

Summer Training on Vehicle Design & Dynamics

Autosports
INDIA 



AUTOSPORTS INDIA

Promoting ATV culture, India



edu.autosportsindia.com | training.autosportsindia@gmail.com

Contact us: +91-9999891264,+91-8587978522

1. ABOUT

It is a 30 day workshop in which we will make the students to understand the basics of automobile, its working principle, 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 in second year of their 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 Dynamic simulation of automotive parts like suspension, Chassis, Brakes, Hub, Upright, Arms, Steering through various analysis software.

This workshop consists of four sections:

Section-A

- A. Understanding basics of automobile.
- B. Working principle of different components of vehicle & brief discussion on vehicle dynamics.
- 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
- G. Component modeling on Catia

Section-C

A. The Suspension system:

- A. Suspension working & components analysis
- B. Design of spring & shock absorbers
- C. Independent & dependent suspension
- D. Double wishbone suspension system design
- E. Wheel alignment angles
- F. The load transfer

B. Braking system:

- A. Disc brake system design
- B. Hydraulic circuit for braking system
- C. Actuation methods
- D. Rotor shear stress concepts
- E. Brake biasing

C. Tires & Traction:

- A. Terrain analysis
- B. Selection of tire
- C. Concept of grip & traction
- D. Slip angles
- E. Cornering stiffness

D. Ergonomics:

- A. Cockpit design of ATV Car
- B. 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 8000-/- per student (including all taxes)

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 "**Autosports India**".