	Diagnose wheel/tire vibration, shimmy, and noise.		
538	Rotate tires according to manufacturer's recommendations.		
539	Measure wheel, tire, axle flange, and hub runout.		
	RESERVED (540-541)		
542	Dismount, inspect, and remount tire and balance wheel equipped with tire pressure monitoring system sensor.		
	RESERVED (543)		
544	Inspect tire and wheel assembly for air loss.		
545	Repair tire using internal patch.		
546	Identify indirect and direct tire pressure monitoring systems (TPMS), perform system calibration, and verify operation of instrument panel lamps.		
547	Identify and perform steps required to remove and replace sensors in a tire pressure monitoring system (TPMS) including relearn procedure.		
548	Identify the need for reset procedures post wheel alignment.		
549	Identify and diagnose electronic power steering systems.		

600 Brakes

Item	Task	(X) Indicates Proficiency [1]	Secondary Course Crosswalk
601	RESERVED		
602	Identify and interpret brake system concerns.		
	RESERVED (603-604)		
605	Measure brake pedal height, travel, and free play as applicable.		
606	Check master cylinder for internal/external leaks and proper operation.		
607	Remove, bench bleed, and reinstall master cylinder.		
608	Inspect brake lines, flexible hoses, and fittings for leaks, dents, kinks, rust, cracks, bulging or wear; tighten loose fittings and supports; and determine necessary actions.		
609	Replace brake lines, hoses, fittings, and supports.		
610	Fabricate brake lines using proper material and flaring procedures (double flare and ISO types).		
611	Select, handle, store, and test brake fluid for contamination and fill to proper level.		
612	Inspect, test, and replace components of brake warning light system.		
613	Bleed and flush brake system.		
614	Diagnose poor stopping, noise, vibration, pulling, grabbing, dragging, or pedal pulsation concerns.		
615	Remove, clean, inspect, and measure brake drums.		
616	Refinish brake drum and measure final drum diameter.		
617	Remove, clean, and inspect brake shoes, springs, pins, clips, levers, adjusters/self-adjusters, other related brake hardware, and backing support plates then lubricate and reassemble.		
618	Inspect and install wheel cylinders.		
619	Pre-adjust brake shoes and parking brake, install brake drums or drum/hub assemblies, and wheel bearings.		
620	Install wheel, torque lug nuts, and make final checks and adjustments.		
	RESERVED (621)		
622	Remove caliper assembly, inspect for leaks, and damage to caliper housing.		

623	Clean and inspect caliper mounting and slides/pins for operation, wear, and damage.		
624	Reassemble, lubricate, and reinstall caliper, pads, and related hardware; seat pads; and inspect for leaks.		
625	Clean, inspect, and measure rotor thickness, lateral runout, and thickness variation.		
626	Remove and reinstall rotor.		
627	Refinish rotor and measure final rotor thickness.		
	RESERVED (628-629)		
630	Check brake pad wear indicator system operation.		
	RESERVED (631)		
632	Check vacuum supply to vacuum-type power booster and check power assist operation.		
633	Remove, clean, inspect, repack, and install wheel bearings, RACES and replace seals; install hub; and adjust bearings.		
634	Check parking brake cables and components including integral parking brake system for wear, binding, and corrosion then clean, lubricate, adjust, or replace as needed.		
635	Check parking brake and indicator light system operation.		
636	Check operation of brake stop light system.		
	RESERVED (637)		
638	Inspect and replace wheel studs.		
639	Remove and reinstall sealed wheel bearing assembly.		
640	Identify and inspect electronic brake control system components.		
641	Diagnose electronic brake control system, electronic control(s), and components by retrieving diagnostic trouble codes and using recommended test equipment.		
	RESERVED (642)		
643	Bleed the electronic brake control system hydraulic circuits.		
644	Identify traction control/vehicle stability control system components.		
645	Describe the operation of a regenerative braking system.		

700 Electrical/Electronic Systems

Item	Task	(X) Indicates Proficiency [1]	Secondary Course Crosswalk
	RESERVED (701)		
702	Identify and interpret electrical/electronic system concerns.		
	RESERVED (703-704)		
705	Use wiring diagrams during diagnosis of electrical circuit problems.		
706	Check electrical circuits with a test light.		
707	Check electrical circuits using fused jumper wires.		
708	Locate shorts, grounds, opens, and resistance problems in electrical/electronic circuits.		
709	Measure and diagnose the cause(s) of excessive parasitic draw.		
710	Inspect and test fusible links, circuit breakers, and fuses.		
711	Inspect and test switches, connectors, relays, solenoid solid state devices, and wires of electrical/electronic circuits.		
712	Remove and replace terminal end from connector, replace connectors, and terminal ends.		
713	Repair wiring harness and solder repair.		
	RESERVED (714)		
715	Identify location of electric hybrid vehicle high voltage circuit disconnect (service plug) location and safety procedures.		
716	Perform battery state-of-charge test.		
717	Perform battery capacity test and confirm proper battery capacity for vehicle application.		
718	Maintain and restore electronic memory functions.		
719	Inspect, clean, fill, and replace battery, battery cables, connectors, clamps, and hold-downs.		
720	Perform battery charge.		
721	Start a vehicle using jumper cables or an auxiliary power supply.		
722	Identify electronic modules, security systems, radios, and other accessories that require reinitialization or code entry following battery disconnect.		
723	Perform starter current draw tests.		

724	Perform starter circuit voltage drop tests.		
725	Inspect and test starter relays and solenoids.		
726	Remove and install starter in a vehicle.		
727	Inspect and test switches, connectors, and wires of starter control circuits and perform necessary action.		
728	Differentiate between electrical and engine mechanical problems that cause a slow-crank or no-crank condition.		
729	Perform charging system output test and determine necessary action.		
730	Diagnose charging system for the cause of undercharge, no-charge, and overcharge conditions.		
	RESERVED (731)		
732	Remove, inspect, and install generator (alternator).		
	RESERVED (733-734)		
735	Inspect, replace, and aim headlights and bulbs.		
	RESERVED (736-738)		
739	Diagnose the cause of incorrect operation of warning devices and other driver information systems.		
740	Diagnose incorrect horn operation.		
741	Diagnose incorrect wiper operation and diagnose wiper speed control and park problems.		
742	Diagnose incorrect washer operation.		
743	Diagnose incorrect operation of motor-driven accessory circuits.		
	RESERVED (745)		
746	Remove and reinstall door panel.		
747	Use a digital multimeter (DMM).		
748	Demonstrate knowledge of an automatic idle start/stop system.		

800 Engine Performance

Item	Task	(X) Indicates Proficiency [1]	Secondary Course Crosswalk

	RESERVED (801)		
802	Identify and interpret engine performance concern.		
	RESERVED (803-805)		
806	Diagnose abnormal engine noise or vibration concerns.		
807	Diagnose abnormal exhaust color, odor, and sound.		
808	Perform engine absolute (vacuum/boost) manifold pressure tests.		
809	Perform cylinder power balance test.		
810	Perform cylinder cranking and running compression tests.		
811	Perform cylinder leakage test.		
812	Diagnose engine mechanical, electrical, electronic, fuel, and ignition concerns.		
813	Verify engine operating temperature.		
	RESERVED (814-815)		
816	Retrieve and record diagnostic trouble codes, OBD monitor status, and freeze frame data and clear codes when applicable.		
817	Diagnose the causes of emissions or drivability concerns with stored or active diagnostic trouble codes and obtain, graph, and interpret scan tool data.		
818	Access and use service information to perform step-by-step diagnosis.		
819	Perform active tests of actuators using a scan tool.		
820	Describe the importance of running all OBDII monitors for repair verification.		
	RESERVED (821)		
822	Inspect and test ignition primary and secondary circuit wiring and solid-state components and test ignition coil(s).		
823	Inspect and test crankshaft and camshaft position sensor(s).		
824	Inspect, test, and replace ignition control module and powertrain/engine control module and reprogram as necessary.		
825	Diagnose hot or cold no-starting, hard starting, poor drivability, incorrect idle speed, poor idle, flooding, hesitation, surging, engine misfire, power loss, stalling, poor mileage, dieseling, and emissions problems.		
826	Inspect and test fuel pumps and pump control systems for pressure, regulation, and volume.		
827	Replace fuel filters.		

828	Inspect throttle body, air induction system, intake manifold, and gaskets for vacuum leaks and unmetered air.		
829	Inspect and test fuel injectors.		
830	Verify idle control operation.		
831	Inspect the integrity of the exhaust manifold, exhaust pipes, muffler(s), catalytic converter(s), resonator(s), tail pipe(s), and heat shield(s).		
	RESERVED (832)		
833	Inspect, test, and service positive crankcase ventilation (PCV) filter/breather cap, valve, tubes, orifices, and hoses.		
	RESERVED (834)		
835	Inspect, test, service, and replace components of the EGR system, including electrical/electronic sensors, controls, and wiring, EGR tubing, exhaust passages, vacuum/pressure controls, filters, and hoses.		
	RESERVED (836)		
837	Inspect and test mechanical components of secondary air injection systems.		
838	Inspect and test electrical/electronically operated components and circuits of air injection systems.		
839	Inspect and test catalytic converter efficiency.		
	RESERVED (840)		
841	Inspect and test components and hoses of the evaporative emissions control system.		
842	Interpret diagnostic trouble codes (DTCs) and scan tool data related to the emissions control systems.		
	RESERVED (843-846)		
847	Remove, inspect and Install spark plugs. Measure spark plug gap		

900 Engine Repair

Item	Task	(X) Indicates Proficiency [1]	Secondary Course Crosswalk
	RESERVED (901)		
902	Verify operation of the instrument panel engine warning indicators.		
903	Install engine covers using gaskets, seals, and sealers.		
	RESERVED (904)		
905	Identify valve adjustment procedures.		
906	Inspect, replace, and adjust drive belts, tensioners, and pulleys and check pulley and belt alignment.		
907	Inspect and test coolant, drain and recover coolant, and flush and refill cooling system with recommended coolant.		
908	Perform cooling system pressure tests; check coolant condition; inspect and test radiator, pressure cap, coolant recovery tank, and hoses.		
909	Identify components and inspect engine assembly for fuel, oil, coolant, and other leaks.		
910	Remove and replace timing belt or chain and verify correct camshaft timing.		
911	Remove and replace thermostat and gasket/seal.		
912	Inspect and test mechanical/electrical fans, fan clutch, fan shroud/ducting, air dams, and fan control devices.		
913	Perform engine oil and filter change.		

1000 Automatic Transmission and Transaxle

Item	Task	(X) Indicates Proficiency [1]	Secondary Course Crosswalk
	RESERVED (1001)		
1002	Check fluid level and fluid condition in a transmission or a transaxle equipped with a dipstick.		
1003	Check fluid level and fluid condition in a transmission or a transaxle not equipped with a dipstick.		

1004	Drain, replace, and exchange fluid and filter(s).		
1005	Identify drivetrain components and configuration.		
1006	Inspect, adjust, and replace external manual valve shift linkage, transmission range sensor/switch, and park/neutral switch.		
1007	Inspect for leakage at external seals, gaskets, and bushings.		
1008	Inspect, replace, and align powertrain mounts.		

1100 Manual Drive Train and Axles

Item	Task	(X) Indicates Proficiency [1]	Secondary Course Crosswalk
	RESERVED (1101)		
1102	Drain and refill manual transmission/transaxle and final drive unit.		
1103	Check and adjust clutch master cylinder fluid level.		
1104	Check for system leaks.		
1105	Check and adjust differential housing fluid level.		
1106	Drain and refill differential housing.		
1107	Identify, inspect, and replace manual drivetrain and axle components and configuration.		

1200 Heating and Air Conditioning

Item	Task	(X) Indicates Proficiency [1]	Secondary Course Crosswalk
	RESERVED (1201-1202)		
1203	Inspect air conditioning (A/C) condenser for airflow restrictions.		
1204	Inspect engine cooling and heating systems hoses.		
1205	Inspect A/C heating ducts, doors, hoses, cabin filters, and outlets.		
1206	Check for A/C leaks.		
1207	Identify refrigerant type and recovery procedure.		

[1] Student Demonstrated Entry-Level Industry Proficiency as Indicated by (X)

Secondary CTE Instructor Signature _____ Date _____

Student Signature _____ Date _____