

NAME _____

SEMESTER _____ YEAR _____

**CERRITOS COLLEGE
AUTOMOTIVE TECHNOLOGY
HEATING AND AIR CONDITIONING
TASK LIST**

VII. HEATING AND AIR CONDITIONING		LIVE WORK	DATE COMPLETED	INSTRUCTOR
A. General: A/C System Diagnosis and Repair				
1.	Identify and interpret heating and air conditioning problems; determine needed action. P-1			
2.	Research vehicle service information including refrigerant/oil type, vehicle service history, service precautions, and technical service bulletins. P-1			
3.	Performance test A/C system; identify problems. P-1			
4.	Identify abnormal operating noises in the A/C system; determine needed action. P-2			
5.	Identify refrigerant type; select and connect proper gauge set/test equipment; record temperature and pressure readings. P-1			
6.	Leak test A/C system; determine needed action. P-1			
7.	Inspect condition of refrigerant oil removed from A/C system; determine needed action. P-2			
8.	Determine recommended oil and oil capacity for system application. P-1			
9.	Using a scan tool, observe and record related HVAC data and trouble codes. P-3			
B. Refrigeration System Component Diagnosis and Repair		LIVE WORK	DATE COMPLETED	INSTRUCTOR
1.	Inspect, remove, and/or replace A/C compressor drive belts, pulleys, tensioners and visually inspect A/C components for signs of leaks; determine needed action. P-1			
2.	Inspect, test, service and/or replace A/C compressor clutch components and/or assembly; check compressor clutch air gap; adjust as needed. P-2			
3.	Remove, inspect, reinstall, and/or replace A/C compressor and mountings; determine recommended oil type and quantity. P-2			

4.	Identify hybrid vehicle A/C system electrical circuits and service/safety precautions. P-2			
5.	Determine need for an additional A/C system filter; perform needed action. P-3			
6.	Remove and inspect A/C system mufflers, hoses, lines, fittings, O-rings, seals, and service valves; perform needed action. P-2			
7.	Inspect for proper A/C condenser airflow; determine needed action. P-1			
8.	Remove, inspect, and replace receiver/drier or accumulator/drier; determine recommended oil type and quantity. P-2			
9.	Remove, inspect, and install expansion valve or orifice (expansion) tube. P-1			
10.	Inspect evaporator housing water drain; perform needed action. P-1			
11.	Diagnose A/C system conditions that cause the protection devices (pressure, thermal, and/or control module) to interrupt system operation; determine needed action. P-2			
12.	Determine procedure to remove and reinstall evaporator; determine required oil type and quantity. P-2			
13.	Remove, inspect, reinstall, and/or replace condenser; determine required oil type and quantity. P-2			
C. Heating, Ventilation, and Engine Cooling Systems Diagnosis and Repair		LIVE WORK	DATE COMPLETED	INSTRUCTOR
1.	Inspect engine cooling and heater systems hoses and pipes; perform needed action. P-1			
2.	Inspect and test heater control valve(s); perform needed action. P-2			
3.	Diagnose temperature control problems in the HVAC system; determine needed action. P-2			
4.	Determine procedure to remove, inspect, reinstall, and/or replace heater core. P-2			
D. Operating Systems and Related Controls Diagnosis and Repair		LIVE WORK	DATE COMPLETED	INSTRUCTOR
1.	Inspect and test HVAC system blower motors, resistors, switches, relays, wiring, and protection devices; determine needed action. P-1			
2.	Diagnose A/C compressor clutch control systems; determine needed action. P-2			

3.	Diagnose malfunctions in the vacuum, mechanical, and electrical components and controls of the heating, ventilation, and A/C (HVAC) system; determine needed action. P-2			
4.	Inspect and test HVAC system control panel assembly; determine needed action. P-3			
5.	Inspect and test HVAC system control cables, motors, and linkages; perform needed action. P-3			
6.	Inspect HVAC system ducts, doors, hoses, cabin filters, and outlets; perform needed action. P-1			
7.	Identify the source of HVAC system odors. P-2			
8.	Check operation of automatic or semi-automatic HVAC control systems; determine needed action. P-2			
E. Refrigerant Recovery, Recycling, and Handling		LIVE WORK	DATE COMPLETED	INSTRUCTOR
1.	Perform correct use and maintenance of refrigerant handling equipment according to equipment manufacturer's standards. P-1			
2.	Identify A/C system refrigerant; test for sealants; recover, evacuate, and charge A/C system; add refrigerant oil as required. P-1			
3.	Recycle, label, and store refrigerant. P-1			