APPLIED MECHANICS MAGAZINE ABHIYANTRIKI



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Major Events

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Achievements

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Research Quotient

Funded Projects, Patents, Research Articles.

Internal Revenue Generation

IRG from testing and consultancy services.

L. D. COLLEGE OF ENGINEERING, AHMEDABAD

APPLIED MECHANICS DEPARTMENT

VISION

To mould the students into professionals abreast with latest skills, Innovative Research Orientation to enhance the Knowledge of Faculty Members and Academic Infrastructure to Excellence, and to serve the Society with Novel Technology.

MISSION

- 1. To combine quality education with career focused learning and the application of knowledge.
- 2. To provide ambience of research and innovation.
- 3. To provide the best resources along with expertise of faculty.
- 4. To inculcate professional ethics and instill the sense of responsibility towards the society.
- 5. To create opportunities for industry-academia collaboration in order to explore the new avenues in the field of civil engineering.

Message from Head of Department



Dear Reader,

It gives us immense pleasure to announce the launch of the "Abhiyantriki" – a magazine by the department of Applied Mechanics. The magazine will be published annually by the departments to disseminate all the relevant information to its stakeholders. The department believes that each student who enters into the Civil Engineering Department of the L. D. College of Engineering from day one through this magazine will get to know their department, faculty members, myriad of activities conducted by the departments and the achievements of its students. This annual edition will also help us to reach out to our lustrous Alumni and industry partners giving impetus to Industry-academia collaboration.

Students will be encouraged to participate in various technical & cultural events and parking a place for themselves in this annual edition. It will motivate the students and faculty members to endeavour more to bring out the best in each one of them.

We would request all the faculty members and all our dear students to become a never-ending source of invaluable contribution to **Abhiyantriki** through their authentic activities and achievements on various fronts i.e., professional, academic, curricular and extra-curricular. We also look forward to suggestions/recommendations in this inaugural edition so as to come up with a better and more information editions in coming years.

ABOUT THE DEPARTMENT

The Department of Applied Mechanics is a vital offshoot of Civil Engineering Program at L. D. College of Engineering. Applied Mechanics department has a distinguished and technically well-versed faculty imbued with a sense of commitment and sincerity. As the HOD of the department it is a matter of immense pride to bring to you the multifaceted activities and achievements of the department. We are a department of 17 faculty members, 3 of these holding Doctorates, 7 of these are pursuing Doctorate of Philosophy and the rest have a Master's Degree. The department boasts of 2 Post graduate courses in Structural Engineering and Geo-tech, and UG program with electives in Structural Analysis and Geo-tech.

The strength of the courses offered by this department lies in a strong technical and field experience of the faculty who are involved in research and consultancy over and above their regular teaching wherein they actively involve the students through quizzes, models and field exercises to make learning an enriching experience. Faculty members are also involved in myriad of activities such as organizing of training programs for working professionals in various government departments to keep them updated on recent and future trends., expert talks, industrial visits for students thereby strengthening the industry-academia collaboration. Faculties also make a significant contribution in revenue generation by carrying out a number of testing and consulting services.

MEET YOUR FACULTY



Name: Major Dr. C. S. Sanghvi Designation: Principal Qualification: PhD (Civil Engg. – Earthquake Engineering) SVNIT, Surat E mail: <u>principal@ldce.ac.in</u> Research interest: Earthquake Engineering, Structural Engineering

Name: Dr. Gopal M. Tank Designation: Professor & Head of the Department Qualification: PhD (Civil Engg. – Earthquake Engineering) IIT Roorkee E mail: <u>head applied@ldce.ac.in</u> Research interest: Earthquake Engineering, Structural Engineering





Name: Prof. D. R. Tarachandani Designation: Associate Professor Qualification: M.E. Civil (CASAD), Gujarat University E mail: <u>drtarachandani@ldce.ac.in</u> Research Interest: Structural Analysis and Design, Concrete

Name: Prof. Mayur G. Vanza Designation: Associate Professor Qualification: M.E. Civil (CASAD), Gujarat University E mail: <u>mgvanza@yahoo.co.in</u> Research Interest: Design of Structure and Geotechnical Engg.





Name: Prof. P. J. Mehta Designation: Associate Professor Qualification: M.E. Civil (CASAD), Gujarat University E mail: <u>mehta.priti67@gmail.com</u> Research Interest: Structural Analysis and Design, Geotechnical

Name: Prof. A. J. Shah Designation: Assistant Professor Qualification: M.E. Civil (CASAD), Gujarat University E mail: <u>alpa.jogin@ldce.ac.in</u> Research Interest: Structural Analysis and Design, Geotechnical Engineering





Name: Prof. D. H. Raval Designation: Assistant Professor Qualification: M.E. (Structural Engineering), Mumbai University E mail: <u>deeparaval@ldce.ac.in</u> Research Interest: Composites, Finite Element Analysis

Name: Prof. A. G. Hansora Designation: Assistant Professor Qualification: M.E. Civil (CASAD), Gujarat University E mail: <u>ashwinghansora@ldce.ac.in</u> Research Interest: Structures





Name: Prof. K. A. Parmar Designation: Assistant Professor Qualification: M.E. Civil (CASAD), GTU, Ahmedabad E mail: <u>kaparmar.19@gmail.com</u> Research Interest: Design of concrete & Steel structures, Concrete technology

Name: Prof. U. K. Patel Designation: Assistant Professor Qualification: M.E. Civil (GEO), GTU, Ahmedabad E mail: <u>ushapatel1964@gmail.com</u> Research Interest: Geo-technical Engineering





Name: Prof. (Dr.) M. V. Shah Designation: Assistant Professor Qualification: Ph.D (Civil Engg), M. S. University E mail: <u>drmvshah@ldce.ac.in</u> Research Interest: Foundation Engg., Soil-Structure Interaction, Ground Improvement Techniques

Name: Prof. C. D. Patel Designation: Assistant Professor Qualification: M.E (Civil – CASAD), Gujarat University E mail: <u>cdpatel.casad@ldce.ac.in</u> Research Interest: Design of Reinforced Concrete and Steel Structures





Name: Prof. P. I. Modi Designation: Assistant Professor Qualification: M.E. Civil (CASAD), Gujarat University E mail: poonammodi@ldce.ac.in Research Interest: Concrete technology, Conditional Assessment and repairs & strengthening of Concrete structures, Design of reinforced concrete structures

Name: Prof. P. H. Andharia Designation: Assistant Professor Qualification: M.E. (Structural Engineering), Sardar Patel University, Vallabh Vidyanagar E mail: <u>payal.andharia@ldce.ac.in</u> Research Interest: Structural Analysis, Design of R.C.C. Structures, Design of Steel structures.





Name: Prof.B.R.Patel Designation: Assistant Professor Qualification: M.Tech. (Structural Engineering), Sardar Vallabhbhai National Institute of Technology, Surat E mail: <u>bansalcivil89@ldce.ac.in</u> Research Interest: Concrete Technology, Design of R.C. & Steel

Name: Prof. S. R. Singh Designation: Assistant Professor Qualification: M.Tech. (Geotechnical Engineering), Sardar Vallabhbhai National Institute of Technology, Surat E mail: <u>srsingh@ldce.ac.in</u> Research Interest: Geotechnical Engineering, Foundation Engineering, Ground Improvement Techniques.





Name: Prof. Y. J. Chauhan Designation: Assistant Professor Qualification: M.E. Civil (CASAD), Gujarat Technological University E mail: <u>yjc@ldce.ac.in</u> Research Interest: Ocean engineering, Earthquake Engineering, Bridge Engineering, Special Concrete, Structural Health Assessment **Major Events & Activities**

Technical workshop/ Events

At GIDM

Two days training Programme on Basics of Disaster Risk Management & Developing Institute Level Disaster Risk Management Plan in association with Gujarat Institute of Disaster Management (GIDM) under the aegis of The Institution of Engineers (India) Student Chapter, Civil Engineering, approved by DTE & ISTE.

The workshop comprised of two major activities. One was an Online Lecture by RSPM of GIDM on 21-4-2023. And second activity was the Field visit to GIDM and ISR on 26-4-2023 and an interesting hands-on



session at GIDM on developing Institute Level Disaster Risk Management Plan. The workshop



was attended bv 102 students. Major Dr. C. S. Sanghvi (Head, Applied Mechanics) was the convener and Prof. A. G. Hansora, Prof. Poonam I. Modi, Prof. B. R. Patel and Prof. Y. J. Chauhan were coordinators. The the laisioning and resource person from GIDM was Shri Piyush Ramteke.

Dr. R. C. Sonpal Memorial Lecture Series

An Expert talk was organised on "Challenges in Geotechnical Engineering " on 12th October, 2022. The expert for the talk was Dr. K. K. Moza -UNDP Fellow Ex-Govt of India, Senior Geotechnical Consultant under the IGS Ahmedabad Student Chapter, The Institution of Engineers (India) Student Chapter and sponsored by M. K. Soil testing Laboratory Ahmedabad.



Short term training Programs

Department in its endeavour to strengthen its Industry-Academia collaboration and to keep its fraternity abreast of all the latest development in every revolutionising field of Civil Engineering, organizes a number of training programs under the aegis of reputed agencies such as "*ATAL*", "*GIAN*", "*DTE & GUJCOST*".



⇒ One Week Online Faculty Development Programme on "<u>Advances in Earthquake safe</u> <u>Design and Construction Practice</u>" under the aegis of AICTE Training and Learning (ATAL) academy from 7th Feb – 11th Feb. 2022. The main objective of this FDP was to discuss and disseminate the concepts of ERD and challenges in making Earthquake safe structures.

Eminent speakers from esteemed organization such as IIT Madras, IIT Roorkee, IIT Mumbai, MNIT Jaipur, NU Ahmedabad, SVIT Vasad and esteemed professional organizations such as VMS Mumbai, SQVe Ahmedabad shared their knowledge and vast experience through their insightful sessions. The Inaugural session of the STTP was presided over by International Earthquake Expert Dr. C. V. R. Murthy, Institute Chair Professor, IIT Madras.



 \Rightarrow One Week Online Faculty Online Short-Term Training Programme (STTP) on "<u>Design of</u> <u>Confined Masonry Buildings for Earthquake Disaster Risk Mitigation in India</u>" under the aegis of Global Initiative of Academic Networks (GIAN) Scheduled from 6th June – 10th June 2022. The training was approved by DTE and Sponsored by GIAN.

Dr Svetlana Brzev, Professor at British Columbia University, Canada delivered Session as an expert foreign faculty besides other speakers. The training first of its kind under the banner of GIAN was well attended by about more than 200 number of participants. The Inaugural session was graced by presence of Principal Madam Dr. Rajul K. Gajjar and Dr. M. C. Chudasama was present in the Inaugural session as the Institute Coordinator for GIAN initiative. The valedictory session was chaired by Dr. B. J. Shah (Principal, GEC, Modasa).



 \Rightarrow One Week Inter-Disciplinary Short-Term Online Training Programme (STTP) On "<u>Disaster</u> <u>Management and Resilience Building</u>" from 1st August – 5th August 2022.

Eminent Speakers were, Dr. Surya Prakash Gupta (NIDM), Dr. C. V. R. Murty (IITM), Dr. P. K. Garg (IITR), Dr. Hemant B. Kaushik (IIT Guwahati), Dr. Arindam Dey (IIT Guwahati), Dr. P. K. Joshi (JNU), Dr. S. M. Yadav (SVNIT), Prof. Manorama Mohanty (IMD), Dr. V. M. Patel (UVPCE), Dr. Kamlesh Upadhyay (Dean Civil Hospital Ahmedabad), Dr. Santosh Kumar (ISR), Dr. C. S. Sanghvi (GECM), Dr. Repaul Kanji (GIDM), Mr. Himalay Kotadiya (GIDM). Shri. P. K. Taneja, Director General, Gujarat Institute of Disaster Management has graced the Valedictory function as Chief Guest. There were total 73 participants form different institutes/organization in the mentioned STTP.

STUDENT'S CHAPTER

Bureau of Indian Standards (BIS)



Department had a feather added in its cap in form of the Student's chapter under the BIS. A number of activities kickstarted under its aegis. The first visit activity was the to **Bhaskaracharya** National Institute for Space Applications and Geo-informatics (BISAG-N), Gandhinagar on 1st June'23. e Total 50 students were part of this visit. The visit is coordinated

by Prof. A. J. Shah, Prof. A. G. Hansora, Prof. K. A. Parmar. During the visit of BISAG-N, the students were given insightful information and understanding about satellite communication, remote sensing, working methods, uses and importance of geo-informatics systems. The students were briefed about the usefulness of software related to the geo-informatics system.

INDUSTRIAL VISITS





Our Students – Our Pride

National Champions

In the grand final round of National Awards Civil Competition-2022/23 organized by INSDAG (Indian Institute of Steel Development and Growth), three teams from L.D. College of Engineering, under the guidance of Prof Chintan D Patel, were crowned to all three positions as 1st, 2nd-A, and 3rd-A. The participating teams had to design a Steel Intensive Archery Academy with hostel and had to present the same in the final round. Team W-04 consisting of members Chintan Makwana (ME), Sushil Patel (BE), Arvi Prajapati (BE) and Chandresh Naina (BE) secured first position among all teams and have been awarded with cash prize of INR 50,000/- with certificates and mementos. Team W-18 consisting of one postgraduate student Keyur Rajpopat secured second position with prize money of INR 30,000/-. Team W-02 consisting of



all BE final year students, Virat Raval, Raju Odedara, Riddhi Jadeja, and Parth Ragadwala secured third position with cash prize of INR 20,000/- with mementos.

A total of 120+ teams from all over India had participated in this event out of which 16 teams were shortlisted for this final round in which all the four teams selected from west zone were from LD College of Engineering. In the final round, among various premium colleges, including Trinity College of Engineering, NIT Kurushektra, IITR, and many more, LD College of Engineering comprehensively emerged victorious.

Kaizen Winners

Vasu Shah and Rushit Chaudhari were conferred with 1st Prize for their project entitled "End to end solution of C&D" and the second prize was conferred to Virat Raval for his internship in "Steel intensive archery academy with hostel".



Gold medallist

- Aditya Pal, passed out student of Batch 2022, was awarded Gold Medal by GICEA on 11th Feb. 2023 for his excellent performance in subject Repairs and Rehabilitation of Concrete Structures.
- ME Geotech Student Harsh Mistry (2022 -Enrollment No. 200280743016) was awarded GTU-Gold Medal for securing overall highest marks in Masters of Engineering course of Geotechnical Engineering amongst all colleges under GTU.
- Shashwat Mehta (ME Student of Geotechnical Engineering 2021 Pass out) received gold medal from the GTU for securing the 1st rank in ME Geotechnical Engineering. He was also conferred with gold medal from the GICEA for securing the 1st rank in ME Geotechnical Engineering on 23rd April 2022.

Aced the Hackathon

Students of B.E. Civil Sem VI named Tarang Patel, Sneh Bhavsar, Preet Vasava and Ritu Barad under the mentorship of Prof. C. D. Patel, were declared winner in "Azadi Ka Amrit Mahotsav Hackathon 2022" and awarded 1st Position and prize money of Rs.50,000/- for their project entitled "Pre-monsoon and Post Monsoon Inspection of Bridge.



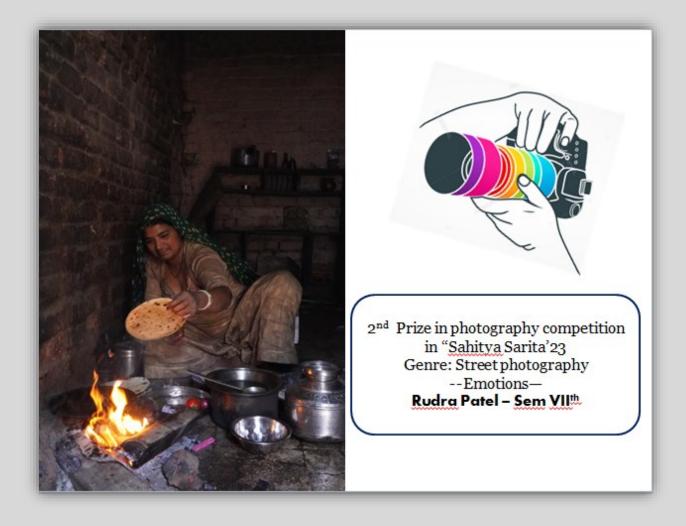


Aced the Technical quiz

Two PG students Darshil Satnami and Ajay bagged a prize money of Rs. 21,000/- and trophy in the Technical Quiz organized by Knowledge Studio. The 1st Runner up team was also from LDCE. The team comprised of students of B.E. Sem VII (Civil), Maulik Chotlaiya and Rohit Chariya. The runner up team got a prize money of Rs. 12000/-.



Creative Quotient





Faculty Achievements

- Dr. C. S. Sanghvi, Dr. Manish V. Shah, Prof. Chintan D. Patel and Prof. Poonam I. Modi were felicitated for their remarkable contribution to the Innovation Ecosystem of college through high end research publications, student mentoring for Hackathon and National Level competition such as INSDAG and for Patent publication respectively for the year 2022-23. The faculty members were felicitated on Foundation Day celebration of LDCE on 20th June'23 amidst august presence of Shri Banchha Nidhi Pani (IAS), Commissioner, Technical Education, GoG.
- Prof. Chintan D. Patel and Prof. Bansal R. Patel delivered expert sessions on Testing and Inspection of Bridge and other Structures in one day training programme conducted for Government Officials of Surat R&B Circle at SVNIT, Surat on 22nd June 2023.
- Prof. Mayur G. Vanza was conferred with "Bharat Vikas Award" on 6th Jan'2023 by Institute of Self Reliance, BVA, for his esteemed contribution in the field of Structural and Concrete Technology.
- Prof. Yogesh J. Chauhan delivered expert lectures on "Numerical Modelling of Offshore Triceratops in ANSYS AQWA" at Ocean Engineering Department, IIT Madras.
- Prof. Yogesh J. Chauhan successfully completed SWAYAM-NPTEL MOOC course titled "Bridge Engineering" with gold badge and being topper in the course.
- Prof. Yogesh J. Chauhan successfully completed SWAYAM-NPTEL MOOC course titled

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"Retrofitting and Rehabilitation of Civil Infrastructure" with silver badge and being topper in the course.

- Prof. Yogesh J. Chauhan successfully completed SWAYAM-NPTEL MOOC course titled "Engineering Mechanics – Statics and Dynamics" with silver badge and being topper in the course.
- Prof. Yogesh J. Chauhan received certificate of appreciation for successfully completing NPTEL SWAYAM Domain – "Structural Design". Till date only 2 candidates across the country have received SWAYAM-NPTEL Domain Star certification in "Structural Design" Domain.
- Prof. Yogesh J. Chauhan contributed as a reviewer in the esteemed review panel of one of the top Thai journals in Maritime Technology and reviewed research article for Maritime Technology and Research (MTR)
- Prof. Yogesh J. Chauhan received a certificate of recognition from AICTE and Ministry of Housing & Urban Affairs (MoHUA) for valuable contribution as mentor and water warrior for Mission Amrit Sarovar Jal Dharohar Sanrakshan AICTE Internship 2022.
- Dr. Manish V. Shah has received "Certificate of Appreciation" for his efforts in preparing the Question bank of more than 40000 questions (including both in English & Gujarati) booklet for India's biggest "Gujarat Gyan Guru Quiz (G3Q) 2022" organized by Department of Education, Govt of Gujarat during Aug 2022 to October 2022.
- A patent has been granted to Dr. Manish V. Shah, Dr. Atindra Shukla and Hetal Suvar (PG Geotech Student) for an invention entitled "A Carbon Dioxide Absorbed Municipal Solid Waste" for the term of 20 years from 11th February 2022 with the provision of the Patent Act, 1970. Patent was granted on 31st March 2023.

Research & Innovation Quotient

- GUJCOST funded project entitled "Assessment of Influence of presence of microorganisms on thermal conductivity of soils and its potential impact on Soil-Structure Aggregation" was successfully completed by Principal Investigator Dr. Manish V. Shah and Prof. Shalini R. Singh as Co-Principal investigator. The fund assistance of Rs. 50,000 was given by GUJCOST.
- 3 Proof-of-Concepts from the Department of Applied Mechanics have been sanctioned for financial support under the SSIP 2.0 Phase 2 order dated 23rd May 2023. These POC's are "Development of Low-cost Miniature Wave tank (Wave Simulia 1.0)" under mentorship of Prof. Y. J. Chauhan and Dr. C. S. Sanghvi, "Ecolatte Cafeteria" under mentorship of Prof. C.

D. Patel and Prof. B. R. Patel, and "Dual Flexible Triaxial Cell" under the mentorship of Dr. Manish V. Shah.

Paper Publications

- Dr. Manish V Shah & Sandipkumar Kori published research paper entitled "Assessment of Pozzolanic Reaction and Resulting Strength of Dune Sand Stabilized with Cement Supplementary Pozzolanic Waste Materials" in 'Journal of Civil, Construction and Environmental Engineering' 2022;7(6), pp. 118-124, doi: 10.11648/j.jccee.20220706.13, ISSN: 2637-3882 (P), ISSN: 2637-3890(online).
- S. Chandrasekaran, B. Shah, and Y. J. Chauhan, "Tether response of offshore Triceratops under hurricane conditions," Structures, Elsevier, Volume 51, May 2023, Pages 513-527, <u>https://doi.org/10.1016/j.istruc.2023.03.059</u>.
- Dr Manish V Shah & Rutvik K Kalthiya (PG Student) published research paper entitled "Model Study on Single Pile Subjected to Axial and Inclined Embedded in Contaminated Soil" in Springer Book Series- Lecture Notes in Civil Engineering as a Part of Proceedings of IGC 2021' Foundation and Forensic Geotechnical Engineering, LNCE Vol 295,Nov 2022, DOI: 10.1007/978-981-19-6359-9_10, Page: 93-106, Print ISBN: 978-981-19-6358-2, Online ISBN 978-981-19-6359-9.
- S. Chandrasekaran, B. Shah, and Y. J. Chauhan, "Fatigue Assessment of Offshore Triceratops Restraining System Under Hurricane-driven Metocean Conditions" Int. J. Steel Struct., no. 0123456789, 2022, <u>https://doi.org/10.1007/s13296-022-00689-w</u>.

Internal Revenue Generation (IRG)

The faculty members of the department are constantly involved in carrying out a number of Testing and Consultancy works throughout the year with a large clientele base. The revenue worth Rs 12.27 lacs and Rs.113.5 lacs was accrued from testing and consultancy works in the financial year 2012-22 and 2022-23.



L. D. COLLEGE OF ENGINEERING, AHMEDABAD

VISION

To contribute for sustainable development of nation through achieving excellence in technical education and research while facilitating transformation of students into responsible citizens and competent professionals.

MISSION

- 1. To impart affordable and quality education in order to meet the needs of industries and achieve excellence in teaching-learning process.
- 2. To create a conducive research ambience that drives innovation and nurtures research-oriented scholars and outstanding professionals.
- 3. To collaborate with other academic & research institutes as well as industries in order to strengthen education and multidisciplinary research.
- 4. To promote equitable and harmonious growth of students, academicians, staff, society and industries, thereby becoming a center of excellence in technical education.
- 5. To practise and encourage high standards of professional ethics, transparency and accountability.

CHIEF PATRON



CHIEF PATRON Major Dr. C. S. Sanghvi PRINCIPAL (I/C) LDCE, Ahmedabad

CONVENER



Convener Prof. Dr. G. M. Tank Professor & Head Applied Mechanics Dept. LDCE, Ahmedabad

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