
Appendix A

MASTER AUTOMOTIVE SERVICE TECHNICIAN

WORK PROCESS SCHEDULE

AND

RELATED INSTRUCTION OUTLINE

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Appendix A

WORK PROCESS SCHEDULE MASTER AUTOMOTIVE SERVICE TECHNICIAN

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 the **MASTER AUTOMOTIVE SERVICE TECHNICIAN** 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: **\$35.00**/per hour.

Period	Wage (Hourly)	Description
1	\$16.00	6 months + hours
2	\$16.50	2 nd 6 months + hours
3	\$17.00	3 rd 6 months + hours
4	\$17.50	4 th 6 months + hours

5. PROBATIONARY PERIOD

Every applicant 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; completed introductory Automotive course.
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 employer sponsor.
4. Written Test: None Required
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 public orientation 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. Driver License required.
 - g. Educational prerequisite for entry: High school diploma or GED/equivalent;
 - h. 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.
 - i. 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;
 - j. General aptitude or other skills test shall be defined by the individual employer sponsor and administered by the employer sponsor or its delegated agent;
 - k. 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
MASTER AUTOMOTIVE SERVICE
TECHNICIAN

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

Master Automotive Service Technician	
Job Description: Diagnose, adjust, repair, or overhaul automotive vehicles	
RAPIDS Code: 0592CB	O*NET Code: 49-3023.00
Estimated Program Length: 24-36 Months	
Apprenticeship Type: <input checked="" type="checkbox"/> Competency-Based <input type="checkbox"/> Time-Based <input type="checkbox"/> Hybrid	

Suggested On-the-Job Learning Outline

Engine Operation and Service		
Competencies	Date Completed	Initial
A. Diagnose the cause of excessive oil consumption, coolant consumption, unusual engine exhaust color and odor; determine needed action.		
B. Perform cylinder power balance tests, compression test, and leak down test and determine needed action.		
C. Inspect and replace water pump(s) (including electrical water pumps), thermostat, coolant by-pass, and thermostat housing.		
D. Inspect and test coolant; drain, flush, and refill cooling cistern with recommended coolant; bleed air as required,		
E. Inspect and diagnose all engine starting systems including ignition system, starter, battery, and related components.		
F. Inspect, disassemble, diagnose and replace engine cylinder head and all related components.		
G. Diagnose the cause of excessive oil consumption, coolant consumption, unusual engine exhaust color and odor; determine needed action.		

Manual Automatic Transmission		
Competencies	Date Completed	Initial
A. Diagnose noise, vibration, harshness, and shift quality problems; determine necessary action.		
B. Diagnose fluid loss, type, level, and condition problems; determine necessary action.		
C. Diagnose shift quality concerns resulting from problems in the electronic transmission control system; determine necessary action.		
D. Inspect, replace, and/or align powertrain mounts.		
E. Replace fluid and filter(s); verify proper fluid level and type (for transmission with, or without, a dipstick).		
F. Diagnose clutch noise, binding, slippage, pulsation, chatter, pedal feel/effort, and release problems; determine needed repairs.		
G. Inspect, adjust, replace, and bleed hydraulic clutch slave/release cylinder, master cylinder, lines, and hoses; clean and flush hydraulic system; refill with proper fluid.		
H. Diagnose transmission noise, difficult shifting, gear clash, jumping out of gear, fluid condition and type, and fluid leakage problems; determine needed repairs.		
I. Check fluid level; refill with proper fluid. (Manual transmission and differential)		
J. Inspect, service, and replace shafts, yokes, boots, and universal/CV joints; verify proper phasing.		
K. Diagnose, inspect, service, and replace wheel bearings, seals, and hubs.		
L. Inspect, drain, and refill with proper lubricant. (limited slip differential)		

Advanced Electrical		
Competencies	Date Completed	Initial
A. Check voltages, voltage drops, and current flow in electrical/electronic circuits; interpret readings and determine needed repairs.		
B. Use scan tool data, bidirectional controls, and/or diagnose trouble codes (DTCs) to diagnose electronic systems; interpret readings and determine necessary action.		
C. Find shorts, grounds, opens, and resistance problems in electrical/electronic circuits; determine needed repairs.		
D. Measure and diagnose the cause(s) of abnormal key-off battery drain (parasitic draw); determine needed repairs.		
E. Read and interpret electrical schematic diagrams and symbols.		
F. Differentiate between electrical and engine mechanical problems that cause a slow crank, no-crank, extended cranking, or a cranking noise condition.		

Engine Performance		
Competencies	Date Completed	Initial
A. Prepare and inspect vehicle for HC, CO, NOx, CO2, and O2 exhaust gas analysis; perform test and interpret exhaust gas readings.		
B. Verify driver's complaint, perform visual inspection, and/or road test vehicle; determine needed action.		
C. Diagnose engine mechanical, electrical, electronic, fuel, and ignition problems with an oscilloscope, engine analyzer, and/or scan tool; determine needed action.		
D. Diagnose emissions or drivability problems caused by oil related issues, such as incorrect pressure, poor quality, incorrect type used for the application.		
E. Test and diagnose emissions or drivability problems caused by battery condition, connections, or excessive key-off battery drain; determine needed action.		
F. Diagnose ignition system related problems such as no-starting, hard starting, poor drivability, spark knock, power loss, poor mileage, and emissions problems; determine root cause; determine needed action.		
G. Diagnose fuel system related problems, including hot or cold no-starting, hard starting, poor drivability, incorrect idle speed, poor idle, flooding, hesitation, surging, engine misfire, power loss, stalling, poor mileage, and emissions problems determine root cause; determine needed action.		
H. Interpret fuel or induction system related diagnostic trouble codes (DTCs); analyze fuel trim and other scan tool data; determine needed action.		
I. Interpret evaporative emissions-related scan tool data and diagnostic trouble codes (DTCs); determine needed action.		
J. Use a scan tool, digital multimeter (DMM), or digital storage oscilloscope (DSO) to inspect or test computerized engine control system sensors, actuators, circuits, and powertrain/engine control module (PCM/ECM); determine needed action.		
K. Diagnose drivability and emissions problems resulting from failures of interrelated systems (for example: cruise control, security alarms/theft deterrent, torque management, traction controls, A/C, non-OEM installed accessories).		
L. Clear diagnostic trouble codes (DTCs), run all OBD II monitors, and verify the repair.		
M. Test and diagnose emissions or drivability problems caused by positive crankcase ventilation (PCV) system.		

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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: Chaffey College

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

Suggested Related Instruction Outline

Name	Hours
Engine Management Systems and Drivability	108
Manual and Automatic Transmissions, Transaxles and Drive Trains	162
Engine Operations and Service	162
Advanced Automotive Electrical Systems	126
Total Hours	558



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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