

EVENT SUMMARY

- In L.D. college of engineering a workshop for Vehicle Dynamic was held by Automobile department and SAE India Gujarat division Western section for college students and faculty.
- In this workshop the students were taught the Deep information of the Vehicle Dynamic.
- The reason behind this workshop was to provide the knowledge to the students to become familiar with Dynamic of vehicle. This knowledge is now a necessity to know in automobile engineering field.

“Fundamental Vehicle Dynamics and Practical know-how of Vehicle Engineering with Introductory Coverage of Electric and Hybrid Vehicle”

Event Type: Workshop

Event Date: 14/02/20 to 15/02/20

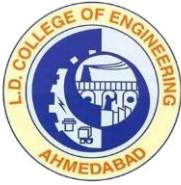
Event Duration: 9:00 AM to 6:00 PM

Venue: Room No.603, building no.6., LDCE

No. of Participants: 68

Name of Coordinator:

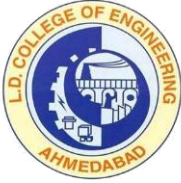
1. Hardik Gohil
2. Kishan Gohel
3. Hasit Suthar
4. Rahul Chudashma
5. Vatsal Vekriya



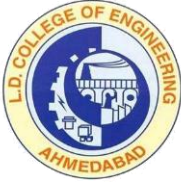
1. Event Brochure and Necessary Correspondence

- Detail and schedule of Event

DAY 1:- 14 February 2020	
09 00 09 30	Registration
09 30 10 00	Inauguration & Key-note Address
10 00 11 30	<p>What is an Engineer? What is a Designer??? Quick learning process, How human brain works, Fundamental Reviews of MUST TOPICS – Engg. physics / Engg. mechanics & overall Mech. Engineering fundamentals.</p> <p>Product design & development process:- Preparing TARGET product specifications, Benchmarking, Concept designing, Detail designing, Design Verifications, Virtual CAE Simulations, Product Testing and validation into laboratories, Field Testing.</p>
11 30 12 00	Tea
12 00 13 30	Vehicle Dynamics:- SAE Co-ordinate system & related terminology, Understanding various loads acting on the vehicle, Preparing free body diagram and arbitrary force diagram for vehicle body, understanding the basic calculations of vehicle dynamics.
13 30 14 15	Break



14 15 15 45	Decoding the vehicle specifications in detail, Acceleration and deceleration calculations, Calculation of vehicle wheel power / torque requirement as per the road characteristics, Calculations for max power / torque from max engine power / torque specifications.
15 45 16 00	Tea Break
16 00 17 30	Understanding the Automotive transmission and its role in vehicle engineering, engine fuel map curves and its significance, vehicle steady state performance calculations, grad ability calculations, etc. Actual detail vehicle dynamics design calculations for one four wheeler and one BAJA vehicle.
DAY 2:- 15 February 2020	
09:00 11:00	Structural designing of BAJA vehicles body, designing for impact, steering system, suspension system designing, brake system designing, axle shaft designing, throttle control system, seating arrangement and basics of related human ergonomics, etc. Transmission systems and CVT designing, Engine exhaust system, etc.
11 00 11 30	High Tea
11 30 13 00	Basic GD & T, surface finish / process capabilities, Engineering drawing practices, How to use design data books and extract proven experience to proceed in designing confidently?



13 00 13 45	Break
13 45 15 15	Important machine elements like circlips, keys/splines, bearings, chain / belt drives, etc. Materials to be used, design standards, Manufacturing process overview, welding processes and detail guidelines. Defining overall workmanship and guidelines for maintaining overall quality

- E-Mail correspondence

Mr. Sagar Murugkar / Mr. Onkar Deshpande

Tel. 9922277224 / 9960668828

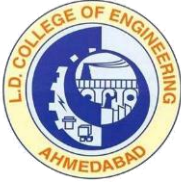
Email ID: sagarvm@saeindia.org, officer-ws@saeindia.org;

- Expert Details

Mr. Ravindra S. Kolhe

- Objective of Program

- fundamental **Vehicle Dynamics & know how of vehicle**
- **engineering along with knowhow of Hybrid / Electrical Vehicle Design** to motivate engineers working in industries / students / professors for enhancing their skill sets in vehicle dynamics, new automotive product development, product benchmarking/reverse engineering activities, establishment of institutional best practices and the various methods/ tools to plan, manage & to



support automotive product development portfolio / pipeline management, project management, process engineering and engineering management.

- Thus the main motto of this training will be
- To build overall competence in vehicle dynamics & to have knowhow of electric / hybrid vehicles.
- To perform the vehicle / aggregate designing work first time reasonably right to freeze concept designs quickly, to perform detail design calculations at the start of the project, to reduce multiple design iterations, etc.
- To have an overall understanding of practical applications of vehicle dynamics, vehicle engineering, etc.
- To understand the detail know how of integration and mapping of vehicle on road characteristics and engine performance characteristics by rightly designing the transmission to bring in the win-win situation for the intended vehicle usage.
- To boost up the confidence in the engineers / engineering students / professors that will result into prompt and effective decisions.
- Promote fresh or lesser experienced engineers mentally to take up responsibilities into engineering project development. To develop decision making abilities and problem solving abilities with appropriate technical analysis and least assistance of their seniors. This will groom their confidence to work independently on highly engineered developmental projects.

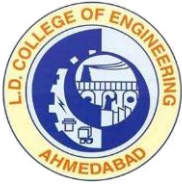
2.Event details and Photographs

- Brief report of event

vehicle dynamics is the study of how the vehicle will react to driver inputs on a given solid surface. Vehicle dynamics is a part of engineering primarily based on classical mechanics The content of the workshop was taught in an organised manner as per the timetable.

The teaching was divided into 2 days.

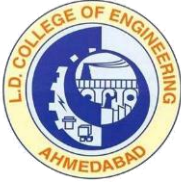
The following topics was taught by Mr.ravindra S kohle



- Drivetrain and braking
- Suspension and steering
- Distribution of mass
- Aerodynamics
- Tires

- Photograph of Event





List of Participants and Attendance Sheet

2. Expenditure Details

- Scanned copy of all bills duly signed by coordinator
- Expense Summary sheet

3. Feedback

- offline forms