

NAME \_\_\_\_\_

SEMESTER \_\_\_\_\_ YEAR \_\_\_\_\_

**CERRITOS COLLEGE  
AUTOMOTIVE TECHNOLOGY  
SUSPENSION AND STEERING  
TASK LIST**

	<b>IV. SUSPENSION AND STEERING A. GENERAL</b>	<b>LIVE WORK</b>	<b>DATE COMPLETED</b>	<b>INSTRUCTOR</b>
1.	Research vehicle service information including fluid type, vehicle service history, service precautions, and technical service bulletins, and recalls including xEVs and vehicles equipped with advanced driver assistance systems (ADAS). P-1			
2.	Identify suspension and steering system components and configurations. P-1			
3.	Retrieve and record on-board diagnostics, DTCs, monitor status, and freeze frame data; clear codes and data when directed. P-1			
4.	Disable, enable, and properly handle SRS/airbag system components during vehicle service following manufactures' procedures. P-1			
5.	Identify and interpret suspension and steering system concerns; determine needed action. P-1			
	<b>IV. SUSPENSION AND STEERING B. STEERING SYSTEMS</b>	<b>LIVE WORK</b>	<b>DATE COMPLETED</b>	<b>INSTRUCTOR</b>
1.	Inspect rack and pinion steering gear, tie rod ends (sockets), and bellows boots; repair or replace as needed. P-1			
2.	Inspect power steering fluid level and condition. P-2			
3.	Drain and replace power steering system fluid; use proper fluid type per manufacturer specification. P-2			
4.	Inspect for power steering fluid leakage; determine needed action. P-2			
5.	Remove, inspect, replace, and/or adjust power steering pump drive belt. P-2			
6.	Inspect, remove, and/or replace power steering hoses and fittings. P-2			
7.	Inspect, remove, and/or replace pitman arm, relay (centerlink/intermediate) rod, idler arm, mountings, and steering linkage damper. P-3			

8.	Inspect, replace, and/or adjust tie rod ends (sockets), tie rod sleeves, and clamps (non-rack and pinion). P-3			
9.	Inspect and test electric power steering system; determine needed action. P-1			
10.	Remove and replace steering wheel; center/time supplemental restraint system (SRS) coil (clock spring). P-1			
11.	Diagnose steering column noises, looseness, and binding concerns (including tilt/telescoping mechanisms); determine needed action. P-2			
12.	Diagnose power steering gear (non-rack and pinion) binding, uneven turning effort, looseness, hard steering, and noise concerns; determine needed action. P-3			
13.	Diagnose power steering gear (rack and pinion) binding, uneven turning effort, looseness, hard steering, and noise concerns; determine needed action. P-1			
14.	Inspect steering shaft universal joint(s), flexible coupling(s), collapsible column, lock cylinder mechanism, and steering wheel; determine needed action. P-2			
15.	Remove and replace rack and pinion steering gear; inspect mounting bushings and brackets. P-2			
16.	Remove and reinstall power steering pump. P-2			
17.	Remove and reinstall press fit power steering pump pulley; check pulley and belt alignment. P-2			
18.	Test power steering system pressure; determine needed action. P-3			
	<b>IV. SUSPENSION AND STEERING</b>	<b>LIVE</b>	<b>DATE</b>	<b>INSTRUCTOR</b>
	<b>C. SUSPENSION SYSTEMS</b>	<b>WORK</b>	<b>COMPLETED</b>	
1.	Inspect, remove, and/or replace upper and/or lower control arms, bushings, and shafts. P-2			
2.	Inspect and replace rebound/jounce bumpers. P-2			
3.	Inspect, remove, and/or replace track bar, strut rods/radius arms, and related mounts and bushings. P-2			
4.	Inspect, remove, and/or replace upper and/or lower ball joints (with or without wear indicators). P-2			
5.	Inspect, remove, and/or replace suspension system coil springs and spring insulators. P-2			

6.	Inspect, remove, and/or replace torsion bars and mounts. P-3			
7.	Inspect, remove, and/or replace front/rear stabilizer bar (sway bar) bushings, brackets, and links. P-2			
8.	Inspect, remove, and/or replace strut assembly, strut coil spring, insulators, and upper strut bearing mount. P-2			
9.	Inspect, remove, and/or replace components of rear suspension systems (Coil, Leaf, and Torsion Beam). P-1			
10.	Inspect, remove, and/or replace components of electronically controlled suspension systems. P-1			
11.	Inspect, remove, and/or replace steering knuckle assemblies. P-2			
12.	Diagnose suspension system noises, body sway, and uneven ride height concerns; determine needed action. P-1			
	<b>IV. SUSPENSION AND STEERING D. RELATED SUSPENSION AND STEERING SERVICE</b>	<b>LIVE WORK</b>	<b>DATE COMPLETED</b>	<b>INSTRUCTOR</b>
1.	Inspect, remove, and/or replace shock absorbers; inspect mounts and bushings. P-1			
2.	Inspect, service, and/or replace front and rear wheel bearings. P-1			
3.	Describe the function of electronically controlled suspension and steering systems and components, (i.e., active suspension and stability control). P-2			
	<b>IV. SUSPENSION AND STEERING E. WHEEL ALIGNMENT</b>	<b>LIVE WORK</b>	<b>DATE COMPLETED</b>	<b>INSTRUCTOR</b>
1.	Determine the need to recalibrate a vehicle's advanced driver assistance system (ADAS) that may require calibration after repairs or adjustments. P-1			
2.	Perform pre-alignment inspection, place vehicle in service mode as required; measure vehicle ride height; determine needed action. P-1			
3.	Describe four-wheel alignment angles (camber, caster, toe, setback, and thrust angle) and effects on vehicle handling/tire wear. P-1			
4.	Prepare vehicle for wheel alignment on alignment machine; perform four-wheel alignment by checking and adjusting front caster, front and rear camber, and toe as required; center steering wheel. P-1			
5.	Check toe-out-on-turns (turning radius); determine needed action. P-1			
6.	Check steering axis inclination (SAI) and included angle; determine needed action. P-1			

7.	Check rear wheel thrust angle; determine needed action. P-1			
8.	Check for front wheel setback; determine needed action. P-1			
9.	Identify front and/or rear cradle (subframe) misalignment; determine needed action. P-1			
10.	Reset steering angle sensor. P-1			
11.	Diagnose vehicle wander, drift, pull, hard steering, bump steer, memory steer, torque steer, and steering return concerns; determine needed action. P-1			
	<b>IV. SUSPENSION AND STEERING</b> <b>F. WHEELS AND TIRES</b>	<b>LIVE WORK</b>	<b>DATE COMPLETED</b>	<b>INSTRUCTOR</b>
1.	Inspect tire condition/age; identify tire wear patterns; check for correct tire size, application (service-class, load, and speed ratings), and air pressure as listed on the tire information placard/label. P-1			
2.	Rotate tires according to manufacturer's recommendation including vehicles equipped with tire pressure monitoring systems (TPMS). P-1			
3.	Dismount, inspect, and remount tire on wheel (with/without TPMS); balance wheel and tire assembly). P-1			
4.	Inspect tire and wheel assembly for air loss; determine needed action. P-1			
5.	Repair tire following tire manufacturer approved procedure. P-1			
6.	Identify indirect and direct tire pressure monitoring system (TPMS); calibrate/relearn system; verify operation of instrument panel lamps. P-1			
7.	Demonstrate knowledge of steps required to remove and replace sensors (per OEM/sensor manufacturer) in a tire pressure monitoring system (TPMS). P-1			
8.	Perform Road Force balance/match mounting. P-1			
9.	Diagnose wheel/tire vibration, shimmy, and noise; determine needed action. P-1			
10.	Measure wheel, tire, axle flange, and hub runout; determine needed action. P-2			
11.	Diagnose tire pull problems; determine needed action. P-1			