

1	Name of Course	<b>CERTIFICATE COURSE IN ADVANCE AUTOMOTIVE DIAGNOSTIC SYSTEMS (W.E.F. 2017-2018)</b>						
2	Couse code	<b>306117</b>						
3	Max No of Students Per Batch	25						
4	Duration	6 Months						
5	Type	Part Time						
6	No of Days/Week	6 Days						
7	No of Hours Per Day	4 Hours						
8	Required Space	Class Room – 200 sq.ft, Workshop – 200 sq.ft (400 sq.ft. open space for parking the vehicles)						
9	Minimum Entry Qualification for Student	S.S.C. + 1 Year Experience in Automobile / Mechanical field OR ITI (Automobile) / HSC (Voc) (Automobile) / Diploma / Degree in Mechanical / Automobile Engg.						
10	Objective of Course	To provide skill man power in Automobile Diagnose Field.						
11	Employment Opportunity	Can be worked as Operator / Mechanic in Automobile Diagnose field.						
12	Teacher's Qualification	Diploma / Degree in Mechanic / Automobile with Two year Experian's in related field						
13	Training System	<b>Training System Per Week</b>						
		Theory		Practical		Total		
		06 Hrs		18 Hrs		24 Hrs		
14	Exam. System	<b>Sr. No.</b>	<b>Paper Code</b>	<b>Name of subject</b>	<b>Th /PR</b>	<b>Hours</b>	<b>Max. Marks.</b>	<b>Mini. Marks</b>
		1	30611711	Operations and Repairs of Advance Automotive Engine	TH-I	3 hrs.	100	35
		2	30611712	Automotive Diagnose System	TH-I	3 hrs.	100	35
		3	30611721	Automotive Diagnose System	PR-I	5 hrs.	200	100
				<b>Total</b>			<b>400</b>	<b>170</b>

## Theory – I - Operations And Repairs Of Advance Automotive Engine

1)	Function of each parts Operation of new Generation Vehicle.
2)	Working Principles of M.P.F.I. & C.R.D.I.Car engine, Function of each parts.
3)	Looking Up, Data Analyze Trouble Code, Operation Principle and Vehicle Diagnose Faults Finding By Multicar Scanner.
4)	Engine compartment working of all sensors, explanation.
5)	Data Analyze Trouble Code & Electrical Wiring Principle Diagram, Measuring Signals By Testing (Multi Car Scanner, Multi Meter, Signal Simulator ]
6)	Procedure for ON BOARD DIAGNOSTIC (OBD - I)
7)	Procedure for ON BOARD DIAGNOSTIC (OBD - II)
8)	Technologies used in Diagnose Car Scanner Equipment. To Analyze And DTC Faults By Functions As Fault Code, Live Data, Active Test, ECU Programming.
9)	Read The Diagnostic Trouble Code & Repair Techniques Applied For Engine Control System On Vehicles. (Including Independent Electromagnetic Control, Mechanical & Electronic Unit (ECU).
10)	Measurement of Electric Technical Parameters, Electric Signals & Vehicle Engine Compartment, All Sensors Fault Finding & Using Multi Car Scanner.
11)	Car Electric Starting System, Battery Charging System And Power Supply System.
12)	Battery and electronic, Electromagnetic Ignition Systems ( On TATA, MAHINDRA, MARUTI, TOYOTA)
13)	Working of Electronic Fuel Ignition System. (On TATA, MAHINDRA, MARUTI, TOYOTA)
14)	Working of explanation M.P.F.I. & C.R.D.I. System.
15)	Programming and set QR code electronic injector.
16)	Explanation of Evaporative Emission System [EVAP]
17)	Explanation of Exhaust Gas Recirculation System [EGR]
18)	Explanation of Turbocharger System [TC]
19)	Explanation of Throttle Position Sensor [TPS]
20)	Service Reminder Indicator (Check Engine Light, Reset Service Lamp Delight By Using CAR Diagnostic Tool )

## **Theory – II - Automotive Diagnose System**

- 1) To Study Electronic Control Unit (E.C.U.), Procedure for Repairing & Programming.
- 2) Study of M.P.F.I. & C.R.D.I. Engine Compartment Sensors, Testing And Replacement Method.
- 3) Study of Electronic Fuel Injector Testing & Reprogramming Method.
- 4) Repairs Of M.P.F.I. & C.R.D.I. Engines
- 5) Repairs Of Electronic Fuel Injection Systems
- 6) Repair Of Antilock Break System (A.B.S.)
- 7) Repair Of Electronic Power Steering, Hydraulic Power Steering (H.P.S. & E.P.S. Systems)

## **Practical – I - Automotive Diagnose System**

- 1) Repairs Of Common Faults, Using Car Scanning Tool & Reset Electronic Control System.
- 2) To Adjust Idle Speed Air, Fuel Ratio & Engine Power Of Electronic Fuel Injection System (E.F.I.)
- 3) To Analyze Live Data For Diagnosing Adjustment & Repairs. Fault Finding By Intelligent Diagnostic Equipment (Using Multicar Scanner)
- 4) To Repairs Electronic Injector by Testing Machine.
- 5) Programming Repairs And Adjustment Digital Odometer .
- 6) Repairs Of Wiper Motor, Starter Motor, Alternator, Power Window & Door Locking System.
- 7) Airbag System (S.R.S.) Programming Repairs & Reset Airbag (E.C.U.)
- 8) Immobilizer System Electronic Key Programming, Repairing Immobilizer System.
- 9) Advance Automobile Knowledge Development with The Way Of Professional Repair Techniques to Help Students for Study & Working Of Automotive Workshops.

## Tools And Equipments List

Sr.No.	Name of Equipments	Quantity
1	Automotive Tool Kit	2 set
2	ECU & Immobilizer Programmer With All Sensor Testing Kit	1 No.
3	Car engine Scanner	1 No.
4	Fuel Injector Testing Machine (M.P.F.I. )	1 No.
5	Pneumatic Gun With Pipe	1 set
6	Soldering gun	1 No.
7	Battery charger	1 No.
8	CAR (M.P.F.I. PETROL) Running Model vehicle (old)	1 No.
9	CAR (C.R.D.I. DIESEL) Running Model vehicle (old)	1 No.
10	Engine Compartment Sensors	2 set
11	E.C.U. (Electronic Control Unit sensors)	5 Nos.
12	M.P.F.I. & C.R.D.I. Complete Wiring Set.	2 set
13	B.C.M. (Body Control Module)	3 Nos.
14	E.P.S. (Electronic Power Steering Unit)	1 No.

- Note :-**
- 1 Tie-up for Automobile Service Station / Garages having all facilities are permitted.
  - 2 E.P.S. if not available in Vehicle, should be purchase separately.

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