
Appendix A

AUTOMOTIVE SERVICE TECH AND MECHANIC

WORK PROCESS SCHEDULE AND RELATED INSTRUCTION OUTLINE



Appendix A

WORK PROCESS SCHEDULE Automotive Service Tech and Mechanic

O*NET-SOC CODE: 49-3023.00 **RAPIDS CODE:** 0592CB

This schedule is attached to and a part of these Standards for the above identified occupation.

1. APPRENTICESHIP APPROACH

☐ Time-based ☒ Competency-based ☐ Hybrid

2. TERM OF APPRENTICESHIP

The term of **Automotive Service Tech and Mechanic** is **Competency Based** supplemented by the minimum required **144** hours of related training instruction per year.

3. RATIO OF APPRENTICES TO JOURNEYWORKERS

The apprentice to journeyworker ratio is: **1** Apprentice(s) to **1** Journeyworker(s).

4. APPRENTICE WAGE SCHEDULE

Apprentices shall be paid a progressively increasing schedule of wages based on either a percentage or a dollar amount of the current hourly journeyworker wage rate, which is: **\$22.54**/per hour.

Period	Wage (Hourly)	Description
1	16.00	6 months + hours
2	16.50	6 months + hours
3	17.00	6 months + hours
4	17.50	6 months + hours

5. PROBATIONARY PERIOD

Applicants selected for apprenticeship will serve a probationary period of **1000** Hours.



6. SELECTION PROCEDURES

Applicants will be selected by individual participating employer sponsors using selection method #4, as outlined in the California Code of Regulations, Title 8, Chapter 2, Part 1, Section 215, Chapter 6, from a pool of eligible created during the established recruiting process in accordance with the State and Federal Equal Opportunity regulations.

1. Minimum age of all applicants shall be 16 years. There is no maximum age;
2. Educational prerequisite for entry: High school diploma or GED/equivalent;
3. Physical prerequisites: Applicant must have the ability to safely perform the work of the trade/occupation. Physical examination required for entry is at no cost to the applicant and the physical exam will be defined by the individual employersponsor.
4. Written Test: Administered by Faculty and/or Program Coordinator
5. Oral Interview: None Required
6. All applicants will be notified in writing of Acceptance or Rejection.
7. If rejected, reasons for rejections will be stated.
8. A pool of applicants will be established and maintained for two years as follows:
 - a. Interested applicants will have an opportunity to attend a publicorientation and enroll in the program's employment preparation course. Completers of the course will be guided through the development of a resume and job application, which will be published to participating employer partners.
9. And applicants will be employed as follows:
 - a. Applicants will follow directives of individual employer partners through job application, interview and pre-screening.
 - b. Applicant's prior work experience and training will be evaluated by the committee at the time of registration, and appropriate credit will be given toward a higher apprenticeship and/or wage bracket. Apprentice applicant must verify, in writing, all past experience/education for consideration of credit.
 - c. Each participating employer sponsor, upon determination of the need to employ and train an apprentice, will register an apprentice after upholding a fair and consistent sourcing, recruiting, and evaluation process;
 - d. Participating employer sponsors will report recruitment and selection data annually to the Program Name Apprenticeship Training Program coordinator/director;
 - e. Minimum age of all applicants shall be 16 years. There is no maximum age;
 - f. Educational prerequisite for entry: High school diploma or GED/equivalent;
 - g. Physical prerequisites: Applicant must have the ability to safely perform the work of the trade/occupation. Physical examination required for entry is at no cost to the applicant and the physical exam will be defined by the individual employer sponsor.
 - h. Drug screening prior to employment, as well as random drug screening throughout the apprenticeship program may be required for selection and/or continued participation/employment;
 - i. General aptitude or other skills test shall be defined by the individual employer sponsor and administered by the employer sponsor or its delegated agent;
 - j. Oral interview is per employer sponsor's individual selection procedures with selection documentation to be on file with the Program Name program director/coordinator.



WORK PROCESS SCHEDULE

Automotive Service Tech and Mechanic

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On-the-Job Learning Outline

Inspection, removal, repair or maintenance, installation of components and systems related to automotive suspension, steering and alignment.		
Competencies	Date Completed	Initial
A. Diagnose steering column noises, looseness, and binding concerns (including tilt/telescoping mechanisms).		
B. Inspect rack and pinion steering gear inner tie rod ends (sockets) and bellows boots; replace as needed.		
C. Inspect, remove, and replace components including but not limited to power steering hoses and fittings, pitman arm, relay rod, idler arm, mountings, and steering linkage damper, tie rod ends (sockets), tie rod sleeves, and clamps, upper and lower control arms, bushings, shafts, and rebound bumpers, strut rods and bushings, upper and/or lower ball joints (with or without wear indicators), steering knuckle assemblies, short and long arm suspension system coil springs and spring insulators.		
D. Describe the function of suspension and steering control systems and components, (i.e., active suspension and stability control).		
E. Inspect rear suspension system leaf spring(s), spring insulators (silencers), shackles, brackets, bushings, center pins/bolts, and mounts.		
F. Identify indirect and direct tire pressure monitoring system (TPMS); calibrate system; verify operation of instrument panel lamps.		
G. Demonstrate knowledge of steps required to remove and replace sensors in a tire pressure monitoring system (TPMS) including relearn procedure.		
Inspection, removal, repair or maintenance, installation of components and systems related to automotive brake systems.		
Competencies	Date Completed	Initial
A. Check and inspect brake pad wear indicator, parking brake system and components for wear, binding, and corrosion, rotor and mounting surface; measure rotor thickness, thickness variation, and lateral runout; determine needed action, and determine needed action.		
B. Diagnose electronic brake control system braking concerns caused by vehicle modifications (tire size, curb height, final drive ratio, etc.), poor stopping, pulling or dragging concerns caused by malfunctions in the hydraulic system, wheel bearing noises, wheel shimmy, and vibration concern, and determine needed action.		
C. Identify and inspect components of hydraulic brake warning light system, electronic brake control system components (ABS, TCS, ESC); brake power assist system (vacuum and hydraulic); check vacuum supply (manifold or auxiliary pump) to vacuum-type power booster and determine needed action.		



D. Inspect brake lines, flexible hoses, and fittings for leaks, dents, kinks, rust, cracks, bulging, wear, and loose fittings/supports; caliper mounting and slides/pins for proper operation, wear, and damage; determine needed action.		
E. Test, diagnose, and service electronic brake control system speed sensors, toothed ring (tone wheel), and circuits using a graphing multimeter (GMM)/digital storage oscilloscope (DSO).		
F. Remove, inspect, clean and/or replace caliper assembly; leaks, damage, and wear, sealed wheel bearing assembly, brake drum; measure brake drum diameter; brake shoes, springs, pins, clips, levers, adjusters/self-adjusters, other related brake hardware, and backing support plates; lubricate and reassemble; determine needed action.		
G. Select, handle, store, and fill brake fluids to proper level; use proper fluid type per manufacturer specification.		
Inspection, removal, repair or maintenance, installation of components and systems related to automotive electrical and electronic systems.		
Competencies	Date Completed	Initial
A. Confirm proper battery capacity for vehicle application; perform battery capacity and load test; determine needed action.		
B. Demonstrate knowledge of an automatic idle-stop/start-stop system, and proper use of a test light on an electrical circuit.		
C. Describe the process for software transfer, software updates, or reprogramming of electronic modules.		
D. Diagnose body electronic systems circuits using a scan tool; check for module communication errors (data communication bus systems); operation of comfort and convenience accessories and related circuits (such as: power window, power seats, pedal height, power locks; operation of entertainment and related circuits (such as: radio, DVD, remote CD changer, navigation, amplifiers, speakers, antennas, and voice-activated accessories); operation of safety systems and related circuits (such as: horn, airbags, seat belt pretensioners; operation of security/anti-theft systems and related circuits (such as: theft deterrent, door locks, remote keyless entry, remote start, and starter/fuel disable); determine needed action.		
E. Identify electrical/electronic modules, security systems, radios, and other accessories that require reinitialization or code entry after reconnecting vehicle battery, hybrid vehicle auxiliary (12v) battery service, repair, and test procedures, safety precautions for high voltage systems on electric, hybrid, hybrid-electric, and diesel vehicles.		
F. Inspect, adjust, and/or replace, generator (alternator) drive belts; check pulleys and tensioners for wear; check pulley and belt alignment; components, connectors, terminals, harnesses, and wiring in electrical/electronic systems (including solder repairs); determine needed action. Demonstrate use of digital multimeter.		
G. Use fused jumper wires to check operation of electrical circuits.		
Inspection, removal, repair or maintenance, installation of components and systems related to automotive engine performance.		
Competencies	Date Completed	Initial
A. Diagnose drivability and emissions problems resulting from malfunctions of interrelated systems (cruise control, security alarms, suspension controls, traction controls; or caused by catalytic converter system; or caused by the evaporative emissions control (EVAP) system; or caused by the exhaust gas recirculation (EGR) system; inspect, test, service, and replace the components of the EGR system; determine needed action		



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- B. Inspect, test, and/or replace exhaust system hangers, brackets, clamps, heat shields, fuel injectors, inspect condition of exhaust system hangers, brackets, clamps, and heat shields; determine needed action.
 - C. Retrieve and record diagnostic trouble codes (DTC), OBD monitor status, and freeze frame data; clear codes when applicable.
 - D. Interpret diagnostic trouble codes (DTCs) and scan tool data related to the emissions control systems; determine needed action.
 - E. Check and refill diesel exhaust fluid (DEF). Replace fuel filter(s).



RELATED INSTRUCTION OUTLINE

Automotive Service Tech and Mechanic

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Through consultation with the Apprenticeship Committee and the indenturing employer, apprentices will select an applicable program of study/course track and complete a minimum of 144 hours of related instruction per year of apprenticeship. Courses will be approved by the Apprenticeship Committee and made available to applicable apprentices by approved education providers/institutions. Apprentices will enroll in, and complete, the required coursework that satisfies the minimum requirements of the program. Prior applicable education and training will be credited towards completion of related education requirements and apprentices will be offered tracks advancing their technical aptitude in the profession.

Source: Mt. San Jacinto College

The following related training outline identifies the courses that are currently identified as suggested course work for this occupation:

BASIC TRAINING:

- Basic Auto Mechanics – 108 hours
- Automotive Suspension, Steering and Alignment Systems - 144 hours
- Automotive Brake Systems – 90 hours
- Automotive Electrical/Electronics I – 108 hours
- Engine Performance I – 108 hours

SUPPLEMENTAL OPTIONAL TRAINING:

- Express Service – 72 hours
- Basic Maintenance Light Repair I (MLR) – 108 hours
- Basic Maintenance Light Repair II (MLR) – 144 hours
- Maintenance Light Repair III (MLR) – 90 hours
- Automotive Engine Theory and Repair (Bottom End) – 90 hours
- Automotive Engine Theory and Repair (Upper End) – 90 hours
- Automatic Transmissions & Transaxles – 108 hours
- Manual Transmissions & Transaxles – 108 hours
- Automotive Electrical / Electronics II – 144 hours
- Engine Performance II – 126 hours
- Automotive Heating, Ventilation and Air Conditioning – 108 hours
- Introduction to Hybrid and Electric Vehicle Technology – 90 hours
- Cooperative Work Experience: Automotive and Transportation Technologies – 90 hours



Appendix A = Work Process Schedule and Related Instruction Outline by LAUNCH Apprenticeship Network, Department of Labor (DOL) – Apprenticeship Building America (ABA) Grant, FoundationCCC is licensed under CC BY 4.0.

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