

Automobile Engineering Department

L D College of Engineering,

Ahmedabad-15

Annual Report

June 2015-July 2016



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1) Department overview.

The department offers under graduate course (B.E.) in Automobile Engineering. The course is accredited by National Board of Accreditation for three years. The aim of the department is to produce the graduates ready to work in multidisciplinary field. The department provides the education in the area of internal combustion engine, vehicle dynamics, vehicle maintenance and garage practice, automobile air-conditioning, heat transfer, transport management and laws, design of various automobile components and systems. The department has qualified and experienced faculty member in addition to good infrastructure and state of art laboratories with sophisticated equipment. The department is sharing infrastructure and resources with Mechanical Engineering department. The various training/workshops are being organized for educational personnel and student on regular basis. Extracurricular activities are also taken up by the students. Students from the various semester are participating in national and international competitions such as SAE BAJA, SAE SUPRA, BAJA STUDENT INDIA, FORMULA STUDENT INDIA and won prizes. The students are taking the benefits from Siemens Centre of Excellence to enhance and update their knowledge and skill. Students also undergo project work and training at various industries and service centre during their studies.



Faculties at Automobile Engineering Department

Sr. no	Name of the faculty	Specialization	Photograph	DESIGNATION
1	Prof. Rajendrakumar j. Jani	M.E. Mechanical I.C. Engine & Automobile		Associate Professor & Head of Department
2	Prof. Vimal R. Patel	M.E. Mechanical I.C. Engine & Automobile Ph.D.(Mechanical/ Energy and Alternate fuels)		Assistant Professor
3	Prof. Mazar A. Saikh	M.E. Mechanical I.C. Engine & Automobile		Assistant Professor
4	Prof. Rituraj J. Choube	B.E. Automobile		Assistant Professor
5	Prof. Paresh D. Patel	M.E. Mechanical I.C. Engine & Automobile		Assistant Professor
6	Prof. Dipak J. Patel	M.E. Mechanical Jet propulsion & Gas turbine		Assistant Professor
7	Prof. Vivek G. Trivedi	M.E. Mechanical I.C. Engine & Automobile		Assistant Professor

8	Prof. Sulay N.Patel	M.E. Mechanical I.C. Engine & Automobile		Assistant Professor
9	Prof. Bhavik H. Kadiya	B.E. Automobile		Assistant Professor

Laboratory Equipment and facilities available.

Labs

Automobile System

Vehicle Maintenance and Garage Practice

Major Equipment

- Various cut sections (Pneumatic braking system, Differential gear assembly, Steering system, Variable venturi carburettor, MPFI system, Fuel pump, Automobile air-conditioning system, Magneto ignition system, Battery ignition system)
- Transmission gear box
- Transfer case front axle assembly
- Two wheeler chassis dynamometer
- Three wheeler chassis
- Vehicle wiring system
- Injector cleaner and tester
- Two post car hoist
- AC servicing unit
- Vehicle test lane
- Head light beam aligner
- Car washer
- Computerized wheel alignment machine
- De Carburising System

- Auto Diagnostic Tool
- Computerized Wheel Balancer

List of Labs Shared with Mechanical Engineering Department

- Heat Transfer Lab
- DOM Lab
- Fluid Mechanics Lab
- IC Engine Lab
- Workshop
- Mechanical Measurement and metrology Lab
- Manufacturing Lab
- Refrigeration and Air-conditioning Lab
- Computer Lab
- NCES Lab
- Metallurgy Lab
- CNC Lab

2 R & D Activity

Sr. No.	Enrolment No.	NAME	Thesis Title	Guide Name
1	140280711003	BAMBHANIA HARDIK JAYANTIBHAI	Effect of hydrogen and oxygen addition as a lean mixture on emissions and performance characteristics of a two wheeler gasoline engine	Prof. R. J Jani
2	140280711004	CHUDASAMA MAHESH MASARIBHAI	Experimental Investigation on Improving the performance of I.C. Engine by varying Advance piston coating material	Prof. Y. D. Vora
3	140280711007	DHANAK DILIPKUMAR VAKTAJI	Downdraft gasification modeling: Thermodynamic equilibrium approach	Prof. V. R. Patel
4	140280711008	GAMETI SANAT MAGANBHAI	Design Optimization of Air Dam for Lift reduction of a car using experimental set up in Wind Tunnel and CFD Analysis	Prof. H. P. Patel
5	140280711009	KAPADIA GARVISH ASHVINKUMAR	Parametric Optimization of 4-Stroke Spark Ignition Engine fuelled with Ethanol blended Gasoline using Response Surface Methodology	Prof. P. D. Patel
6	140280711010	PARMAR MAYANKKUMAR KHANABHAI	Comparative Assessment of Aerodynamic Forces Generated Due to Wind	Prof. D. U. Panchal

			Deflectors of Passenger Car by CFD and Experimental Method	
7	140280711012	PATEL NEJAL NARESHBHAI	Experimental investigation on effect of Exhaust Gas Recirculation (EGR) on Biofuel-Diesel fuelled HCCI Engine using External Fuel Vaporizer.	Prof. S. K. Dabhi
8	140280711013	PAWAN KISHORE JHA	Experimental Investigation on performance of Diesel engine fuelled with Natural Gas (CNG)-Diesel on HCCI mode	Prof. V. G. Trivedi
9	140280711014	PITHIYA VIJAY NATHABHAI	Experimental Investigation on Effect of CNG Substitution on Performance and Emission of Diesel Piloted Dual Fuel Engine	Prof. P. C. Sheth
10	140280711016	SHUKLA ADITYA HITENDRA	Optimization of Natural Gas Mixture Design Using Computational Method for HCCI Engine by Improving Swirl Effect	Prof. M. A. Shaikh
11	140280711018	VISHNUBHAI PRAJAPATI	Experimental Investigation on Performnace and Emissions of Mahua Biodiesel in CI Engine Employing EGR (Exhaust Gas Recirculation)	Prof. P. V. Jotaniya
12	140280711019	MUSA JACOB KHATRI	Aerodynamic Drag Reduction of a Passenger Vehicle by Controlling the Wake Using CFD Analysis	Prof. P. D. Patel

3) MOU with Industry/ or other organisation.

Sr.No.	MOU with(Company/ Organization)	Purpose	Department	Validity
1	Kodiyar CAD Center India Pvt. Ltd.	Knowledge Sharing	Automobile and Mechanical	06/01/2013 to 06/01/2018 (5 years)
2	Bluechip Infocorp Pvt. Ltd	Knowledge Sharing	Automobile and Mechanical	28/04/2016 to 28/08/2019 (3 years)



4) Workshops, seminar and expert lectures conducted

- 15 days (15th June to 29th June ,2015)Institute Industry collaborative Student Internship program “**AUTO VIGYAN**” was organized by L.D.College of engineering, Automobile engineering department in collaboration with Industry partner Carmate Tech Center and Gujarat Technological University. As a part of this program One day visit at **General Motors, Halol** was organized.



- **Solidworks Authorized Training Center in association with Edubotix Innovations and Engineering Technique** conducted a successful seminar on SOLIDWORKS & ITS SCOPE on 9th September 2015. Duration for the seminar was 2 Hours. Total 120 students from Automobile and Mechanical branch actively participated and shown enthusiasm. Objective of the seminar was to spread awareness about the latest technology and designing trends in market and how solidworks is used in different industries and because of its unique features how it is the most user friendly software.



- Seminar on **Creo Capabilities and PTC Certified Course** and conducted by **BlueChip InfoCorp Pvt. Ltd.** For the Student of Mechanical and Automobile engineering department of semester 5 and 7 on **14/07/2015** at **Aryabhata Hall** from **10.30 a.m. to 12.30.**
- There was a Seminar on **PradhanmantriKaushalyaVikasYogja (PMKVY)** conducted by Sarjakeeducation, Gurukul, Ahmedabad For the Student of Mechanical and Automobile engineering department for the students of semester 7 and 5 on 15/6/2015 and 16/6/2015 at **Aryabhata Hall** From 5.15 to 5.45 p.m.. They highlighted the skill requirement and present crisis and role for same and how the PMKVY is planned to cope up the same .



5) Industrial visits conducted by department

Sr No	Semester	Date	Place of visit	Faculty Accompanied
1	5	07-08-2015	BMW workshop, Parsoli Motors Ahmedabad	Prof. M. A. Shaikh Prof. V. R. Patel Prof. D. J. Parmar
2	3	10-08-2015	S.T.. Workshop, Naroda, Ahmedabad, Gujarat	Prof. M. A. Shaikh Prof. V. G. Trivedi
3	6 & 8	15-06-2016	Volkswagen Plant, Chakan, Pune	Prof. S.N.Patel

BMW workshop, Parsoli Motors Ahmedabad

An industrial visit to Parsoli Motor Works Pvt. Ltd. BMW was organized by the students' club **SAE LDCE** of L. D. College of Engineering, Ahmedabad on 7th August, 2015. In which 17 students from the institute and 9 core team members were present at the workshop along with three faculty advisors, Prof M.A. Shaikh, Prof. D.J.Parmar and Prof. V.R.Patel from the institute. The visit was coordinated by the core team member Saurabh Trivedi. **Mr. Akshat Shukla, General Manager Sales, Parsoli Motors** and **Mr. Mrudul Kothari, Workshop Manager, BMW workshop** helped the students to make this visit possible.



S.T.. Workshop, Naroda, Ahmedabad, Gujarat

On 10th AUGUST,2015 SAE club LDCE organized one day visit to GSRTC Workshop, Naroda for 1st and 2nd year students under consideration club core members **Kishan Thakkar, Saurabh Jariwala, Ankit Prajapati, Ketan Bhavsar and Chintan Agrawal.**



Volkswagen Plant, Chakan, Pune

On 14th June 2016 SAE club LDCE organized a 4 day visit to Volkswagen Pune plant, for 3rd and 4th year students under the club president Saurabh Trivedi and our faculty Prof. Sulay Patel.



6) Extra Ordinary Achievements by Students and Faculty

- The paid internship at **Mercedes Benze –Bangalore** for **Ridhhi Patel and Unmit Parmar of sem-7 Automobile Engineering** has started from 30/05/2016. Their selection has been done after vigorous interview from L.D.C.E Ahmedabad and other college of India. Correspondence and interview is conducted by **Prof. V. G. Trivedi**.
- **Prof. V. R Patel has acquired Ph.D. in the field of Energy and Alternate Fuels.**
- **Prof. P.D.Patel has submitted synopsis to acquire Pd.D.**

7) Publications

Sr. No	Name of Faculty	Title of Paper	Name of Journal	Date of publication/	ISSN/ISBN No.
1	R.J.JANI	Effect of hydrogen and oxygen addition as a lean mixture on emissions and performance characteristics of two wheeler gasoline engine	international journal of engineering development and research	vol 4 issue 2 may 2016	ISSN-2321-9939-IJEDR1602179-PAGE NO-1027-1031
2	R.J.JANI	Comparative performance and emissions of a lean mixed DTS-I spark ignition engine operated on single and dual spark	international journal of engineering development and research	vol 4 issue 2 may 2016	ISSN-2321-9939-IJEDR1602163-PAGE NO 939-943
3	V.R.Patel	Biomass Gasification: A Modern Approach for Renewable Energy Utilization	Global Research and Development Journal For Engineering	Vol. 1, Issue 6, May 2016	ISSN-2455-5703
4	V.G.Trivedi	Experimental Investigagtion on Performance of HCCI combustion in diesel engine with gaseous fuel-natural gas(CNG)	International Journal of Science and Technology and Engineering	Vol.2 , Issue-7, Jan 2016	ISSN-2349-784X
5	V.G.Trivedi	Experimental Investigagtion on Performance of diesel engine fuelled with natural gas(CNG)-diesel on HCCI mode.	International Journal of Science and Technology and Engineering	Vol.2 , Issue-7, MAY 2016	ISSN-2349-784X

6	P.D.PATEL	Surface roughness analysis of piston assembly of CI engine fuelled with diesel, bio-diesel and di ethyl ether (DEE) during long term endurance test.	5 th Nuicone at Nirma University	on 25 th - 28 th November 2015	International conference
7	P.D.PATEL	Box-Behnken based Response Surface Methodology for Optimization of Operational Parameters of Compression Ignition Engine Fuelled with Blend of Diesel, Biodiesel and Diethyl Ether (DEE).	Bio fuel. Taylor and Francis	DOI: 10.1080/17597269.2015.1118784	International journal , Taylor and Francis
8	P.D.PATEL	Bio Fuels for Compression Ignition Engine: A Review on Engine Performance, Emission and Life Cycle Analysis.	Renewable & Sustainable energy Reviews.	16:2016;24-43	International journal , Renewable & Sustainable energy Reviews. , Taylor and Francis

8) List of STTP/FTP conducted

Two Week STTP on “Modelling, Analysis and Automation in Engineering

Automobile and Mechanical Engineering department have arranged two weeks ISTE Approved STTP on Modelling, Analysis and Automation in engineering from 23rd May, 2016 to 4th June, 2016 in collaboration with Siemens DesignTech and Blue chip Infocorp.



47 participants from various government and private institutions have attended STTP.

Faculty Training participation

Sr. No	Name of Faculty	Name or Title of Training	Training duration		Location of training
			Start Date	End Date	
1	PROF.R.J.JANI	Modelling , Analysis and Automation in Engineering	23/5/2016	4/6/2016	COE-SIEMENS-L.D.Coolege of engineering-ABAD
2	PROF.V.R.PATEL	Modelling , Analysis and Automation in Engineering	23/5/2016	4/6/2016	COE-SIEMENS-L.D.Coolege of engineering-ABAD
3	PROF.V.R.PATEL	Fluid Mechanics	6/6/2016	18/6/2016	IIT Gandhinagar
4	PROF.M.A.SHAIKH	Modelling , Analysis and Automation in Engineering	23/5/2016	4/6/2016	COE-SIEMENS-L.D.Coolege of engineering-ABAD
5	PROF.M.A.SHAIKH	Fluid Mechanics	6/6/2016	18/6/2016	IIT Gandhinagar
6	PROF.S.N.PATEL	Modelling , Analysis and Automation in Engineering	23/5/2016	4/6/2016	COE-SIEMENS-L.D.Coolege of engineering-ABAD
7	PROF.R.J.CHOUBE	Modelling , Analysis and Automation in Engineering	23/5/2016	4/6/2016	COE-SIEMENS-L.D.Coolege of engineering-ABAD
8	PROF.P.D.PATEL	Modelling , Analysis and Automation in Engineering	23/5/2016	4/6/2016	COE-SIEMENS-L.D.Coolege of engineering-ABAD
9	PROF.D.J.PARMAR	Modelling , Analysis and Automation in Engineering	23/5/2016	4/6/2016	COE-SIEMENS-L.D.Coolege of engineering-ABAD
10	PROF.D.J.PARMAR	Fluid Mechanics	6/6/2016	18/6/2016	IIT Gandhinagar
11	PROF.R.J.JANI	Application of GIS & Remote Sensing Technology for Disaster Management.	17/12/2015	19/12/2015	GIDM,Gandhinagar
12	PROF. V.G.TRIVEDI	Catia for Mechanical and allied engineering	25/05/2015	29/05/2015	NITTR, Ahmedabad
13	PROF. V.G.TRIVEDI	Engineering Equation Solver for Engineers	16/10/15	17/10/2015	LDCE, Ahmedabad
14	PROF. S.N.PATEL	INDUCTION PHASE 1	15/02/2015	26/02/2015	NITTR, BHOPAL

9) Result analysis sem wise (2015-2016)

<u>Automobile</u>	<u>Total</u>	<u>Pass</u>	<u>Pass (%)</u>	<u>Fail</u>	<u>Fail (%)</u>
Sem 1 S 2015	58	43	71.14	15	28.86
Sem 2 W 2015		AWAITED		AWAITED	
Sem 3 S 2015	73	44	60.27	29	39.73
Sem 4 W 2015		AWAITED		AWAITED	
Sem 5 S 2015	67	53	79.10	14	20.9
Sem 6 W 2015	74	63	85.14	11	14.86
Sem 7 S 2015	76	73	96.05	3	3.95
Sem 8 W 2015	74	74	100	0	0




10) Other Departmental Activities

Kaizen 2016- Showcasing of students' project is arranged on 22/04/2016

- **BE. Final Year Projects- 20**
- **Student participation** - More than 76 students (BE Final Year)
- **Staff participation – 9 Faculties**
- **Student Volunteers participation** – 10 (Final and pre-final year Students)
- **Visitors attendance** - Approx. 200 visitor from various departments and industry.

Jury Members Team

1. Dr. R N Patel
Head of Mechanical Engg Department
Institute of Technology, Nirma University
Ahmedabad.
2. Mr. Nishant Anand
Tata Motors, Sanand
3. Mr Shaan Varma
Director Car Mate
Ahmedabad

Prize	Name of Students	Title of the Project	Photograph	Name of Guide
First Prize	BAJANIYA JAYENDRAKUMAR HITESHBHAI	PRESSURE FEED LUBRICATING SYSTEM WITH MAGNETIC CHAMBER		PROF V G TRIVEDI
	BARAIYA HITESHKUMAR ARJUNBHAI			
	GAMIT RAHULKUMAR ANILBHAI			
	MISTRY JAYDEV PRAFULCHANDRA			
Second Prize	PARTH OTIYA	DESIGN AND DEVELOPMENT OF SELF LOCKING RATCHET TYPE BONNET HINGE		PROF D U PANCHAL
	ZANKHAN KHAMAR			
	JAINAM VORA			
	BHAVESH SITLANI			
Third Prize	SINGH OJASWA O.	Hydrocharged two wheeler engine		MAZAR .A. SHAIKH
	RAVAL NIPEN JAGDISHBHAI			
	DHARAIYA AAKASH DILIPBHAI			
	SEN PIYUSH RAMESHBHAI			

Safe Roads Safety Awareness by Mercedes Benz 9 October, 2015

Mercedes-Benz and its group companies Mercedes-Benz India (MBIL), Daimler India Commercial Vehicles (DICV), Mercedes-Benz Research and Development India (MBRDI) and Daimler Financial Services India (DFS) inaugurated Safe Roads – Ahmadabad at LD College of Engineering for two days. This was a unique Corporate Social Responsibility (CSR) initiative, as part of the multi-city awareness road-show that started in New Delhi, earlier this year. On 8th October, 2015 this initiative was started with inauguration ceremony. On the same day there was

display of some exhibits from Mercedes Benz which includes their unique “ESR 2009” model which is experimental safety vehicle by Mercedes. The exhibition included a crash test simulator, Alcohol Glasses, and Chassis module of that vehicle. There was also display of safety history of Mercedes Benz. The exhibition was opened to students of all branches and was well attended by students from other colleges also. On 9th October 2015 seminar was organized and the key speakers of the event were Mr. Jochen Feese, Head of accident research, sensor functions and pedestrian protection, Mercedes Benz cars, Shri Dr. Rajdeepsinh Jhala, Assistant Commissioner of Police Ahmedabad City, Mr. Ravishankar Rajaram, Technical Director (JP Research India Pvt. Ltd.), Dr. Snehal Shah, Orthopaedic Surgeon (Sneh Orthopaedic Hospital), and Dr. Jayraj Desai, MBBS, MS (Orthopaedics, EMRI 108). The S.A.E club welcomed the chief guest, Mr. Jochen Feese, with a small memento as a remembrance of the safety campaign.



Awareness program on Jeevan Astha helpline on 12th October 2015

Awareness program on jeevan astha helpline has been organized on 12th October 2015 at 03:00 PM in Aryabhata Hall, Main Building for the students. The main purpose of this program is to remain free from mental stress. Representative from jeevan astha helpline will come and conduct seminar for the students of our college.

ALL India Unique Toll Free Number – 18602662345 .

This programme is arranged in collaboration with Police Commissioner Office , Sector-27,Gandhinagar.

SAE LDCE Activities:

- **LDMS: LDCE Motorsports**
- The team LDCE Motorsports has participated the in following two national level events.
- BAJA SAE INDIA 2016-(16 to23 January 2016)
- BAJA STUDENT INDIA 2016-(19 TO 28 January 2016)
- With support Mechanical, IT, Textile and Automobile department’s students this multidisciplinary team is formed for above task under LDCE SAE CLUB and competed for above completions.
- The team stood 85th& 30th respectively but team gained lots of knowledge and experience from this events.



GTMS: GT Motorsports

The team GT Motorsports from Gujrat Technological University participated in Formula student India-21 to 28 January 2016 held at Buddha International Circuit, Delhi.The LDCE has hosted the samefor team coordination amongs the GTU affiliated colleges and Prof.Mazar A. Shaikh of Automobile department of L.D.C.E. has coordinated and guided

the team at each and every stages of car making and during the competition. Gujarat Technological University appointed L.D.College of Engineering, Ahmedabad as Host Institute for the Formula Student India- GTU Team and grants the amount of Rs. 14, 95,000/- to L.D.College of Engineering after consulting Faculties of various institutes Affiliated with GTU.

- 12 Affiliated institutes of GTU agreed to join this consortium and signed MOA with GTU with list of 5 interested students for this competition.
- As per the guidelines of GTU, L.D.College of Engineering appointed 3 faculty advisors as mentors, Prof.M.A.Shaikh, Prof.P.D.Patel and Prof.D.U.Panchal of Formula Student
- India- GTU Team and all the final decision will take by the Head of Mechanical Department, L.D.College of Engineering.
- Among 35 interested students of various colleges, final team list of 22 students for Formula Student- GTU Team was approved by the Head of Mechanical Department, L.D.College of Engineering.

ATV championship 3.0

- ATV Championship 3.0 organizes by SAE LDCE and SAE VGEC: 10, 11 and 12th March, 2016
- 31 teams from India were registered for the Championship and 13 teams participated in the main endurance event. The team Stallions Racing from Alard College of Engineering, Pune won the endurance event and also they were overall first in the ATV Championship 3.0.
- GTU Central Tech Fest ATV Championship 3.0 was organized by SAE LDCE and SAE VGEC club students at VGEC campus, Chandkheda.



- SAE CLUB, LDCE conducted a visit to the recently inaugurated **Vikram Space Centre(VSSE)**,a museum exhibiting the achievements and future programs of the **national organisation of space research (ISRO)**. About 58 students visited this center under the club core members **Saurabh Trivedi, Chintan Agrawal, Ketan Bhavsar and Saurabh Jariwala**.



Engine for Demonstration Donated by FORD INDIA on 4th September, 2015

The undertaking-cum-indemnity (“Indemnity”) is executed at **Sanand Vehicle Assembly and Engine Plant,FORD INDIA- Gujarat on 4th September , 2015** by having its Institute located at L.D.College Of Engineering ,Near Gujarat University, Navarangpura ,Ahmedabad-380015, India for donating the Engine of ASPIRE MODEL to Automobile Engineering Department ,L.D.C.E-Ahmedabad-india.For that Prof. R.J.Jani and Prof. M.A.Shaikh were remained present at FORD plant Behalf of the Institute.

