



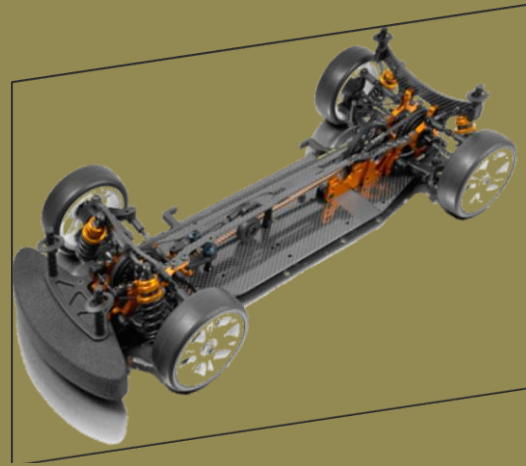
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## Auto-MOB Workshop

(A two days Workshop on Auto-Mob & IC Engine Workshop.)

### Workshop Highlights

- Receive an unparalleled education from **Go 4 Tech** team with personal one-on-one attention.
- Improve your job prospects and get an edge over your counterparts.
- Interactive Query sessions, Live Demos, PowerPoint Presentation.
- Exposure to multi disciplinary content.
- Opportunity for online examination and certification.
- Certificates issued to all participants.
- Career guidance by experienced faculty.
- Learn and interact with one of the respected authorities on Automobile & IC Engine.



### Who should Attend ?

The workshop is a must for anyone

- Interested in Automobile Field.
- Applying for higher studies
- Looking for a career in Automobile field Field.
- Interested in Making Own car Project.

### Benefit to Participant

- Develop very good understanding of Automobile.
- Learn about Software themselves under the guidance of professionals.
- Can easily use this experience to develop good B.Tech/ M.Tech projects.
- Helps to face job interviews with confidence.
- Hands-on experience in addition to their classroom trainings will transform the students into better engineers
- Opportunity to interact with DCE ( Delhi College OF Engineering ) alumni Team to discuss career options.

**Open to students of all departments**



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### Workshop Detail

- 1/2 Day workshop – includes lectures, design sessions, Demonstration sessions.
- Cost: Rs 1100 Per Participant (For Assembling-Disassembling the Bike engine) Workshop Cost.
- Cost: Rs 1300/- Per Participant (For Assembling & Disassembling the Car Engine) Workshop Cost.
- Cost includes training material, software and instruction manual.

### Workshop Content

Our workshop is aimed at participants with diverse backgrounds with an interest to learn about constructing an aircraft which will make the participants innovate in the design stage, put their design into practice in the manufacturing stage and see their hard work take-off through the hands of our expert flyers at the end. It provides an opportunity to experience the true spirit of engineering.

Workshop duration: 1/2 days

Workshop structure:

Introduction

- What is an automobile?
- Brief history
- Changes over the years
- Indian automobile industry
- Sigma ratings

Types of locomotive vehicles

Chassis design

- Brief terminology
  1. MULTI POINT STRUT BAR
  2. FENDER BAR
  3. ANTI ROLL BAR
  4. MONOCOQUE
  5. TUBULAR SPACE
  6. LONGERON RH,LH
- Types of chassis
  1. LADDER FRAME CHASSIS

2. TUBULAR SPACE FRAME CHASSIS
3. MONOCOQUE FRAME CHASSIS
4. ULSAB MONOCOQUE
5. BACKBONE FRAME CHASSIS
6. ALUMINIUM SPACE FRAME
7. CARBON FIBRE MONOCOQUE

Suspension Unit

- Brief terminology
  1. Weight transfer (sprung and un sprung)
  2. Jacking forces
  3. Camber and caster angle
  4. Anti dive & anti squat
  5. Spring Rate
  6. Travel
- Types of suspensions
  1. Dependent suspension
  2. Independent suspension
- Front Independent Suspensions
  1. McPherson Strut
  2. Double wishbone
  3. Coil Spring type1
  4. Coil spring type2
  5. Multi link type
  6. Trailing arm suspension
  7. I beam suspension
- Rear suspension - dependant systems
  1. Solid-axle, leaf-spring
  2. Solid-axle, coil-spring
  3. Beam Axle
- Hydra gas Suspension
- Hydro pneumatic Suspension
- Progressively wound springs
- Torsion bars

Braking Unit

- Disc brakes
  1. Self adjusting nature
  2. Disc damage modes
  3. Servicing your disc
- Drum brakes
- Anti-lock braking system
  1. Four-channel, four-sensor ABS
  2. Three-channel, three-sensor ABS

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### 3. One-channel, one-sensor ABS

- Brake Actuators
  1. Cable-operated
  2. Solid bar connection
  3. Single-circuit hydraulic
  4. Dual-circuit hydraulic
  5. Brake-by-wire
- Power Brakes and master cylinders
- Brake fluids

## Designing Using Software- Basics of AutoCAD & CATIA V5 (150 minutes session)

### Transmission system

- Types of Transmission system
  1. Manual transmission
    - Gear ratio
    - Different types of gear
    - Clutch & its components
    - Reverse & its working
  2. Automatic transmission
    - Planetary gearsets
    - DSG / DCT Gearboxes
    - Torque Converters
  3. Semi automatic Transmission
  4. Continuously variable transmission
- Differentials
  - Open Differentials
  - Limited-slip differentials
  - Locking differentials
- 2WD, 4WD, AWD

### Tyres and Traction Control

- Tyre size notations
- Tyre types for passenger cars
- Tyre constructions
  - Cross-ply construction
  - Radial construction
- Tyre tread

- Traction & its control

### IC Engines

- Types
  - Compression ignition
  - Spark ignition
- Layout
- Engine balancing
- Spark plug
- Carburetor
- Fuel injector
- Valves & valve timing
- Valve trains
- Engine cooling
- Turbochargers
- Superchargers
- Air/Fuel ratios
- Wankel Engine (6 stroke)
- Latest technologies
  - PGMFi
  - DTS-Fi
  - MPFI
  - CRDI
  - RTR
  - VVTi
  - i-Vtec
  - TDI
- Air Bags & Steering System.

**Our Hands-on and Practical Workshops will supplement your Classroom trainings and transform students into better engineers**

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### Feedback Of Participant

"Fun and enriching experience. Highly Interactive and Informative lectures. Hardworking and friendly team. Best part is that these people would never get fed up of students asking for the same thing again and again but would rather clear the doubts with patience which is a true proof of their dedication and love for their work. Thank u all for coming. Had an Amazing time. Cheers! :)" - **Shalini, Delhi Technology University, Delhi**

"It is really a matter of honour to organize an event as such at BITS Pilani, Goa. This develops innovative thinking and is the platform for creative approach"  
- **Gunakar Venkat Yadav , IIT-BHU, Banaras.**

"Best Workshop I had attended ever :) Even belonging to non-mechanical branch, I didn't feel that I was out of topic. Very good!!" - **Pooja Bhojwani, IIT-Bombay .**

"Its awesome to see things fly at economic prices. Workshop is so interesting." - **Karthik Reddy B, NIT-Patna.**

### Workshop Handouts

- **Go 4 Tech** Software tool kit CD Pack.
- **Go 4 Tech** Course ware
- "Certified of Participation" to each participant.



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