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SCHOOL

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Inspection Date

# Level I

  

# Student Outcomes

# Automotive Technician Training Standards

## Level I

### Automotive Technology Fundamentals

All Student Outcomes must be documented.

The term LECTURE can be documented by either a class outline or instructors' notes, a work sheet or test questions.

The term DEMO can be documented by the performance of a skill set by the instructor in front of the class or by student performing the skill set.

The term SHOP can be documented by observing the student completing the required skill set or reviewing the student competency skills worksheets.

**Note:** All procedures listed in this document are to be performed in accordance with industry-accepted practices and/or manufacturers' recommended procedures.

**Note:** No Evidence = 0, Some Evidence = 1, Meets Standards = 2

SCORE			I.D.
0	1	2	NO.

				BASIC LAB PROCEDURES
				<b>LECTURE:</b> Either a class outline or instructors' notes, a work sheet or test questions.
			<b>1</b>	Select the correct driver for a given fastener.
			<b>2</b>	Select the proper punch or chisel for the specific application.
				<b>DEMO:</b> Performance of a skill set by the instructor in front of the class or by student performing the skill set.
			<b>3</b>	Remove a broken fastener.
			<b>4</b>	Install a heli-coil or other thread repair.
				<b>SHOP:</b> The student will complete the skill set.
			<b>5</b>	Identify measuring instruments.

			<b>6</b>	Measure to nearest 1/32" using a rule or measuring tape.
			<b>7</b>	Measure a gap using a feeler gauge.
			<b>8</b>	Measure with a Vernier or dial caliper.
			<b>9</b>	Measure with a micrometer.
			<b>10</b>	Convert between metric and inch measuring system.
			<b>11</b>	Identify fastener specifications.
			<b>12</b>	Tighten fastener to specifications.
			<b>13</b>	Drill and tap a hole.
			<b>14</b>	Use a tap and a die to chase and clean threads.
			<b>15</b>	Identify basic hand tools and lab equipment.
			<b>16</b>	Raise a vehicle using a frame contact lift following industry standards and manufactures recommended procedures.
				<b>SAFETY</b>
				<b>LECTURE:</b> Either a class outline or instructors' notes, a work sheet or test questions.
			<b>17</b>	Demonstrate proper hazardous material handling, storage and disposal procedures.
			<b>18</b>	Demonstrate proper fire extinguisher use.
			<b>19</b>	Discuss the importance of and proper use of Personnel Protective Equipment (PPE)
				<b>SERVICE INFORMATION</b>
				<b>LECTURE:</b> Either a class outline or instructors' notes, a work sheet or test questions.
			<b>20</b>	Locate information in a vehicle owner's manual

			<b>21</b>	Locate information in a Service and Repair Information Manual or System
			<b>22</b>	Read and explain a vehicle identification number (VIN)
			<b>23</b>	Read and explain an under hood label
			<b>24</b>	Locate service and information and specifications using a service manual and service information software.
				<b>OIL CHANGE SERVICE</b>
				<b>SHOP:</b> The student will complete the skill set.
			<b>25</b>	Check engine oil level
			<b>26</b>	Change oil
			<b>27</b>	Change oil filter
			<b>28</b>	Reset oil maintenance reminder light
				<b>UNDER HOOD INSPECTION</b>
				<b>SHOP:</b> The student will complete the skill set.
			<b>29</b>	Check fluid levels and determine appropriate action
			<b>30</b>	Inspect hoses
			<b>31</b>	Inspect accessory drive belts
			<b>32</b>	Visually inspect a battery
			<b>33</b>	Inspect operation of the lighting system
			<b>34</b>	Inspect and replace a windshield wiper blade
				<b>UNDER VEHICLE INSPECTION</b>
				<b>SHOP:</b> The student will complete the skill set.

			<b>35</b>	Inspect an exhaust system
			<b>36</b>	Inspect suspension and steering linkage
			<b>37</b>	Inspect gear case fluid levels
			<b>38</b>	Complete lubrication, maintenance & inspection (LOF)
				<b>BELTS, HOSES &amp; TUBING</b>
				<b>DEMO:</b> Performance of a skill set by the instructor in front of the class or by student performing the skill set.
			<b>39</b>	Replace a cooling system hose
				<b>SHOP:</b> The student will complete the skill set.
			<b>40</b>	Inspect, replace and adjust an accessory drive belt
				<b>ENGINE TESTING AND REPAIR</b>
				<b>LECTURE:</b> Either a class outline or instructors' notes, a work sheet or test questions.
			<b>41</b>	Identify various cylinder head classifications (OHC/pushrod, etc)
			<b>42</b>	Identify various engine cylinder arrangements, engine sizes and measurements
				<b>DEMO:</b> Performance of a skill set by the instructor in front of the class or by student performing the skill set.
			<b>43</b>	Check engine oil pressure using a mechanical gauge
			<b>44</b>	Replace an engine cover gasket
				<b>SHOP:</b> The student will complete the skill set.
			<b>45</b>	Describe four stroke cycle and cam timing
			<b>46</b>	Identify basic engine parts
				<b>ENGINE PERFORMANCE/TUNE-UP SERVICE</b>
				<b>LECTURE:</b> Either a class outline or instructors' notes, a work sheet or test questions.

			<b>47</b>	Describe ignition system operation
			<b>48</b>	Describe use of scan tools to retrieve engine data and diagnostic trouble codes (DTCs)
				<b>SHOP:</b> The student will complete the skill set.
			<b>49</b>	Connect OBD II scan tool and retrieve DCTs, view data stream and clear codes
			<b>50</b>	Identify ignition system components
			<b>51</b>	Identify cylinders by number and determine firing order
			<b>52</b>	Remove, inspect, and install spark plugs following manufacturer specifications
			<b>53</b>	Inspect, test and replace spark plug cables
			<b>54</b>	Remove and replace a distributor cap and rotor
			<b>55</b>	Check and adjust ignition base timing to manufacturer specifications
			<b>56</b>	Measure engine vacuum
			<b>57</b>	Perform a cranking compression test
				<b>COOLING SYSTEM SERVICE</b>
				<b>LECTURE:</b> Either a class outline or instructors' notes, a work sheet or test questions.
			<b>58</b>	Describe radiator pressure cap operation
			<b>59</b>	Describe thermostat operation
				<b>DEMO:</b> Performance of a skill set by the instructor in front of the class or by student performing the skill set.
			<b>60</b>	Remove and replace a thermostat
			<b>61</b>	Drain, refill and bleed a cooling system

			<b>62</b>	Check electrical fan operation
				<b>SHOP:</b> The student will complete the skill set.
			<b>63</b>	Perform a cooling system inspection
			<b>64</b>	Pressure test a radiator cap
			<b>65</b>	Identify cooling system parts
			<b>66</b>	Pressure test a cooling system
			<b>67</b>	Check the condition of the coolant
				<b>FUEL AND EMISSION SERVICE</b>
				<b>DEMO:</b> Performance of a skill set by the instructor in front of the class or by student performing the skill set.
			<b>68</b>	Remove and replace a fuel injection system fuel filter
			<b>69</b>	Perform a fuel injection system pressure check
				<b>SHOP:</b> The student will complete the skill set.
			<b>70</b>	Identify fuel system components
			<b>71</b>	Identify exhaust system components
			<b>72</b>	Look-up required emission system components and identify them on a vehicle
			<b>73</b>	Inspect a PCV system and check for operation
			<b>74</b>	Remove, inspect and replace an air filter element
			<b>75</b>	Inspect vacuum hose condition
			<b>76</b>	Identify air injection system components

			<b>77</b>	Locate and identify an EVAP canister
			<b>78</b>	Locate and inspect a catalytic convertor
				<b>GENERAL ELECTRICAL SERVICE</b>
				<b>LECTURE:</b> Either a class outline or instructors' notes, a work sheet or test questions.
			<b>79</b>	Demonstrate familiarity with basic electrical theory and terms
			<b>80</b>	Identify starting system components
			<b>81</b>	Identify charging system components
			<b>82</b>	Describe a battery specific gravity test
				<b>SHOP:</b> The student will complete the skill set.
			<b>83</b>	Inspect and test fuses
			<b>84</b>	Splice a wire with a crimp connector
			<b>85</b>	Solder a wire connection
			<b>86</b>	Replace a tail/brake light bulb
			<b>87</b>	Identify a turn signal flasher
			<b>88</b>	Locate a given point in a vehicle wiring system using an electrical wiring diagram
				<b>BATTERY SERVICE</b>
				<b>SHOP:</b> The student will complete the skill set.
			<b>89</b>	Battery service (clean terminals/check electrolyte level)
			<b>90</b>	Replace a battery cable
			<b>91</b>	Perform a battery open circuit voltage test



			<b>92</b>	Perform a regulated voltage check
			<b>93</b>	Perform a battery charge
			<b>94</b>	Perform a battery jump start
			<b>95</b>	Perform a battery capacity/load test with a battery tester
			<b>96</b>	Perform a battery cranking voltage test
				<b>TIRE AND WHEEL SERVICE</b>
				<b>DEMO:</b> Performance of a skill set by the instructor in front of the class or by student performing the skill set.
			<b>97</b>	Replace a rubber valve stem
			<b>98</b>	Repair a tire puncture following industry-approved procedure
				<b>SHOP:</b> The student will complete the skill set.
			<b>99</b>	Perform a tire inspection and identify causes of wear
			<b>100</b>	Find a tire label and explain what it means
			<b>101</b>	Adjust tire pressure
			<b>102</b>	Dismount and mount a tire using a tire changer
			<b>103</b>	Computer balance a tire
			<b>104</b>	Rotate tires
			<b>105</b>	Torque lug nuts using the correct sequence and torque specification
				<b>BRAKE AND WHEEL BEARING SERVICE</b>
				<b>SHOP:</b> The student will complete the skill set.
			<b>106</b>	Identify brake system components

			<b>107</b>	Manually bleed brakes
			<b>108</b>	Remove a brake drum
			<b>109</b>	Use asbestos containment procedure
			<b>110</b>	Inspect drum brakes
			<b>111</b>	Inspect disc brakes
			<b>112</b>	Perform a parking brake adjustment
			<b>113</b>	Repack and adjust a tapered roller wheel bearing
				<b>SUSPENSION, STEERING &amp; ALIGNMENT SERVICE</b>
				<b>LECTURE:</b> Either a class outline or instructors' notes, a work sheet or test questions.
			<b>114</b>	Identify steering and suspension component
			<b>115</b>	Identify wheel alignment angles
				<b>DEMO:</b> Performance of a skill set by the instructor in front of the class or by student performing the skill set.
			<b>116</b>	Visually inspect steering and suspension system for damage and wear
				<b>SHOP:</b> The student will complete the skill set.
			<b>117</b>	Identify suspension components and types
			<b>118</b>	Identify steering components and types
			<b>119</b>	Replace shock absorbers

**SCORING TOTALS**

Total 0's = \_\_\_\_\_

Total 1's = \_\_\_\_\_

Total 2's = \_\_\_\_\_

Multiply the 1's X 1 = \_\_\_\_\_ 2's X 2 = \_\_\_\_\_

Add the results to determine the TOTAL SCORE \_\_\_\_\_