



Republic of the Philippines
DEPARTMENT OF EDUCATION



K to 12 BASIC EDUCATION CURRICULUM

TECHNOLOGY AND LIVELIHOOD EDUCATION

CURRICULUM GUIDE

Exploratory Course on

AUTOMOTIVE SERVICING

K to 12 TECHNOLOGY AND LIVELIHOOD EDUCATION

**INDUSTRIAL ARTS – AUTOMOTIVE SERVICING
(Exploratory)**

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Curriculum Guide for the Exploratory Course on Automotive Servicing

For you to get a complete picture of the complete TLE exploratory course on Automotive Servicing, you are hereby provided with the Curriculum Guide on Automotive Servicing.

Content Standard	Performance Standard	Learning Competencies	Project/ Activities	Assessment	Duration
LESSON 1: USE HAND TOOLS					
<p><i>Demonstrate understanding of/on:</i></p> <ul style="list-style-type: none"> • Plan and prepare for task to be undertaken • Prepare the following: <ul style="list-style-type: none"> • Place • Materials • Waste Disposal • Tools/Equipment • Safety • Service Procedures/Task 	<ol style="list-style-type: none"> 1. Tasks to be undertaken are properly identified. 2. Appropriate handtools are identified 3. Hand tools are selected according to task requirements. 	LO1. Plan and prepare for tasks to be undertaken	<ol style="list-style-type: none"> 1. Prepare plan and organize tasks to be undertaken in selecting tools. 2. Classify tools according to use. <ol style="list-style-type: none"> a. cutting b. bending/holding c. driving d. marking e. measuring f. tightening / loosening 	<ul style="list-style-type: none"> • Written test • Performance test 	2.5 hours
<ul style="list-style-type: none"> • Prepare and use hand tools • Operation of Hand Tools 	<ol style="list-style-type: none"> 1. Appropriate hand tools are checked for 	LO2. Prepare and use hand tools	<ol style="list-style-type: none"> 1. Utilizing appropriate hand tools <ol style="list-style-type: none"> a. Loosening and 	<ul style="list-style-type: none"> • Written test • Performance test 	3.0 hours

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<ul style="list-style-type: none"> • Classification of Hand Tools • Observing safety requirements/ procedure in using hand tools • Common faults of hand tools 	<p>proper operation and safety.</p> <p>2. Unsafe or faulty tools are identified.</p> <p>3. All tools are marked for repair according to standard company procedures.</p>		<p>tightening bolts /screws and nuts.</p> <p>2. Inspecting and testing functionality of tools for repair and recycling in preparation for its usability.</p>		
<ul style="list-style-type: none"> • Preparing report on malfunctions of hand tools in unplanned or unusual events • Sample Inventory of Tools • Sample Account of Condition of Tools 	<p>1. Malfunction of hand tools in unplanned or unusual events are reported.</p>	LO3. Prepare a report of malfunctioning hand tools equipment.	<p>1. Conduct an inventory and prepare a report of good and damaged tools in unplanned or unusual events.</p>	<ul style="list-style-type: none"> • Written test • Performance test 	2.0 hours
<ul style="list-style-type: none"> • Applying standard operational procedures, principles and techniques in maintaining hand tools • Operational procedure in tools and equipment 	<p>1. Routine maintenance of tools are undertaken according to standard operational procedures, principles, and</p>	LO4. Maintain hand tools.	<p>1. Select, arrange, and maintain hand tools</p> <p>2. Perform operational standard procedures, principles, and techniques in</p>	<ul style="list-style-type: none"> • Written test • Performance test 	2.5 hours

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maintenance	techniques. 2. Tools are stored safely in appropriate locations in accordance with manufacturer’s specifications or standard operating procedures.		maintaining tools		
LESSON 2: PERFORM MENSURATION AND CALCULATION					
<i>Demonstrate understanding of/on:</i> <ul style="list-style-type: none"> Types of measuring instruments and applications Techniques in measuring and determining tolerance/allowance of parts/components Methods of calculation/conversion of units of measurement 	1. Objects or components to be measured are identified. 2. Appropriate measuring tool/ instrument is selected as per job requirement. 3. Calculations needed to complete work/task are performed and checked using the fundamental operations of	LO1. Select measuring instrument and carry out measurement and calculations.	1. Selecting and utilizing measuring tools according to required tasks <ul style="list-style-type: none"> a. feeler gauge b. torque wrench c. calipers d. industrial thermometer 2. Applying specifications to bolts and nuts. 3. Converting the following:	<ul style="list-style-type: none"> Written and oral test Performance test 	3.0hours

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	mathematics.		Metric system to English system and vice-versa - linear measurement - liquid capacity - thermal measurement.		
<ul style="list-style-type: none"> Safe handling procedures, and care of measuring instruments 	<ol style="list-style-type: none"> Measuring instruments are calibrated, safely handled, and cleaned before and after using in accordance with industry standards. Measuring instruments are kept in safe, dry place. Proper techniques in using precise instruments are performed according to manufacturer's standards. 	LO2. Maintain measuring instruments.	<ol style="list-style-type: none"> Cleaning and maintaining measuring tools. Calibrating and storing precision instruments in convenient and safe place. 	<ul style="list-style-type: none"> Written test Performance test 	2.5 hours

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LESSON 3: INTERPRET PLANS AND DRAWINGS					
<p><i>Demonstrate understanding of/on:</i></p> <ul style="list-style-type: none"> • Analyze signs ,symbols and Data • Basic Sign Category • Identifying symbols used in plans and drawings • Identifying units of measurements • Dashboard Symbols 	<ol style="list-style-type: none"> 1. Signs, symbols, and data are identified according to job specifications. 2. Sign, symbols, data, and abbreviations are determined according to classification or appropriateness in drawings. 	<p>LO1. Analyze signs, symbols and data.</p>	<ol style="list-style-type: none"> 1. Draw and examine traffic signs and symbols 2. Drawing ,sketching and labeling pictorial of engine parts. 	<ul style="list-style-type: none"> • Written test • Performance test 	<p>2.5 hours</p>
<ul style="list-style-type: none"> • Diagrams,plans and drawing • Common electrical symbols • Technical plans and Schematic Diagram 	<ol style="list-style-type: none"> 1. Necessary tools, materials, and equipment are identified according to the plan. 2. Components, assemblies, or objects are recognized. 3. Dimensions and specifications are identified according to job requirements. 	<p>LO2. Interpret technical drawings and plans.</p>	<ol style="list-style-type: none"> 1. Differentiate automotive diagrams and plans 2. Identifying different electrical symbols 3. Drawing and labeling electrical symbols/circuit diagram. 	<ul style="list-style-type: none"> • Written test • Performance test 	<p>2.5 hours</p>

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LESSON 4: PERFORMINGSHOP MAINTENANCE					
<p><i>Demonstrate understanding of/on:</i></p> <ul style="list-style-type: none"> • Workshop policies and service procedures • General requirements of Safety in Workshop Policy • Standard Safe Handling of Tools, Materials and Equipment • Types and usage of cleaning chemicals 	<ol style="list-style-type: none"> 1. Tools, equipment, and work area are inspected and cleaned free from dust, grease, and other substances. 2. Cleaning solvent used as per workshop cleaning requirements is observed. 3. Work area is checked and cleaned. 	<p>LO1. Inspect/clean tools and shop equipment.</p>	<ol style="list-style-type: none"> 1. Inspecting and evaluating the existing condition of tools, equipment, and work area. 	<ul style="list-style-type: none"> • Written test • Performance test 	<p>2.5 hours</p>
<ul style="list-style-type: none"> • Personal safety and labeling procedures and techniques • Principles of total quality management (TQM) and 5S 	<ol style="list-style-type: none"> 1. Corresponding labels for containers and waste materials are posted and made visible. 2. Tools quality management is followed. 	<p>LO2. Store/arrange tools and shop equipment</p>	<ol style="list-style-type: none"> 1. Arranging, labeling and securing tools and equipment. 2. Performs 5S in workplace. 	<ul style="list-style-type: none"> • Written test • Performance test 	<p>3.0hours</p>
<ul style="list-style-type: none"> • Waste management <ul style="list-style-type: none"> ○ Cleaning chemicals / materials • Effects of automotive 	<ol style="list-style-type: none"> 1. Waste and used materials are disposed in accordance with the standard operational 	<p>LO3. Dispose waste/used lubricants</p>	<ol style="list-style-type: none"> 1. Surfing internet on Environment Protection Policies. 	<ul style="list-style-type: none"> • Written test • Performance test 	<p>3.0 hours</p>

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wastes on men and the environment	procedures and environmental regulations. 2. Personal safety in disposing waste and used materials are observed.				
LESSON 5: PRACTICING OCCUPATIONAL HEALTH AND SAFETY PROCEDURES					
<i>Demonstrate understanding of/on:</i>					
<ul style="list-style-type: none"> Hazards and risks identification and control Organizational safety and health protocol 	<ol style="list-style-type: none"> Workplace hazards and risks are identified and clearly explained. Hazards/risks and their corresponding indicators are identified in accordance with the company procedures. Contingency measures are recognized and established in accordance with organizational procedures. 	LO1. Identify hazards and risks	<ol style="list-style-type: none"> Preparing workplace in good and orderly condition Making contingency measures in line with standard organizational procedures 	<ul style="list-style-type: none"> Written test Performance test 	3.0hours
<ul style="list-style-type: none"> Effects of hazards in the workplace Ergonomics Some hazardous 	<ol style="list-style-type: none"> Effects of hazards are determined. OHS /ECC issues and concerns are identified 	LO2. Evaluate hazards and risks	<ol style="list-style-type: none"> Listing down problems and make necessary solutions to hazardous and 	<ul style="list-style-type: none"> Written test 	2.5 hours

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<p>substance that causes local and systemic effect.</p>	<p>in accordance with workplace requirements and legislation. 3. OHS procedures for controlling hazards and risk are strictly followed. 4. OHS personal records are filled up in accordance with workplace requirements. 5. Design of facilities/fixtures in human facilities is recognized</p>		<p>risky workplace condition 2. Reporting the following: a. common accidents in the workplace b. standard size of tables, space of work area c. human convenience to workplace physical design of shop facilities/fixture.</p>		
<ul style="list-style-type: none"> • Procedures involve in the control of hazards and risks • Hierarchy of control 	<ol style="list-style-type: none"> 1. Procedures in dealing with workplace accidents, fire and emergencies and provision of appropriate assistance in the workplace emergencies are identified and followed in accordance with the organization's OHS policies. 2. Personal Protective Equipment (PPE) is correctly used and 	<p>LO3. Control Hazards and Risk</p>	<ol style="list-style-type: none"> 1. Conducting inventory and using of: <ol style="list-style-type: none"> a. PPE b. fire fighting equipment c. emergency/ first aid kit/ materials d. waste disposal bin. 2. Video presentation on Disaster Risk Reduction Program. 3. Conducting DRRP 	<ul style="list-style-type: none"> • Written test • Performance test • Evaluation report on DRRP drills 	<p>2.5 hours</p>

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	maintained in accordance with the organizations OHS procedures and practices.		drills.		
<ul style="list-style-type: none"> Guidelines in maintaining occupational safety and health AWARENESS Emergency-related drills and training 	<ol style="list-style-type: none"> Procedures in emergency-related drills are strictly followed in line with the established organization guidelines and procedures. OHS personal records are filled up in accordance with workplace requirements. PPE is maintained in line with organization guidelines and procedures. 	LO4. Maintain occupational health and safety awareness	<ol style="list-style-type: none"> Conducting OHS awareness. Simulating OHS practices. 	<ul style="list-style-type: none"> Written test Performance test 	2.5 hours
					40 hours

“By three methods we may learn wisdom: First, by reflection, which is noblest; second, by imitation, which is easiest; and third by experience, which is the bitterest.”

- Confucius