

## **Automobile(EV) Course Content**

**The details of the workshop are as follows:**

Techfest is the annual science and technology festival of IIT Bombay.

Following is the basic outline of the in-person workshop that would be happening at Techfest in IIT Bombay.

### **Content of the Workshop**

Welcome to the Automotive (EV) Workshop—an immersive platform where students dive into the world of electric vehicles and image processing. Our secure environment is not just about learning the basics; it's your hands-on ticket to applying knowledge in real-world scenarios using our advanced kits. Designed to prepare you for competitions in automotive robotics, image processing, and aerial robotics, this workshop is guided by industry experts with extensive international experience in automotive image processing. Get ready to accelerate your skills and conquer the challenges of the automotive industry with us!

#### **Session 1**

##### **Introduction to Automobile**

Introduction to IC Engine

- 2 Stroke Engine
- 4 Stroke Engine
- 6 Stroke Engine
- Crank Shaft Mechanism
- Timing Valve Diagram

Coolant used in IC Engine

- Air Cooling
- Water Cooling

## **Session 2**

Supercharger

Turbocharger

Chassis

- Introduction to chassis
- Types of chassis
- Technology used in chassis to prepare

Suspension system

- Types of Suspension system
- Parts in Suspension system
- Wheel Alignment

## **Session 3**

Mechanisms

Steering mechanism

- Principle of steering
- Steering Geometry
- Types of steering

Braking mechanism

- Different types of brake
- Source to apply brake
- Electronic Braking system

Transmission system

- 2WD
- 4WD
- All wheel drive

## **Session 4**

Electrical Vehicle

- Battery Management system
- Battery thermal management system
- Power train
- Hybrid vehicle