

**Career Technical Education (CTE) Course Outline**

<b>Course Title:</b>	Auto Tech: Smog Check Inspector Training Level 2
<b>Course Number:</b>	79-90-67
<b>Date:</b>	July 2024
<b>Industry Sector:</b>	Transportation
<b>Pathway:</b>	Systems Diagnostics and Service
<b>CBEDS Title:</b>	Automotive Specialty, Other Combinations
<b>CBEDS Code:</b>	5688
<b>Credits:</b>	5

**Hours:**

Total
60

**Course Description:**

This competency-based course is the second in a sequence of two designed to meet the Bureau of Automotive Regulation (BAR) licensing requirements for the Level 2 Smog Procedure Training. This training provides the procedural knowledge, skills, and abilities needed to perform Smog Check Inspections along with technical instruction and practical experience in emission controls using sustainable and green vehicle technologies. This course includes a series of hands-on assessments and a written examination. Upon successful completion of this course, inspector candidates qualify to register for the California Smog Check Inspector 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.

<b>Prerequisites:</b>	Enrollment requires successful completion of the Auto Tech: Smog Check Inspector Training Level 1 (79-90-65) course.
<b>NOTE:</b>	<p>For Perkins purposes, this course has been designated as a capstone course.</p> <p>This course meets the Bureau of Automotive Regulation (BAR) standards for the basic clean air car course to become licensed as a smog inspection technician. A minimum of 28 hours of attendance must be completed by students receiving a state required course certificate.</p> <p>This course <b>cannot</b> be repeated once a student receives a Certificate of Completion.</p>
<b>A-G Approval</b>	N/A
<b>Methods of Instruction:</b>	Lecture and discussion, demonstration using vehicles of early and late model years, multi-sensory presentation, lab, and shop work using early and late model year vehicles.
<b>Student Evaluation:</b>	Summative: End of section assessments.
<b>Industry Certification:</b>	N/A
<b>Recommended Texts:</b>	Bureau of Automotive Repair. <u>Smog Check Manual: Basic Clean Air Car Course Workbook</u> . Bureau of Automotive Repair, 2008
<b>Link to Resource Folder</b>	<a href="https://bit.ly/autotechsmog2">https://bit.ly/autotechsmog2</a>

Approved by: Renny L. Neyra, Executive Director

COMPETENCY AREAS AND STATEMENTS	MINIMAL COMPETENCIES	STANDARDS
<p><b>A. INTRODUCTION REVIEW</b></p> <p>Understand, apply, and evaluate classroom and workplace policies and procedures.</p> <p>(2 hours)</p>	<ol style="list-style-type: none"> <li>1. Review the scope and purpose of the course.</li> <li>2. Review the classroom policies and procedures.</li> <li>3. Review and demonstrate Zoom, Schoology, and basic computer skills.</li> <li>4. Review students' basic knowledge in engine and emissions principles.</li> <li>5. Review, identify, research, and draw conclusions on the different career paths, occupations, employment outlook, and career advancements in the transportation industry sector which have an impact on engine and emissions.</li> <li>6. Review the opportunities available for promoting gender equity and the representation of non-traditional populations in the automotive industry.</li> <li>7. Review and recognize the importance of ethics, teamwork, respecting individual and cultural differences, and diversity in the workplace.</li> <li>8. Review the role of the Automotive Service of Excellence (ASE) as it applies to the automotive industry.</li> <li>9. Review the role of the Automotive Service Education Foundation (ASEF) in auto technician training.</li> <li>10. Review the role of the smog check inspector.</li> <li>11. Review and demonstrate how reducing carbon emissions supports the use of green technology.</li> <li>12. Explain and discuss the licensee expectations and station obligations.</li> </ol>	<p><b>Career Ready Practice:</b> 1, 2, 3, 4, 5, 8, 9, 10, 11, 12</p> <p><b>CTE Anchor:</b> Academics: 1.0 Communications: 2.1, 2.3, 2.5 Career Planning &amp; Management: 3.1, 3.4, 3.5, 3.6, 3.9 Technology: 4.1, 4.5 Problem Solving &amp; Critical Thinking: 5.4 Ethics &amp; Legal Responsibilities: 8.2, 8.3, 8.4, 8.5 Leadership &amp; Teamwork: 9.3, 9.4, 9.6 Demonstration &amp; Application: 11.1</p> <p><b>CTE Pathway:</b> C1.1, C1.3</p>
<p><b>B. SAFETY – GENERAL REVIEW</b></p>	<ol style="list-style-type: none"> <li>1. Review classroom and workplace procedures for first aid, emergencies, and accidents/injury prevention.</li> <li>2. Review the California Occupational Safety and Health Administration (Cal/OSHA) workplace</li> </ol>	<p><b>Career Ready Practice:</b> 1, 2, 4, 10, 12</p>

<p>Understand safety procedures and techniques in the auto repair and maintenance sector.</p> <p>(4 hours)</p>	<p>requirements for auto technicians to maintain a safe and healthy working environment.</p> <ol style="list-style-type: none"> <li>3. Review the impact of Environmental Protection Agency (EPA) legislation on Transportation Industry Sector practices in protecting and preserving the environment.</li> <li>4. Review and demonstrate ASEF standards regarding proper handling, storage and disposal of chemicals, and materials used in an auto shop.</li> <li>5. Review the impact of California Air Resources Board (ARB) legislation on the Transportation Industry Sector.</li> <li>6. Review how environmental, economic, and automotive emissions impact green technology.</li> <li>7. Review the Bureau of Automotive Repair (BAR) standards for consumer and environmental protection.</li> <li>8. Review the use of the Safety Data Sheet (SDS) as it applies to the automotive industry.</li> <li>9. Review the safety items required by the federal, state, and local regulations.</li> <li>10. Review the importance of proper personal hygiene in the classroom and auto shop.</li> <li>11. Explain the importance of safety procedures when inspecting a vehicle.</li> <li>12. Review and demonstrate the standards regarding proper use of protective equipment in an auto shop: <ol style="list-style-type: none"> <li>a. clothing and gloves</li> <li>b. respiratory gear</li> <li>c. eye gear</li> <li>d. work shoes</li> <li>e. ventilation impacting health for hazards and exposure to emissions/exhaust gas</li> <li>f. handling, storage, and disposal of chemicals and hazardous materials used in an auto shop</li> <li>g. proper use of tools and equipment</li> </ol> </li> <li>13. Review personal safety when lifting, bending, or moving equipment and supplies.</li> <li>14. Review the importance of practicing safe, legal, and response use of digital media information.</li> <li>15. Pass the safety test with 100% accuracy.</li> </ol>	<p><b>CTE Anchor:</b></p> <p>Academics: 1.0</p> <p>Communications: 2.1, 2.3, 2.5, 2.6</p> <p>Technology: 4.1, 4.2</p> <p>Health &amp; Safety: 6.1, 6.2, 6.3, 6.4, 6.5, 6.6, 6.7</p> <p>Technical Knowledge &amp; Skills: 10.2, 10.4</p> <p>Demonstration &amp; Application: 11.1</p> <p><b>CTE Pathway:</b> C1.1, C1.2, C1.3, C1.4, C2.2, C2.3, C4.1, C4.2</p>
<p><b>C. DYNAMOMETER SAFETY TRAINING</b></p> <p>Understand, apply, and</p>	<ol style="list-style-type: none"> <li>1. Define Acceleration Simulation Mode (ASM).</li> <li>2. Conduct an overview of the ASM Operation and Testing.</li> </ol>	<p><b>Career Ready Practice:</b> 1, 2, 4, 5, 9, 10, 11, 12</p>

<p>become familiar with ASM operating and testing.</p> <p>(8 hours)</p>	<ol style="list-style-type: none"> <li>3. Discuss and explain the five gas emissions and their impact on green technology:             <ol style="list-style-type: none"> <li>a. hydrocarbons (HC)</li> <li>b. carbon monoxide (CO)</li> <li>c. oxygen (O<sub>2</sub>)</li> <li>d. carbon dioxide (CO<sub>2</sub>)</li> <li>e. oxides of nitrogen (NO<sub>x</sub>)</li> </ol> </li> <li>4. Explain the BAR 97 test procedures to include:             <ol style="list-style-type: none"> <li>a. general operating procedures</li> <li>b. preparing to test a vehicle</li> <li>c. entering the data</li> <li>d. performing the test</li> <li>e. reference materials</li> </ol> </li> <li>5. State the importance of customer awareness to:             <ol style="list-style-type: none"> <li>a. differentiate BAR 97 (ASM loaded mode) vs. Two Speed Inspection (TSI) vs. Onboard Inspection System (OIS)</li> <li>b. review Vehicle Inspection Reports (VIR) with the customer</li> <li>c. explain the customer repair options and research the different alternative programs</li> </ol> </li> <li>6. Explain the basic diagnostic procedure and discuss the BAR's diagnostic flowchart.</li> <li>7. Demonstrate the proper procedures used in operation a BAR 97 Emission Inspection System (EIS) during an emission test.</li> <li>8. Discuss relevant screen prompts and abort situations that may be encountered during the emission test, and the proper action to take in aborted test situations.</li> <li>9. Demonstrate the correct procedure for pre-inspecting a vehicle for hazards (oil leaks, coolant leaks, abnormal noises, mileage, etc.) prior to performing a BAR 97 EIS emission test.</li> <li>10. Demonstrate how to follow an ASM emissions test driving trace during a loaded mode emissions test.</li> <li>11. Form teams to perform a loaded mode test using a test vehicle on the BAR 97 EIS.</li> <li>12. Ensure the test vehicle is centered and secured on the BAR 97 EIS prior to a loaded mode test.</li> <li>13. Administer and grade the BAR 97 transition test.</li> <li>14. Pass a dynamometer safety training assessment with an 80% score or higher.</li> </ol>	<p><b>CTE Anchor:</b></p> <p>Academics: 1.0</p> <p>Communications: 2.1, 2.3, 2.5</p> <p>Technology: 4.1, 4.2, 4.3, 4.4, 4.5, 4.6</p> <p>Problem Solving &amp; Critical Thinking: 5.1, 5.2, 5.3, 5.4</p> <p>Leadership &amp; Teamwork: 9.3, 9.7</p> <p>Technical Knowledge &amp; Skills: 10.1, 10.2</p> <p>Demonstration &amp; Application: 11.1</p> <p><b>CTE Pathway:</b> C1.1, C1.3, C1.5, C2.4, C4.1, C4.2, C4.3, C4.4, C5.2, C5.3, C5.6</p>
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<p><b>D. RESOURCE MANAGEMENT REVIEW</b></p> <p>Understand, apply, and evaluate the resource management principles and techniques in the auto repair and maintenance field.</p> <p>(1 hour)</p>	<ol style="list-style-type: none"> <li>1. Review, define, describe, and research the benefits of the following to include identifying barriers for appropriate communication:             <ol style="list-style-type: none"> <li>a. resources</li> <li>b. management</li> <li>c. sustainability</li> <li>d. profitability</li> <li>e. company growth</li> </ol> </li> <li>2. Review and list specific examples of the effective management of the following resources in the auto shop repair and maintenance business:             <ol style="list-style-type: none"> <li>a. time</li> <li>b. materials</li> <li>c. personnel</li> <li>d. ethical business practices</li> <li>e. customer relations practices</li> </ol> </li> <li>3. Pass a resource management assessment with an 80% score or higher.</li> </ol>	<p><b>Career Ready Practice:</b> 1, 2, 4, 7, 8, 11</p> <p><b>CTE Anchor:</b> Academics: 1.0 Communications: 2.1, 2.2, 2.3, 2.5 Technology: 4.1, 4.2, 4.5 Responsibility &amp; Flexibility: 7.1, 7.6, 7.7 Ethics &amp; Legal Responsibilities: 8.1, 8.3 Technical Knowledge &amp; Skills: 10.1</p> <p><b>CTE Pathway:</b> C4.3, C5.3, C5.5, C5</p>
<p><b>E. SERVICE MANUALS AND COMPUTER-BASED INFORMATION SYSTEMS REVIEW</b></p> <p>Understand, apply, and evaluate the contents of service manuals and computer-based information systems as important sources of reference to an auto technician.</p>	<ol style="list-style-type: none"> <li>1. Form teams to identify the different types of service manuals.</li> <li>2. Review the different types of information that can be found in service manuals such as specifications, troubleshooting charts, and repair information.</li> <li>3. Review and demonstrate the use of service manuals.</li> <li>4. Review, demonstrate, and analyze the use of web-based search engines in finding automotive technical information to make informed decisions.</li> <li>5. Review and complete a work order to include customer information, vehicle identifying information, customer concern, related service history, cause, and correction.</li> <li>6. Explain the importance of documenting a customer's vehicle for bumper damage, and/or</li> </ol>	<p><b>Career Ready Practice:</b> 1, 2, 4, 5, 9, 10, 11</p> <p><b>CTE Anchor:</b> Academics: 1.0 Communications: 2.1, 2.3, 2.5 Technology: 4.1, 4.2, 4.3 Problem Solving &amp; Critical Thinking: 5.1, 5.2, 5.3, 5.4</p>

<p>(2 hours)</p>	<p>take pictures of vehicle, mileage, and any visible leaks prior to working on the vehicle.</p> <p>7. Pass a service manual and computer-based information system assessment with an 80% score or higher.</p>	<p>Leadership &amp; Teamwork: 9.3, 9.7</p> <p>Demonstration &amp; Application: 11.1</p> <p><b>CTE Pathway:</b> C2.6, C4.3, C4.4</p>
<p><b>F. PROGRAM ADMINISTRATION</b></p> <p>Describe and explain smog check requirements, inspections, laws, and regulations.</p> <p>(8 hours)</p>	<ol style="list-style-type: none"> <li>1. Describe expectations of a smog check licensee.</li> <li>2. Describe smog check for the following: <ol style="list-style-type: none"> <li>a. station requirements</li> <li>b. inspector requirements</li> <li>c. operation requirements</li> <li>d. technician requirements</li> </ol> </li> <li>3. Define and describe the provisions of the consumer assistance program.</li> <li>4. Describe and explain the repair cost labor requirements to include repair assistance and cost waivers.</li> <li>5. Discuss and explain the process of the work estimate with the Write it Right guidelines.</li> <li>6. Repair an invoice consistent with the Write it Right guidelines.</li> <li>7. Describe and explain sublet rules related to smog check inspection and its environmental impact on green technology.</li> <li>8. Form teams to research and identify vehicles subject to smog check inspection.</li> <li>9. Describe direct vehicle requirements.</li> <li>10. Describe smog check services provided by the State Referee.</li> <li>11. Form teams to research and identify vehicles required to be inspected by the State Referee.</li> <li>12. Describe the option of a smog check pre-inspection.</li> <li>13. Describe limits of repairs performed during smog check inspection.</li> <li>14. Describe the requirements of documenting a visible smoke test failure.</li> <li>15. Describe requirements of a vehicle inspection report.</li> <li>16. Describe the special circumstances that must be documented on the Vehicle Inspection Report (VIR).</li> <li>17. Pass a program administration assessment with an 80% score or higher.</li> </ol>	<p><b>Career Ready Practice:</b> 1, 2, 4, 5, 9, 11, 12</p> <p><b>CTE Anchor:</b></p> <p>Academics: 1.0</p> <p>Communications: 2.1, 2.3, 2.5</p> <p>Technology: 4.1, 4.2, 4.5</p> <p>Problem Solving &amp; Critical Thinking: 5.1</p> <p>Leadership &amp; Teamwork: 9.3, 9.7</p> <p>Technical Knowledge &amp; Skills: 10.1, 10.2</p> <p>Demonstration &amp; Application: 11.1</p> <p><b>CTE Pathway:</b> C1.3, C1.5, C2.6, C4.2, C4.3, C4.4, C5</p>

<p><b>G. CONSUMER AUTHORIZATION AND CONSULTATION</b></p> <p>Understand and apply the proper shop records, estimates, and invoices.</p> <p>(1 hour)</p>	<ol style="list-style-type: none"> <li>1. Prepare a work estimate consistent with the Write it Right guidelines.</li> <li>2. Explain the estimate process if the following items are required/not required:             <ol style="list-style-type: none"> <li>a. estimate</li> <li>b. sales tax</li> <li>c. toxic waste disposal costs</li> <li>d. labor rate</li> <li>e. shop supplies</li> <li>f. replaced parts returned to customer</li> <li>g. sublet repair responsibility</li> <li>h. smog check inspection and/or repairs be sublet</li> </ol> </li> <li>3. Explain and present the invoice sections in a transparent manner:             <ol style="list-style-type: none"> <li>a. date invoice provided</li> <li>b. invoice requirement</li> <li>c. warranty repair or no charge</li> <li>d. parts, labor, and repair written in plain English vs. industry terms</li> <li>e. registration numbers requirement</li> <li>f. lien sale if customer fails to pay the invoice</li> </ol> </li> <li>4. Explain the importance of maintenance of records (invoices, estimates) by an automotive repair dealer.</li> <li>5. Pass a consumer authorization and consultation assessment with an 80% score or higher.</li> </ol>	<p><b>Career Ready Practice:</b> 1, 2, 4</p> <p><b>CTE Anchor:</b> Academics: 1.0 Communications: 2.1, 2.3, 2.5 Technology: 4.1, 4.2 Technical Knowledge &amp; Skills: 10.1, 10.2</p> <p><b>CTE Pathway:</b> C2.6, C4.3, C4.4, C5 C5.2, C5.3, C5.5</p>
<p><b>H. VEHICLE IDENTIFICATION</b></p> <p>Understand and apply the process, procedures, and inspection of identifying vehicles.</p>	<ol style="list-style-type: none"> <li>1. Explain and describe which vehicles are affected by the smog program impacting green technology.</li> <li>2. Define and describe exempted and directed vehicles.</li> <li>3. Explain the difference between California vs. Federal certifications and/or inspections using the Emissions Control System label.</li> <li>4. Explain and demonstrate the inspection procedures for the following vehicles:             <ol style="list-style-type: none"> <li>a. specially constructed vehicles</li> <li>b. military personnel vehicles</li> <li>c. fleet vehicles</li> <li>d. hybrid vehicles</li> <li>e. diesel vehicles</li> </ol> </li> <li>5. Explain and demonstrate the procedure of entering data into the inspection system.</li> <li>6. Pass a vehicle identification assessment with an 80% score or higher.</li> </ol>	<p><b>Career Ready Practice:</b> 1, 2, 4, 9, 10, 12</p> <p><b>CTE Anchor:</b> Academics: 1.0 Communications: 2.1, 2.3, 2.5 Technology: 4.1, 4.2 Technical Knowledge &amp; Skills: 10.1, 10.2</p>



(4 hours)		<p>Demonstration &amp; Application: 11.1</p> <p><b>CTE Pathway:</b> C1.5, C2.6, C4.2, C4.3</p>
<p><b>I. CALIBRATION AND OPERATION OF INSPECTION EQUIPMENT AND DEVICES</b></p> <p>Understand calibration, maintenance, and operational procedure of inspection equipment and devices.</p>	<ol style="list-style-type: none"> <li>1. Explain and describe practices of proper equipment maintenance using reference manuals.</li> <li>2. Perform calibrations of the Emission Inspection System (EIS), including all sub system/equipment in accordance with the Safety Data Sheets.</li> <li>3. Form teams to perform two full calibrations to make informed decisions.</li> <li>4. Demonstrate knowledge and ability to inspect the EIS and replace maintenance items.</li> <li>5. Describe the prohibitions of test equipment modifications.</li> <li>6. Demonstrate knowledge and ability to verify operation of EIS and Onboard Inspection System (OIS) components including: <ol style="list-style-type: none"> <li>a. fuel cap pressure tester</li> <li>b. Low Pressure Evaporative Test (LPET)</li> <li>c. Revolutions Per Minute (RPM) pickup</li> <li>d. emissions sample hoses and probes</li> <li>e. data lines</li> <li>f. Onboard Diagnostics (OBD) connectors</li> <li>g. OIS Data Acquisition Device (DAD)</li> <li>h. other peripheral equipment</li> </ol> </li> <li>7. Pass a calibration and operation of inspection equipment and devices assessment with an 80% score or higher.</li> </ol>	<p><b>Career Ready Practice:</b> 1, 2, 4, 5, 9, 10</p> <p><b>CTE Anchor:</b></p> <p>Academics: 1.0</p> <p>Communications: 2.1, 2.3, 2.5</p> <p>Technology: 4.1, 4.2</p> <p>Problem Solving &amp; Critical Thinking: 5.1, 5.2, 5.3, 5.4</p> <p>Health &amp; Safety: 6.1</p> <p>Leadership &amp; Teamwork: 9.3, 9.7</p> <p>Technical Knowledge &amp; Skills: 10.1, 10.2</p> <p>Demonstration &amp; Application: 11.1</p> <p><b>CTE Pathway:</b> C1.2, C2.1, C2.2, C2.6 C2.7, C4.1, C4.2, C4.3, C5.2, C5.6</p>
(2 hours)		

<p><b>J. SMOG CHECK INSPECTION PROCEDURES</b></p> <p>Understand the proper procedures for conducting a complete smog check inspection.</p>	<ol style="list-style-type: none"> <li>1. Describe and research the general purpose, design, and operation of the following control systems: <ol style="list-style-type: none"> <li>a. crankcase controls</li> <li>b. Evaporative System</li> <li>c. Exhaust Gas Recirculation (EGR)/Variable Valve Timing (VVT)</li> <li>d. Thermostatic Air Cleaner (TAC)</li> <li>e. Air Injection (AIS)</li> <li>f. Ignition Spark Controls (SPK)</li> <li>g. Exhaust Gas After Treatment Systems: <ol style="list-style-type: none"> <li>i. Catalytic Converter (CAT)</li> <li>ii. Diesel Oxidation Catalyst (DOC)</li> <li>iii. Periodic Trap Oxidizer (PTOX)</li> <li>iv. Diesel Particulate Trap or Filter (DPF)</li> <li>v. Diesel Selective Catalyst Reduction (SCR)</li> </ol> </li> <li>h. other emission controls</li> </ol> </li> <li>2. Describe the visual inspection pass/fail criteria for OIS and BAR 97.</li> <li>3. Demonstrate ethical and legal practices consistent with workplace standards and BAR guidelines.</li> <li>4. Describe, research, and determine vehicle emissions certification type.</li> <li>5. Identify and record the required emission controls for at least three different vehicle makes, using Emission Control Systems (ECS) guides and emission control labels.</li> <li>6. Identify exhaust system components and distinguish between single and dual exhaust systems.</li> <li>7. Demonstrate the knowledge and ability to use electrical: <ol style="list-style-type: none"> <li>a. wiring diagrams applicable to smog check visual inspection</li> <li>b. component locator to find emission control components: OBD II DLC, EGR solenoid, EVAP purge solenoid, etc.</li> </ol> </li> <li>8. Describe the smog inspection requirements for aftermarket parts.</li> <li>9. Describe the California Air Resource Board (CARB) Executive Order Label requirements for aftermarket parts such as catalytic converters.</li> <li>10. Demonstrate the ability to check for CARB approval of aftermarket parts.</li> <li>11. Form teams and demonstrate and ability to perform the: <ol style="list-style-type: none"> <li>a. liquid fuel inspection</li> </ol> </li> </ol>	<p><b>Career Ready Practice:</b> 1, 2, 4, 5, 8, 9, 10, 11, 12</p> <p><b>CTE Anchor:</b> Academics: 1.0 Communications: 2.1, 2.3, 2.5 Technology: 4.1, 4.2, 4.3, 4.5, 4.6 Problem Solving &amp; Critical Thinking: 5.1, 5.2, 5.3, 5.4 Ethics &amp; Legal Responsibilities: 8.1, 8.2, 8.3, 8.4 Leadership &amp; Teamwork: 9.3, 9.7 Technical Knowledge &amp; Skills: 10.1, 10.2 Demonstration &amp; Application: 11.1</p> <p><b>CTE Pathway:</b> C1.5, C2.6, C4.3, C5. C5.4, C5.5</p>
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- b. gasoline vehicle visible smoke test
  - c. diesel visible smoke test
12. Form teams to identify:
    - a. and locate gasoline and diesel induction and fuel system components
    - b. engine management system components, actuators, sensors, and switches
  13. Form teams to demonstrate knowledge and ability to conduct a visual inspection of at least three different vehicle makes.
  14. Form teams to identify each required emission control system in its entirety (all components).
  15. Recognize and accurately enter/report the failure conditions to make informed decisions.
  16. Describe the conditions that must be met before beginning a smog check emission test.
  17. Demonstrate knowledge and ability to prepare a vehicle for an emission test, including safety, ventilation, and vehicle warm-up procedures.
  18. Describe the automated second chance test for vehicles that fail the two-speed idle test.
  19. Identify the types of vehicles that are incompatible with the Acceleration Simulation Mode (ASM) test.
  20. Describe the gear selection requirements for the ASM test.
  21. Describe emission test abort conditions.
  22. Demonstrate knowledge and ability to perform emissions tests including hybrid vehicles.
  23. Describe OBD II monitor enabling criteria, including the purpose of drive cycles.
  24. Identify vehicles subject to the OBD II functional test.
  25. Describe Smog Check OBD II monitor readiness requirements.
  26. Demonstrate knowledge and ability to locate and connect scan tools or OIS/EIS to the Diagnostic Link Connector (DLC) on at least three different vehicle makes.
  27. Describe the processes used to address vehicles with known OBD II test difficulties.
  28. Identify vehicles subject to the Malfunction Indicator Light (MIL) functional test.
  29. Describe the difference between an MIL and a maintenance reminder light.
  30. Describe and demonstrate knowledge and ability to conduct the MIL functional test on at least three different vehicle makes.

<p>(14 hours)</p>	<ol style="list-style-type: none"> <li>31. Identify the vehicles subject to ignition timing functional test, including exception for non-adjustment timing.</li> <li>32. Identify the manufacturer ignition timing specifications for at least three different vehicle makes.</li> <li>33. Use emission control labels, ECS guides or other reliable vehicle references.</li> <li>34. Describe the engine RPM requirements for the ignition timing functional test.</li> <li>35. Describe the pass/fail criteria for the ignition timing functional test.</li> <li>36. Check and record the ignition timing setting on at least three different vehicle makes.</li> <li>37. Identify a vehicle subject to the Exhaust Gas Recirculation (EGR) Test.</li> <li>38. Describe the general design strategies for various EGR systems (conventional, back pressure, electric/electronic controlled and actuated).</li> <li>39. Describe and demonstrate knowledge and ability to conduct the EGR functional test on at least three different vehicle makes.</li> <li>40. Identify vehicles subject to the Fuel Cap Integrity Test.</li> <li>41. Describe and demonstrate the knowledge and ability to control the Fuel Cap Integrity Test.</li> <li>42. Identify vehicles subject to the Low-Pressure Fuel Evaporative Test (LPFET).</li> <li>43. Describe and demonstrate the knowledge and ability to conduct the LPFET functional test on at least three different vehicle makes.</li> <li>44. Demonstrate knowledge and ability to upload data from the low-pressure fuel evaporative tester.</li> <li>45. Pass a smog check inspection procedures assessment with an 80% score or higher.</li> </ol>	
<p><b>K. SMOG CHECK INSPECTION RESULTS</b></p> <p>Understand and explain the Vehicle Inspection Report and discuss the types of results.</p>	<ol style="list-style-type: none"> <li>1. Discuss and explain the Vehicle Inspection Report (VIR) results in accordance with BAR guidelines.</li> <li>2. Discuss the types of results.</li> <li>3. Complete and document the findings on the work order in accordance with BAR guidelines.</li> <li>4. Pass a smog check inspection results assessment with an 80% score or higher.</li> </ol>	<p><b>Career Ready Practice:</b></p> <p>1, 2, 4</p> <p><b>CTE Anchor:</b></p> <p>Academics: 1.0</p> <p>Communications: 2.1, 2.3, 2.5</p>

(2 hours)		<p>Technology: 4.2</p> <p>Technical Knowledge &amp; Skills: 10.1, 10.2</p> <p><b>CTE Pathway:</b> C2.6, C4.3, C4.4, C5.2, C5.3</p>
<p><b>L. EMPLOYABILITY SKILLS AND RESUME PREPARATION REVIEW</b></p> <p>Understand, apply, and evaluate the desired employability skills and resume preparation for automotive technicians.</p>	<ol style="list-style-type: none"> <li>1. Review and define employer requirements for soft skills such as: <ol style="list-style-type: none"> <li>a. attitude toward work</li> <li>b. communication and collaboration</li> <li>c. critical thinking, problem solving, and decision-making</li> <li>d. customer service</li> <li>e. diversity in the workplace</li> <li>f. flexibility and adaptability</li> <li>g. interpersonal skills</li> <li>h. leadership and responsibility</li> <li>i. punctuality and attendance</li> <li>j. quality of work</li> <li>k. respect, cultural and diversity differences</li> <li>l. teamwork</li> <li>m. time management</li> <li>n. trust and ethical behavior</li> <li>o. work ethic</li> </ol> </li> <li>2. Review a career plan that reflects career interests, pathways, and post-secondary options.</li> <li>3. Revise a resume, cover letter and/or portfolio.</li> <li>4. Review, analyze, research, and review the role of online job searching platforms and career websites to make informed decisions.</li> <li>5. Review the importance of assessing social media account content for professionalism.</li> <li>6. Review and complete and/or review an on-line job application.</li> </ol>	<p><b>Career Ready Practice:</b> 1, 2, 3, 4, 5, 7, 8, 9, 10, 11</p> <p><b>CTE Anchor:</b> Academics: 1.0</p> <p>Communications: 2.1, 2.3, 2.4, 2.5</p> <p>Career Planning &amp; Management: 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.8, 3.9</p> <p>Technology: 4.1, 4.2, 4.3, 4.5</p> <p>Problem Solving &amp; Critical Thinking: 5.1, 5.4</p> <p>Responsibility &amp; Flexibility: 7.2, 7.3, 7.4, 7.7</p> <p>Ethics &amp; Legal Responsibilities: 8.3, 8.4, 8.5</p> <p>Leadership &amp; Teamwork: 9.1, 9.2, 9.3, 9.4, 9.6, 9.7</p>

<p>(4 hours)</p>	<ol style="list-style-type: none"> <li>7. Review and demonstrate interview skills to get the job: <ol style="list-style-type: none"> <li>a. do's and don'ts for job interviews</li> <li>b. how to dress for the job</li> </ol> </li> <li>8. Revise sample follow-up letters.</li> <li>9. Review the importance of the continuous upgrading of job skills as it relates to: <ol style="list-style-type: none"> <li>a. certification, licensure, and/or renewal</li> <li>b. professional organizations/events</li> <li>c. industry associations and/or organized labor</li> </ol> </li> </ol>	<p>Technical Knowledge &amp; Skills: 10.1, 10.3</p> <p>Demonstration &amp; Application: 11.1, 11.2, 11.5</p> <p><b>CTE Pathway:</b> C5.4, C5.5</p>
<p><b>M. ENTREPRENEURIAL SKILLS</b></p> <p>Understand, apply, and evaluate the process involved in becoming an entrepreneur in the automotive industry.</p> <p>(4 hours)</p>	<ol style="list-style-type: none"> <li>1. Define entrepreneurship.</li> <li>2. Identify and research the necessary characteristics of successful entrepreneurs.</li> <li>3. Examine personal goals prior to starting a business.</li> <li>4. Evaluate sources of monetary investment in a business opportunity.</li> <li>5. Explain licensing/permit requirements for a business.</li> <li>6. Explain how the Small Business Administration (SBA) assists entrepreneurs with lenders and funding to help them plan, start and grow a business.</li> <li>7. Demonstrate a budget to identify start-up expenses.</li> <li>8. Pass an entrepreneurial skills assessment with an 80% score or higher.</li> </ol>	<p><b>Career Ready Practice:</b> 1, 2, 4, 10, 11</p> <p><b>CTE Anchor:</b></p> <p>Academics: 1.0</p> <p>Communications: 2.1, 2.3, 2.5</p> <p>Technology: 4.1, 4.2, 4.5</p> <p>Responsibility &amp; Flexibility: 7.1, 7.6</p> <p>Technical Knowledge &amp; Skills: 10.1, 10.3, 10.4</p> <p>Demonstration &amp; Application: 11.1, 11.2, 11.3, 11.4,</p> <p><b>CTE Pathway:</b> C5.1, C5.2, C5.3, C5.</p>
<p><b>N. FINAL EXAMINATION</b></p> <p>Understand hands-on competencies and pass a mandatory written exam.</p>	<ol style="list-style-type: none"> <li>1. Pass a mandatory written examination with a 70% score or higher.</li> <li>2. Participate in a team to pass the mandatory hands-on competency assessments.</li> <li>3. Participate in a team to perform and pass at least four complete Smog Check Inspections using</li> </ol>	<p><b>Career Ready Practice:</b> 1, 2, 4, 5, 8, 9</p> <p><b>CTE Anchor:</b></p>

(4 hours)	reference materials in accordance with OIS and BAR 97 EIS.	<p>Academics: 1.0</p> <p>Communications: 2.1, 2.3, 2.5</p> <p>Technology: 4.1, 4.2</p> <p>Problem Solving &amp; Critical Thinking: 5.1, 5.2, 5.3, 5.4</p> <p>Ethics &amp; Legal Responsibilities: 8.2, 8.3, 8.4, 8.7</p> <p>Leadership &amp; Teamwork: 9.7</p> <p>Technical Knowledge &amp; Skills: 10.2</p> <p><b>CTE Pathway:</b> C2.6, C4.3, C5.1, C5.2</p>
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## ***ACKNOWLEDGEMENTS***

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