LAUSD UNIFIED Division of Adult and Career Education

Career Technical Education (CTE) Course Outline

Course Title:	Auto Tech: Smog Check Repair Technician License Renewal
Course Number:	79-60-70
Date:	July 2024
Industry Sector:	Transportation
Pathway:	Systems Diagnostics and Service
CBEDS Title:	Automotive Specialty, Other Combinations
CBEDS Code:	5688
Credits:	0

Hours:

Total
20

Course Description:

This competency-based course meets the requirements to complete at least sixteen hours of update training every two (2) years as part of their license renewal. This training is intended to provide technicians with on-going education in automotive technology and related diagnostic and repair practices. Instruction includes an introduction review, safety, smog check diagnosis and repair, and a final examination. The competencies in this course are aligned with the California High School Academic Content Standards and the California Career Technical Education Model Curriculum Standards.

Prerequisites:	Enrollment requires a California Smog Technician license, an 8th grade reading level as measured by the CASAS GOALS Test and mastery of competencies in DACE Math 2 (53-03-76).
NOTE:	For Perkins purposes, this course has been designated as a **capstone** course. This course **can** be repeated once a student receives a Certificate of Completion.
A-G Approval	N/A
Methods of Instruction:	Lecture and discussion, demonstration, multimedia presentations, projects, individualized instruction, shop work
Student Evaluation:	Summative: End of section assessments
Industry Certification:	N/A
Recommended Texts:	Escalambre, Rick. EVAP System Operation, Diagnosis & Repair, BAR approval, 2012. Keiser, Mark. Hybrid and Safety Procedures, Pearson Learning Solutions, 2014 Perrin, Bryan. Advanced Scan Tool & Emissions Diagnosis, Automotive Test Group, 2018
Link to Resource Folder	https://bit.ly/autotechlicrenew

Approved by: Renny L. Neyra, Executive Director

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
A. INTRODUCTION REVIEW Understand, apply, and evaluate classroom and workplace policies and procedures. (2 hours)	1. Review the scope and purpose of the course. 2. Review the classroom policies and procedures. 3. Review and demonstrate Zoom, Schoology, and basic computer skills. 4. Review the opportunities available for promoting gender equity and the representation of non-traditional populations in the automotive industry. 5. Review and recognize the importance of ethics, teamwork, respecting individual and cultural differences and diversity in the workplace. 6. Review the role of the Automotive Service of Excellence (ASE) as it applies to the automotive industry. 7. Review the role of the Automotive Service Education Foundation (ASEF) in auto technician training. 8. Review and demonstrate how reducing carbon emissions supports the use of green technology. 9. Explain and discuss the licensee expectations and station obligations.	**Career Ready Practice:** 1, 2, 3, 4, 5, 8, 9, 10, 11, 12 **CTE Anchor:** Academics: 1.0 Communications: 2.1, 2.3, 2.5 Career Planning & Management: 3.1, 3.4, 3.5, 3.6, 3.9 Technology: 4.1, 4.5 Problem Solving & Critical Thinking: 5.4 Ethics & Legal Responsibilities: 8.2, 8.3, 8.4, 8.5 Leadership & Teamwork: 9.3, 9.4, 9.6 Demonstration & Application: 11.1 **CTE Pathway:** C1.1, C1.3
B. SAFETY – GENERAL REVIEW	1. Review classroom and workplace procedures for first aid, emergencies, and accidents/injury prevention. 2. Review the California Occupational Safety and Health Administration (Cal/OSHA) workplace	**Career Ready Practice:** 1, 2, 4, 10, 12

Understand safety procedures and techniques in the auto repair and maintenance sector. (2 hours)	requirements for auto technicians to maintain a safe and healthy working environment. 3. Review the impact of Environmental Protection Agency (EPA) legislation on Transportation Industry Sector practices in protecting and preserving the environment. 4. Review how the environmental, economic, and automotive emissions impact green technology. 5. Review the Bureau of Automotive Repair (BAR) standards for consumer and environmental protection. 6. Review the use of the Safety Data Sheet (SDS) as it applies to the automotive industry. 7. Review the safety items required by the federal, state, and local regulations. 8. Review the importance of proper personal hygiene in the classroom and auto shop. 9. Explain the importance of safety procedures when inspecting a vehicle. 10. Review and demonstrate the standards regarding proper use of protective equipment in an auto shop: a. clothing and gloves b. respiratory gear c. eye gear d. work shoes e. ventilation impacting health for hazards and exposure to emissions/exhaust gas f. handling, storage, and disposal of chemicals and hazardous materials used in an auto shop g. proper use of tools and equipment 11. Review personal safety when lifting, bending, or moving equipment and supplies. 12. Review the importance of practicing safe, legal, and response use of digital media information. 13. Pass the safety test with 100% accuracy.	**CTE Anchor:** Academics: 1.0 Communications: 2.1, 2.3, 2.5, 2.6 Technology: 4.1, 4.2 Health & Safety: 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7 Technical Knowledge & Skills: 10.2, 10.4 Demonstration & Application: 11.1 **CTE Pathway:** C1.1, C1.2, C1.3, C1.4, C2.2 , C2.3, C4.1, C4.
C. SMOG CHECK DIAGNOSIS AND REPAIR Understand and apply knowledge and skills to diagnose and repair vehicles based on real-world situations.	1. Understand and research the diagnostic skills needed to diagnose and repair vehicles that use complex systems such as: a. diesel fundamentals and diagnostic principals b. new technologies c. hybrid fundamentals and safety procedures d. OBD II System Operations and diagnostic principles e. smog check diagnostics and permanent diagnostic trouble codes (DTCs)	**Career Ready Practice:** 1, 2, 4, 5, 9, 10, 11, 12 **CTE Anchor:** Academics: 1.0 Communications: 2.1, 2.3, 2.5

(14 hours)	f. Controller Area Network (CAN) g. variable valve timing h. direct injection systems i. air fuel ratio sensors j. advance emission and diagnostic k. OBD II EVAP emission systems l. disciplined emission diagnose m. using the DSO to diagnose engine mechanical problems n. fuel and ignition system diagnosis o. other complex systems 2. Discuss theory and operation of different systems. 3. Apply diagnostic strategies based on real-world instruction. 4. Form teams and demonstrate practical shop/lab exercises to enhance study materials learned. 5. Discuss diagnostic strategies that improve technician diagnostic skills, time, and accuracy. 6. Explain and demonstrate systems that are built in today's vehicle such as: a. identifying the 9 modes within the OBD II system b. Emission Diagnostic Monitors c. Fuel Trim d. Global OBD II e. OEM OBD II data f. Enhanced Diagnostic Faults 7. Explain, discuss, and demonstrate the following: a. scan tool operation b. lab scopes c. digital storage oscilloscopes d. amp meters e. EVAP Smoke Leak Detector f. other diagnostic tools and equipment 8. Describe a diagnostic routine for identifying the root cause of a problem.	Technology: 4.1, 4.2, 4.5 Problem Solving & Critical Thinking: 5.1, 5.2, 5.3, 5.4 Leadership & Teamwork: 9.3, 9.7 Technical Knowledge & Skills: 10.1, 10.2 Demonstration & Application: 11.1 **CTE Pathway:** C1.3, C2.1, C2.2, C2.3 C2.4, C2.5, C2.6, C2. C3.1, C3.5, C3.6, C3. C4.1, C4.2, C4.3, C6. C6.2, C6.3, C6.4, C7 C7.2, C7.3, C7.7
D. FINAL EXAMINATION Understand hands-on competencies and pass a mandatory written exam.	1. Pass a mandatory written examination with a 70% score or higher.	**Career Ready Practice:** 1, 2, 4, 5 **CTE Anchor:** Academics: 1.0 Communications: 2.1, 2.3, 2.5

(2 hours)		Technology: 4.2 Problem Solving & Critical Thinking: 5.4 Technical Knowledge & Skills: 10.2 **CTE Pathway:** C5.1

ACKNOWLEDGEMENTS

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Ana Martinez, Nathaniel Davis, and Victor Lerma