Mercedes Engine Diagnosis

DESCRIPTION:

Mercedes is known for its hybrid engine variants but how do they do it ? What parts do they use ? what components are used for building a engine and how do they do it? Come and have a experience and let your brains go bragging about the engine diagnosis. Mercedes is implementing a engine with many components .Engine Diagnosis involves many things and let yourself immense in this workshop of knowing how it all works.

Introduction.

What is an automobile?

- Brief history.
- Indian automobile industry.

Vehicle Dynamics

- Introduction to Friction and its types.
- Introduction and Calculation of Air drag offered to a car
- Crash Analysis of high speed cars
- How to perform crash analysis using solid works
- Effect of composite materials on vehicle performance

Chassis design:

Introduction to Types of chassis –

Ladder frame chassis.

- Tubular space frame chassis.
- Monocoque frame chassis.
- Backbone frame chassis..
- Carbon fibre Monocoque.

Suspension Unit: Brief terminology

- Weight Transfer
- Camber and Caster angle
- Spring Rate
- Suspension Travel

Types of suspensions

- Dependent suspension
- Independent suspension
- Direct Control Suspension with selective damping in

Mercedes Benz Steering System

- Ackerman Steering Principle
- Steering Mechanisms
- Rack and Pinion
- Recirculating Ball Type
- Worm and Sector
- Under steer, Over steer
- Power Steering

Transmission system

- Flywheel
- Clutch
- Gearbox
- Constant mesh type
- Synchromesh type
- Sliding mesh type
- Types of Transmission
- Manual

- Semi-Automatic
- Automatic
- CVT
- 7-G automatic transmission in Mercedes Benz.
- Differential
- 2WD, 4WD, AWD
- Tyres (notations and types)
- Traction Control
- Tire Pressure loss warning system in Mercedes Benz.

Braking Unit

- Disc Brakes
- Drum Brakes
- Magnetic Brakes
- Vacuum Brakes
- Anti-lock braking System
- Brake Actuators
- Power Brakes
- Brake Fluids

Fuel Supply System

- Fuel Filter
- Carburetor
- Fuel Injector
- Spark Plug

Project 1:

- Introduction to Catia/Solidworks
- Briefing about various Sketching commands
- Designing a Vehicle Frame/component on Catia /Solidworks

Day 2:

IC Engine

- Introduction to IC Engine and its components.
- Types of IC Engine

- Engine Layout and working
- Differentiating between Petrol and Diesel Engine

Introduction to In-line and V arrangements of cylinders and its effect on Engine

- performance
- Valves and Valve Timing
- Engine Cooling
- Fuel pre-heating
- CRDI, MPFI and Piezo Injectors.
- Turbochargers
- Superchargers
- Introduction to Various sensors in Mercedes Engines.
- Mechatronics in Mercedes Benz for Vehicle performance and Driver's comfort.

Project 2:

Live Demonstration –

- Mercedes in-line 6 cylinder Engine Parts Showcase
- Measurement of Engine cylinder volume.
- Display of various sensors in the Engine.

FOR MORE DETAILS, PLEASE BE FREE TO CONTACT US!!