

Course Title	BASIC CAR MAINTAINANCE																							
Purpose	To acquire practical knowledge on Maintaining Vehicles.																							
Eligibility	<ol style="list-style-type: none"> 1. Degree/Diploma in relevant branch of engineering or NTC/NAC with 2-3 years relevant trade experience. 2. SSC with Valid Driving License. 																							
Duration	01 week																							
Location	ADVANCED TRAINING INSTITUTE, MUMBAI																							
Learning outcomes	After completion of training the candidate will <ol style="list-style-type: none"> 1. Able to Perform Basic Maintenance of Cars/Vehicles. 2. Perform Basic Checks like, Checking Engine Oil, Brake oil etc. 																							
Teaching methods	<ol style="list-style-type: none"> 1 Lectures in class room. 2 Practice sessions 3 Group exercises 4 Demonstrations. 																							
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Course schedule	DAY	FORENOON SESSION (9.00 am – 1.00 pm)	AFTERNOON SESSION (1.30 pm – 5.30)																					
	1	Admission/ Introduction of the course subject. Safety Precautions,	Car Layout. Identify Different Parts in Vehicle.																					
	2	Corrosion Prevention, Changing of Fuse,	Checking Corrosion in Car Body and Chassis. Testing of Fuses.																					
	3	Battery, Types, Servicing and Maintenance	Practical on Battery, Servicing & Testing of Spark Plug																					
	4	Engine Tune up, Requirement and Procedure of Engine Tune up. Pollution Control Norms.	Check and Replace Fuel and Ignition system parts.																					
	5	Brake Adjustment, Tyre Pressure, Proper Inflation of Tyres, Greasing of Suspension System, Wheel Replacement, Fan Belt Replacement	Feedback / Validation																					

AIDS	LCD projector, white board, Vehicle in Running Condition, Nitrogen Tyre Inflator, Battery Charger, Spark Plug Testing & Cleaning Machine, Diesel Smoke meter, 5 Gas Analyzer, Measuring Instruments/machines/material for practice sessions, laptop.
Instruction material	TD/AVTS/AV.03/01/CM TD/AVTS/AV.03/01/PPT

Course Title	MAINTENANCE, SERVICING AND OVERHAULING OF AUTOMOTIVE PETROL ENGINE.																							
Purpose	To acquire practical knowledge to repair/maintain the petrol engine.																							
Eligibility	1. Degree/Diploma in relevant branch of engineering or NTC/NAC with 2-3 years relevant trade experience																							
Duration	02 week																							
Location	ADVANCED TRAINING INSTITUTE, MUMBAI																							
Learning outcomes	On completion of the course the participant will able to repair/maintain the petrol engine.																							
Teaching methods	1 Lectures in class room. 2 Practice sessions 3 Group exercises 4 Demonstrations.																							
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Course schedule	DAY	FORENOON SESSION (9.00 am – 1.00 pm)	AFTERNOON SESSSION (1.30 pm – 5.30)																					
	1	Admission/ Introduction of the course subject. Safety Precautions,	Practical																					
	2	Engine: Specification, Components, Disassembly, Inspection repair and assembly.	Starting and stopping of engine.																					
	3	Intake and exhaust system: Air intake quality, Air cleaner, manifold, PCV device.	Disassembling the engine.																					
	4	Fuel: Difference between leaded petrol and unleaded petrol and product of combustion.	Decarbonising valve, refacing , grinding etc.																					
	5	Fuel system: Carburettor, specification, components, adjustment, disassembly, inspection repair and assembly MPFI.	Inspection, repair / replace the engine components.																					
	6	Lubrication system: Oil pump and oil filter.	Assembling the engine.																					
	7	Cooling system: Description, water pump, thermostat, radiator, coolant properties and coolant classification.	Start the engine.																					
	8	Ignition system: Battery, distributor, operation, components, disassembly, inspection, assembly, adjustment, test and installation, ignition coil, H.T cables, spark plug.	Compression test.																					
	9	Turbo engine: Function and operation of turbo charger, maintenance and trouble shooting of turbo charger.	Pollution control system, euro norms.																					

	10	Engine specified parts tightening torque, engine tune up, service specifications.	Feedback / Validation
AIDS	LCD projector, white board, Vehicle in Running Condition, ECU Diagnostic Machine, Ultrasonic Injector Cleaner, 5 Gas Analyzer, Measuring Instruments/machines/material for practice sessions, laptop.		
Instruction material	TD/AVTS/AV.03/02/CM TD/AVTS/AV.03/02/PPT		

Course Title	MAINTENANCE , SERVICING AND OVERHAULING OF AUTOMOTIVE DIESEL ENGINE.																							
Purpose	To acquire practical knowledge to repair/maintain the diesel engine.																							
Eligibility	1. Degree/Diploma in relevant branch of engineering or NTC/NAC with 2-3 years relevant trade experience																							
Duration	02 week																							
Location	ADVANCED TRAINING INSTITUTE, MUMBAI																							
Learning outcomes	On completion of the course the participant will able to repair/maintain the diesel engine.																							
Teaching methods	1 Lectures in class room. 2 Practice sessions 3 Group exercises 4 Demonstrations.																							
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Course schedule	DAY	FORENOON SESSION (9.00 am – 1.00 pm)	AFTERNOON SESSTION (1.30 pm – 5.30)																					
	1	Admission/ Introduction of the course subject. Safety Precautions,	Practical																					
	2	Engine: Specification, Components, Disassembly ,Inspection repair and assembly.	Starting and stopping of engine.																					
	3	Intake and exhaust system: Air intake quality, Air cleaner, manifold, PCV device, super charging, turbo charging.	Disassembling the engine.																					
	4	Fuel system: FIP (inline and rotary), types of injectors and testing, fuel filter and fuel lines.	Decarbonising valve refacing , grinding etc.																					
	5	Lubrication system: Oil pump and oil filter.	Inspection , repair / replace the engine components.																					
	6	Cooling system: Description, water pump, thermostat, radiator, coolant properties and coolant classification.	Overhaul the oil pump, oil filter, cleaning oil passage, pipes, water pumps, servicing fuel system etc.																					
	7	Engine specified parts tightening torque, engine tune up, service specifications.	Assembling the engine.																					
	8	Turbo charger, Automatic timer.	Bleeding fuel system.																					
	9	PUC control system, product of combustion of diesel fuel.	Starting the engine.																					
	10	Euro norms.	Feedback / Validation																					

AIDS	LCD projector, white board, Vehicle in Running Condition, ECU Diagnostic Machine, FIP Test Bench, Injector Testing Machine, Diesel Smoke meter, 5 Gas Analyzer, Measuring Instruments/machines/material for practice sessions, laptop.
Instruction material	TD/AVTS/AV.03/03/CM TD/AVTS/AV.03/03/PPT

Course Title	MAINTENANCE ,SERVICING OF AUTO ELECTRICAL / ELECTRONIC SYSTEM.																							
Purpose	To acquire practical knowledge to trouble shoot, repair auto electrical / electronic system.																							
Eligibility	1. Degree/Diploma in relevant branch of engineering or NTC/NAC with 2-3 years relevant trade experience																							
Duration	02 week																							
Location	ADVANCED TRAINING INSTITUTE, MUMBAI																							
Learning outcomes	On completion of the course the participant will able to trouble shoot, repair auto electrical / electronic system.																							
Teaching methods	1 Lectures in class room. 2 Practice sessions 3 Group exercises 4 Demonstrations.																							
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	1	Admission/ Introduction of the course subject. Safety Precautions,	Practical																					
	2	General electrical/ electronic as applied to automobile, self induction, theory of magnetism, generation of EMF, wiring, earthing system, basic electronics and application of electronics.	Wiring practice of automok																					
	3	Battery- specification, construction, chemical reactions, types and testing for the state of charge test.	Measuring voltage drop in system.																					
	4	Starting system –starter motor, types of starter motor, testing of starter motor, solenoid switches, current drop test and starter control circuit.	Maintenance, charging and testing of lead acid batterie																					
	5	Charging system- principle of charging system and charging circuit.	Repair of starter motor, dyno alternator.																					
	6	Operation and construction of dynamo/alternator, regulation of the output of dynamo, alternator, diode testing.	Ignition system maintenanc																					
	7	Lighting , signalling and wiring- Head light, parking light, brake light, fog light, beacon lamp, flasher unit, festoon lamp , ISI colour code, indicators.	Adjustment and testing of distributor, spark plug, igni coil, setting ignition timing.																					
	8	Electrical / electronic ignition system-ignition circuit, ignition switches, ignition coil, distributor, condenser, spark plug, automatic advanced mechanism, magnetos and electronic	Adjustment of head light.																					

		ignition systems.	
	9	Electrical / electronics accessories- Horn, electrical gauges, relays, wiper, heater, fans, washer and wiper reversing switches and pulse tachometer.	Repair and maintenance of electrical gauges and acces
	10	Insulated return system. Power window and locking system- central locking system. Fault finding of central locking system.	Feedback / Validatio
AIDS	LCD projector, white board, Vehicle in Running Condition, Auto Electrical Test Bench, ECU Diagnostic Machine, Battery Charger, Spark Plug Cleaning & Testing Machine, Ignition Coil Tester, Measuring Instruments/machines/material for practice sessions, laptop.		
Instruction material	TD/AVTS/AV.03/04/CM TD/AVTS/AV.03/04/PPT		

Course Title	MAINTENANCE & SERVICING OF VEHICLE AIR CONDITIONING SYSTEM AND POLLUTION CONTROL SYSTEM																							
Purpose	To acquire Practical knowledge to maintain and Service Vehicle Air Condition and Pollution Control System of Vehicles.																							
Eligibility	3. Degree/Diploma in relevant branch of engineering or NTC/NAC with 2-3 years relevant trade experience.																							
Duration	01 week																							
Location	ADVANCED TRAINING INSTITUTE, MUMBAI																							
Learning outcomes	After completion of training the candidate will 3. Able to Perform Repair, Test and maintain Car Air Conditioning System and Pollution Control System 4. Able to Operate Gas Charging Machine. 5. Able to Operate PUC Machine.																							
Teaching methods	1 Lectures in class room. 2 Practice sessions 3 Group exercises 4 Demonstrations																							
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Course schedule	DAY	FORENOON SESSION (9.00 am – 1.00 pm)	AFTERNOON SESSION (1.30 pm – 5.30)																					
	1	Admission/ Introduction of the course subject. Safety Precautions,	Basic Air Conditioning Principles. Refrigerants Types & uses.																					
	2	HVAC Car Layout, Components, AC Compressors, Thermostatic Expansion Valve, RD Bottle, Evaporator, Condenser.	Identification of Air Conditioning Components. Carryout Performance test on AC Unit.																					

			Checking charged state of refrigerant
	3	AC Gas Charging Machine use & Maintenance.	Identify Abnormal Noise from Compressor, Magnetic Clutch, and Blower Motor. Replacing Engine Drive Belt. Diagnosis test and topping up of AC Gas using AC Gas Charging Machine.
	4	Emission Standards, EURO and Bharat Norms, Evaporative Emission Control, Catalytic Conversion, Crankcase Emission Control, Diesel Particulate Filter, EGR & SCR,	Monitoring Emissions procedure by use of Engine Gas Analyser or Smoke meter. Checking & Cleaning a PCV Valve. Inspection of EVAP Canister Purge valve by use of scan tool. EGR/SCR valve removal and Installation.
	5	Procedure of Repair. Inspection & Fault Finding. Repair/Maintenance	Feedback / Validation
AIDS	LCD projector, white board, Vehicle in Running Condition, AC Gas Charging Machine, Diesel Smoke meter, 5 Gas Analyzer, Measuring Instruments/machines/material for practice sessions, laptop.		
Instruction material	TD/AVTS/AV.03/05/CM TD/AVTS/AV.03/05/PPT		

Course Title	MAINTENANCE & SERVICING OF VEHICLE CONTROL SYSTEM (STEERING, WHEEL BALANCING & ALIGNMENT, BRAKE SYSTEM)																							
Purpose	Acquire Skills to understand the working of Steering , Brake System and Wheel Balancing & Wheel Alignment system of Vehicles and Perform Repair/Overhaul of Vehicle Control System.																							
Eligibility	1. Degree/Diploma in relevant branch of engineering or NTC/NAC with 2-3 years relevant trade experience																							
Duration	01 week																							
Location	ADVANCED TRAINING INSTITUTE, MUMBAI																							
Learning outcomes	After completion of training the candidate will 1. Able to Perform Service and Maintenance of Vehicle Brake & Steering System 2. Able to Perform Wheel Balancing & Wheel Alignment.																							
Teaching methods	1 Lectures in class room. 2 Practice sessions 3 Group exercises 4 Demonstrations.																							
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	1	Admission/ Introduction of the course subject. Safety Precautions,	Description & Function of Steering & Types of Steering Gear Box.																					
	2	Steering arm and Components. Hydraulic and Electrical Assisted Steering System.	Identification of Steering System Components. Practice on Removing Steering Wheel and Steering Gear Box.																					

	3	Wheel Alignment Principles. Wheels and Tyres, Construction and Characteristics.	Check and adjust power steering fluid. Inspect & adjust engine drive belt. Practice on removing wheels from vehicle, dismantle tyre and tubes and check for puncture for tubed and tubeless tyre. Perform Wheel Balancing and Wheel Alignment
	4	Braking Systems. Different Types of Brakes. Braking System Components. Drum Brakes and Disk Brakes	Practice on Adjusting Brake pedal play. Overhaul/Repair Drum and Disc Brakes. Adjust Air Brake and locate air leaks-General Maintenance. Bleeding of Hydraulic Brake and Disc Brakes.
	5	ABS and ESP. Procedure of Repair. Inspection & Fault Finding. Repair/Maintenance	Feedback / Validation
AIDS	LCD projector, white board, Vehicle in Running Condition, Wheel Alignment Machine, Wheel Balancing Machine, Measuring Instruments/machines/material for practice sessions, laptop.		
Instruction material	TD/AVTS/AV.03/06/CM TD/AVTS/AV.03/06/PPT		