

www.diyguru.org



3 Days Workshop on Vehicle Design & Dynamics

Promoting Maker culture, India



OVERVIEW

<https://www.diyguru.org/automotive/trainings-and-workshops>

1. ABOUT

It is a 3 days' workshop (15 Hours) in which we will make the students to understand the basics of automobile, its working principle, simulation, design and manufacture a car (prototype) with their own hands. This Program is conceptualized to impart fundamentals know how on correlating design with analysis of various Automotive Components. Students who are pursuing engineering can learn about the importance of studying Engineering mechanics, Design of Machine Elements and Mechanics of Material implementing the calculations in CAD/CAE software's. For Pre-Final year students, this program will focus on the understanding the basics automotive parts like engine, gearbox, suspension, Chassis, Brakes, Hub, Upright, Arms, Steering various analysis

this workshop consists of four sections:

Section-A

- A. Understanding basics of automobile
- B. Working principle of different components of vehicle & brief discussion on each part.
- C. Safety measures to be undertaken by students during working in workshop.

Section-B

- A. Fundamental design discussion
- B. Parameters listing
- C. Engine selection process
- D. Tire selection process
- E. Chassis Design
- F. Transmission & engine control system

Section-C

A. The Suspension system:

Suspension working & components analysis
Design of spring & shock absorbers
Independent & dependent suspension
Double wishbone suspension system design
Wheel alignment angles
The load transfer

B. Braking system:

Disc brake system design
Hydraulic circuit for braking system
Actuation methods
Rotor shear stress concepts
Brake biasing

C. Tires & Traction:

Terrain analysis
Selection of tire
Concept of grip & traction
Slip angles
Cornering stiffness

C. Ergonomics:

Cockpit design of ATV Car
Design of pedals & driver safety systems

Section-D

- A. Discussion/knowledge sharing about the preparation for different student competitions/racing championships/Events where students can represent their college/university globally.

- B. General knowledge about the events like ATV championships, Formulae Racing, Go Karts, Quad Racing, Rallies, bike racing championships.
- C. Discussion about the different international Automotive Competition Rulebooks.
- D. To make students develop Teamwork, extract Leadership Qualities within them.
- E. To develop them in marketing skills like arrangement of funds for their projects.

2. WHO CAN PARTICIPATE

- A. Program is designed for B.E./B.Tech./Diploma – Automobile, Mechanical, Electronics, Industrial and production engineering students.
- B. Automotive enthusiasts (under graduate & passed out's).
- C. Anyone having passion for Automobiles
- D. Diploma Engineers interested in pursuing further studies on part time or full time basis in Automotive Sector.

4. WORKSHOP FEE

INR-3,200 (Inclusive of all taxes.) per student

6. CERTIFICATION

All the participating students will be given “Certificate of Participation” and 5 students will get “Certificate of Appreciation” (on basis of a test taken at the end of workshop) issued by “DIYguru”

5. TERMS

1. There should be min. of 100 students at the organizing venue.
2. We need 3 students of that particular college having good academic career and leadership quality to coordinate the whole process with us. They will be getting additional benefits.
3. Lecture theatre or seminar hall of above capacity.
4. Accommodation for faculty and trainers.