



Republic of the Philippines

Department of Education

DepEd Complex, Meralco Avenue, Pasig City

STRENGTHENED SENIOR HIGH SCHOOL CURRICULUM

DRIVING AND AUTOMOTIVE SERVICING

Grade 11/12

Course Description:

This course equips learners with essential skills for driving and automotive service. It covers light vehicle driving and fundamental services in the automotive industry, which aims to drive a light vehicle and perform basic services in automotive following industry standards. Upon completion, learners are eligible to take assessments to earn National Certificate level I in Automotive Servicing and/or level II in Driving, higher education, and careers related to the automotive industry sector.

Elective: Technical Professional

Prerequisite: None

Time Allotment: In Grade 11, 320 hours for two semesters, 8 hours per week. In Grade 12, 320 hours for one semester, 16 hours per week

Schedule: First/Second Semester

QUARTER 1

CONTENT STANDARD	The learners demonstrate an understanding of the concepts and principles of driving a light vehicle.	
PERFORMANCE STANDARD	The learners perform procedures for moving and positioning vehicles, operating vehicle lifting and support equipment, and driving light vehicles, employing appropriate safety precautions.	
	LEARNING COMPETENCIES	CONTENT
	1. Discuss the overview of driving vehicles	Overview of driving vehicles <ul style="list-style-type: none"> • Career and Business Opportunities • Traffic Law Enforcers/Offices <ul style="list-style-type: none"> ○ National ○ Local Government Unit • License Acquisition and Registration Requirements <ul style="list-style-type: none"> ○ Driver (Republic Act 10930) ○ Vehicles
	2. Identify traffic laws/rules and regulations	Traffic laws/rules and regulations <ul style="list-style-type: none"> • Enforcement of traffic laws and regulations <ul style="list-style-type: none"> ○ National (Republic Act 4136) ○ International • Traffic signs and road markers

<p>3. Identify appropriate responses to road emergencies</p>	<p>Road emergencies and their responses</p> <ul style="list-style-type: none"> • Types of emergencies • Road emergency responses
<p>4. Demonstrate the role of service personnel in moving and positioning light vehicles</p>	<p>Moving and positioning light vehicle</p> <ul style="list-style-type: none"> • Role of service personnel as: <ul style="list-style-type: none"> ○ Driver <ul style="list-style-type: none"> - Defensive driving - Proper behaviors/discipline ○ Technicians • Receiving procedures <ul style="list-style-type: none"> ○ Work Bay facilities ○ Documentation and Service records • Procedure for parking the vehicle • Procedure in positioning the vehicle
<p>5. Identify the type of vehicle and the appropriate maintenance according to specifications and power source</p>	<p>Vehicle Specification</p> <ul style="list-style-type: none"> • Vehicle type and its specifications <ul style="list-style-type: none"> ○ Class 1 – (Sedan, Coupes, Hatchback, Small SUVs and AUVs, Van below 2286 mm in height, and Motorcycle above 400cc) ○ Class 2 – (Light Trucks, Buses, SUVs, and Pickups with trailers attached, and Van exceeding 2286 mm in height) ○ Class 3 – (Dump Trucks, 10-wheel Wing Vans, Tanker Trucks, and Large Trucks with trailers) • Types of vehicles according to power source <ul style="list-style-type: none"> ○ Fuel <ul style="list-style-type: none"> ➤ Diesel ➤ Gasoline/Petrol ➤ Liquefied Petroleum Gas (LPG) ○ Electric Power

6. Perform the procedures of operating vehicle lifting and support equipment in servicing vehicles	<p>Vehicle Lifting and Support Equipment</p> <ul style="list-style-type: none"> • Types, classifications, and maintenance of vehicle lifting and support equipment • Vehicle lifting and support equipment operations
7. Perform driving procedures for light vehicles	<p>Light vehicle driving procedures</p> <ul style="list-style-type: none"> • Pre-driving operations <ul style="list-style-type: none"> ○ Clean vehicle unit ○ BLOWBAGETS - Battery, Lights, Oil, Water, Brake, Air, Gas, Engine, Tire, and Self/Safety ○ Cockpit Drill (D.S.S.S.M.) - Doors, Seats, Steering wheel, Seat Belt Mirrors • Pre-start and warm-up • Driving a light vehicle <ul style="list-style-type: none"> ○ Manual Transmission ○ Automatic Transmission

QUARTER 2

CONTENT STANDARD	The learners demonstrate an understanding of the concepts and principles of pre-delivery inspection (PDI) in automotive servicing.	
PERFORMANCE STANDARD	The learners perform procedures of pre-delivery inspection in automotive servicing employing appropriate safety precautions.	
LEARNING COMPETENCIES		CONTENT
1. Discuss the pre-delivery inspection (PDI) in automotive servicing	1. Discuss the pre-delivery inspection (PDI) in automotive servicing	<p>Pre-Delivery Inspection (PDI) in Automotive Servicing</p> <ul style="list-style-type: none"> • Principles, Importance, and Function of PDI in Automotive Servicing • Career and business opportunities • Emerging trends and advanced technology
2. Identify required items for pre-delivery inspection (PDI) service	2. Identify required items for pre-delivery inspection (PDI) service	<p>Pre-Delivery Inspection (PDI) Required Items</p> <ul style="list-style-type: none"> • Tools, Materials, and Equipment

	<ul style="list-style-type: none"> • Inspection Checklist • Manufacturers Guidelines • Factory Loaded Parts <ul style="list-style-type: none"> ○ Wheel Caps ○ Wheel Covers ○ Spare Wheel ○ Tow Hook ○ Tool Kit ○ Early Warning Device ○ Owner's Handbook/User's Manual ○ Spare Key ○ Floor Mats ○ Jack Set
<p>3. Perform the pre-delivery inspection procedures</p>	<p>Pre-Delivery Inspection Procedures</p> <ul style="list-style-type: none"> • Preparation of Required Items • Exterior and Interior Checking • Inspection of Electrical Components, Fluid Level, Leaks, Brake System, Tire and Wheel Condition, Vehicle Performance, and Minor Defects/Scratches/Dents • Top-up Oil/Fluid <ul style="list-style-type: none"> ○ engine oil ○ automatic and/or manual transmission oil ○ brake fluid ○ coolant oil • Complete Documentation

QUARTER 3

CONTENT STANDARD	The learners demonstrate an understanding of the concepts and principles of periodic maintenance services (PMS) for vehicle component parts (engine) in automotive servicing.
PERFORMANCE STANDARD	The learners perform procedures of periodic maintenance services (PMS) for vehicle component parts (engine) in automotive servicing, employing appropriate safety precautions.
LEARNING COMPETENCIES	CONTENT
1. Discuss the periodic maintenance services (PMS) for vehicle component parts (engine)	Periodic Maintenance Services (PMS) for Vehicle Component Part (Engine) <ul style="list-style-type: none"> • Operating principle of Automotive Engine • Importance of PMS • Scheduled Service Intervals and Manufacturer Recommendations
2. Explore career and business opportunities for periodic maintenance services	Career and business opportunities for PMS
3. Discuss the latest trends and advanced technology for PMS	Emerging trends and advanced technology of PMS
4. Identify required items for PMS of vehicle component parts (engine)	Periodic Maintenance Service Required Items <ul style="list-style-type: none"> • job/repair order • service manuals • tools, materials, and equipment • consumables • Car protective equipment (CPE)- all UCs and 3 Qualifications <ul style="list-style-type: none"> ○ Steering wheel cover ○ Fender cover ○ Shift knob cover ○ Floor mat ○ Seat cover
5. Perform the procedure of periodic maintenance servicing for vehicle component parts (engine)	Periodic Maintenance Servicing Procedures <ul style="list-style-type: none"> • Troubles, Causes, Diagnosis, and Repair • Required Items Preparations

	<ul style="list-style-type: none"> • Diagnose, Change/Add-up, Replace, and/or Adjust based on standard procedures • PMS Procedures for the Component Parts (Engine) • Post Work Processes • Complete Documentation • Schedule Guidelines
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QUARTER 4

CONTENT STANDARD	The learners demonstrate an understanding of the concepts of automotive periodic maintenance services (PMS) for the vehicle's component parts (drive train, brake system, suspension system, and steering system).	
PERFORMANCE STANDARD	The learners perform automotive periodic maintenance services (PMS) for the vehicle component parts (drive train, brake system, suspension system, and steering system) by employing appropriate safety precautions and conduct vehicle release and service cost calculations.	
LEARNING COMPETENCIES	CONTENT	
1. Explain the operating principles of vehicle components parts	Operating Principles of Vehicle Component Parts <ul style="list-style-type: none"> • Drive Train • Brake System • Suspension System • Steering System 	
2. Discuss the periodic maintenance services (PMS) for the vehicle component parts (drive train, brake system, suspension system, and steering system)	Periodic Maintenance Services (PMS) for Vehicle Component Parts (Drive Train, Brake System, Suspension System, and Steering System) <ul style="list-style-type: none"> • Importance of PMS • PMS Schedule Guidelines 	

<p>3. Identify required items for periodic maintenance service on the vehicle</p>	<p>Periodic Maintenance Service Required Items</p> <ul style="list-style-type: none"> • job/repair order • service manuals • tools, materials, and equipment • consumables • Car protective equipment (CPE)- all UCs and 3 Qualifications <ul style="list-style-type: none"> ○ Steering wheel cover ○ Fender cover ○ Shift knob cover ○ Floor mat ○ Seat cover
<p>4. Perform the procedure of periodic maintenance servicing for vehicle component parts (drive train, brake system, suspension system, and steering system)</p>	<p>Periodic Maintenance Servicing Procedures</p> <ul style="list-style-type: none"> • Troubles, Causes, Diagnosis, and Repair • Required Items Preparations • Diagnose, Change/Add-up, Replace, and/or Adjust based on standard procedures • PMS Procedures for the Vehicle Component Parts (Drive Train, Brake System, Suspension System, and Steering System) • Post Work Processes • Complete Documentation • Schedule Guidelines
<p>5. Discuss vehicle releasing procedures of the vehicle</p>	<p>Releasing Procedures of the Vehicle</p> <ul style="list-style-type: none"> • Final Inspection, Test Drive, and Cleaning • Documentation Review and Service Record Keeping • Hand-over Process • Post Work Processes

6. Calculate service cost for PMS	Service Costing for PMS <ul style="list-style-type: none"> • standard rate • material costs • manpower (labor cost) • overhead costs
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GLOSSARY

Automotive Servicing – the practice of inspecting, maintaining, and repairing vehicles to ensure they are safe and functional.

BLOWBAGETS – A checklist for pre-driving inspection, covering Battery, Lights, Oil, Water, Brake, Air, Gas, Engine, Tires, and Self/Safety.

Component Parts – individual parts of a vehicle system, such as the engine, drive train, brake system, suspension system, and steering system.

Consumables – items that are used up during maintenance or repair, such as oil, lubricants, and cleaning agents.

Diagnostic Tools – equipment used to identify issues in a vehicle's systems, such as OBD scanners or multimeters.

Documentation and Service Records – written records of all inspections, repairs, and maintenance performed on a vehicle.

Emerging Trends – new advancements or innovations in automotive servicing and repair.

Factory Loaded Parts – components and accessories installed in a vehicle during manufacturing, such as spare tires, tool kits, and floor mats.

Final Inspection – a thorough check conducted after servicing or repairing a vehicle to ensure all work has been completed to standard.

Hand-Over Process – the procedure of officially returning the vehicle to the customer, including explaining the work done and providing relevant documents.

Inspection Checklist – a list of items and components to be checked during a pre-delivery or maintenance service to ensure all aspects of

Jacks and Lifters – tools used to lift and support vehicles during inspections and repairs. These include mechanical jacks, hydraulic lifters, and scissor jacks.

Job/Repair Order – a document detailing the work to be done on a vehicle, including diagnostics, repairs, and maintenance.

Manpower (Labor Cost) – the cost associated with the work performed by technicians or staff during vehicle servicing or repairs.

Material Costs – the cost of replacement parts, consumables, or other materials used during maintenance or repairs.

Overhead Costs – indirect expenses incurred by a service facility, such as electricity, rent, and administrative costs.

Periodic Maintenance Service (PMS) – Scheduled maintenance activities performed at regular intervals to prevent vehicle breakdown and ensure optimal performance.

Pre-Delivery Inspection (PDI) – a systematic inspection conducted before handing over a vehicle to the customer to ensure it meets quality and safety standards.

Protective Covers – items used to protect vehicle parts, such as seat covers, steering wheel covers, and floor mats, during servicing.

Schedule Guidelines – a set of recommendations or time intervals for performing periodic maintenance tasks.

Service Costing – the process of calculating the total cost of automotive maintenance or repair, including labor, materials, and overhead expenses.

Service Manuals – technical documents provided by vehicle manufacturers containing instructions and specifications for servicing and repairing a vehicle.

Standard Rate – a fixed cost or fee for specific services or repairs, as established by industry or business standards.

Troubleshooting – the process of diagnosing and solving problems or malfunctions in a vehicle's systems or components.

Vehicle Specifications – detailed information about a vehicle's features, including body type, engine type, and special configurations like electric vehicles (E-vehicles).

Work Bay – a designated area in an automotive service facility equipped with tools, equipment, and space to conduct vehicle maintenance and repairs.

TOOLS, MATERIALS, AND EQUIPMENT

TOOLS	MATERIALS	EQUIPMENT
Standard Hand Tools	Chemical degreaser	Training engine (in-line type, model year: 2000 and up)
Crankshaft pulley holder (or equivalent)	Cotton gloves	Training vehicle (model year: 2000 and up)
Torque wrench (range: 10-40 N-m)	Cotton rags	Air compressor (1Hp)
Torque angle gauge	Apron	Cleaner spray gun (for chemical degreaser)
Micrometer set (range: 0-25 mm, 25-50 mm, 50-75 mm, 75-100mm) Accuracy: 0.01mm	Plastigauge, red	Engine stand
Micrometer stand	Plastigauge, green	Engine hydraulic crane (2 tons)

Bore gauge set (range: 15-60 mm) Accuracy 0.01 mm	Plastigauge, blue	Worktable
Bore gauge set (range: 50-160 mm) Accuracy: 0.01 mm	Overhauling gasket set	Stainless overhauling pan
Dial Gauge (Accuracy: 0.01 mm) w/ magnetic stand	Gasket sealant (Form In-place Gasket: FIPG)	Water heater
Compression gauge, universal (gas and diesel)	Steel spatula (width: 1 inch)	Valve grinder
Vernier caliper	Steel brush (Fine)	Vehicle lifter, 3 tons
Feeler gauge	Contact cleaners	Valve refacer
Straight edge	Grinding compound, fine	Crocodile jack, 2 tons
Surface plate (or equivalent)	Grinding compound, coarse	Jack stand
V-Blocks	Penetrating oil	Trolley
Valve spring compressor	Engine oil	Bench vise
Piston ring expander	Belt dressing	Oil bucket
Piston ring compressor	Wheel wedge	Hydraulic press
Mechanic stethoscope	Valve Grinding stick	Chain block, 2 tons
Ridge reamer	Emery cloth (Crocus)	
Honing	PPEs	
Oiler, 300ml cap.	First-Aid Kit	
Steel square, 8"	Kerosene	
Inside dial caliper, 5-10mm	Stamp pad	
Inside dial caliper, 10-20mm	Prussian blue	
Radiator pressure tester	Shop rags (paper towel)	
Belt tension gauge		
Thermometer, service type		
Multi-tester, digital		
Glass beaker, 1L cap.		
Oil pressure gauge		
Flower -type sockets		
Flower-type deep socket		
Allen wrench		

Torque wrench (range: 50-100 N-m)		
Snap ring plier		
1 set Flower -type sockets		
1 set Flower-type deep socket		
5 sets Allen wrench		
5 pcs Torque wrench (range: 50-100 N-m)		
5 pcs Snap ring plier		