G H Patel College of Engineering & Technology

(A Constituent College of CVM University)

MECHANICAL ENGINEERING DEPARTMENT

Newsletter:
Volume 8
Issue 2

Inside this issue:

It is pleasure to release issue 02 of academic year 2022/23. This is volume 08 and issue number 02 containing noteworthy details of the department during even semester of the academic year 2022/23. Students' achievements, books published by faculty members, organization and delivery of expert talks, results and placements are the highlights of this issue along with views from current students and alumni.

Dept. Head

Dr. Darshak Desai

Greetings to our esteemed readers! As the newly appointed Editor of the Mechanical Engineering Department's newsletter, I am excited to embark on this journey of sharing the latest developments, insightful research, and remarkable achievements in our dynamic field. From engaging events and enlightening industrial visits to inspiring talks and noteworthy student accomplishments, our department is a hub of activity and growth. With boundless enthusiasm, I am committed to shedding light on the innovative spirit that defines our department. Together, let's explore uncharted realms of knowledge, crafting a narrative that informs and invigorates.

EDITOR

Prof. Sukritindra Soni

Student Editor Team

उद्यमेन हि सिध्यन्ति कार्याणि न मनोरथैः।
न हि सुप्तस्य सिंहस्य प्रविशन्ति मुखे मृगाः।।

JIREN PANDYA
(4TH YEAR)

VANDAN JOSHI
(4TH YEAR)

अलसस्य कुतो विद्या अविद्यस्य कुतो धनम् ।
अधनस्य कुतो मित्रममित्रस्य कुतः सुखम् ॥

MEET PATEL
(3RD YEAR)

Student Achievement

Innovative project on "Automatic Iron Machine"

Two of the third-year students of the Mechanical Engineering Department, ***Mr. Jiren Pandya and Mr. Vandan Joshi*** *bagged Exxat innovation and start-up grant of INR 20000 for their innovative project on* ***"Automatic Iron Machine".***

International Karate Championship

Jay Rajput*, Mechanical engineering student of second year was felicitated by* ***Gaurav Puraskar*** *on 78th Anniversary day (3rd March 2023.) of Vallabh Vidyanagar for his extraordinary performance in International Karate Championship. The GCET family feels proud of his achievement.*

ACHIEVEMENT IS LARGELY THE PRODUCT OF STEADILY RAISING THE LEVELS OF A S P I R A T I O N S AND HARDWORKS.

Student Achievement

OPPORTUNITY DON'T HAPPEN YOU CREATE THEM.

Excellent Performance in GATE 2023

GATE 2023

Scorecard

Name of Candidate	DAVE DEEPBHAI HARESHKUMAR
Parent's/Guardian's Name	DAVE HARESHKUMAR PRABHASHANKAR
Registration Number	ME23S22007086
Date of Birth	23-Oct-1999
Examination Paper	Mechanical Engineering (ME)

GATE Score:	630	Marks out of 100:	53		
All India Rank in this paper:	1133	Qualifying Marks*	General	EWS/OBC (NCL)	SC/ST/PwD
Number of Candidates Appeared in this paper:	63489		28.4	25.5	18.9

Valid up to 31st March 2026

Prof. Preetamkumar M. Mohite
Organizing Chairman, GATE 2023
on behalf of NCB-GATE, for MoE

da7008bb2a122df35a3e57d5ae35c299

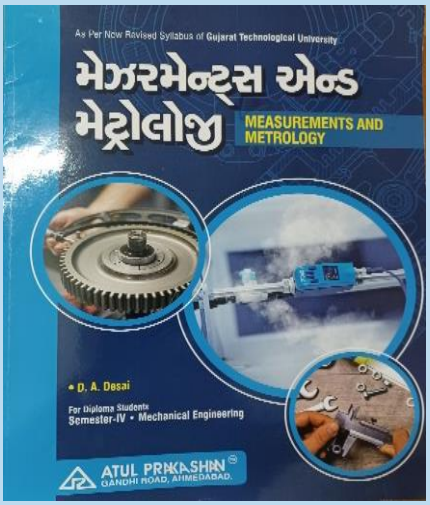
* A candidate is considered qualified if the marks secured are greater than or equal to the qualifying marks mentioned for the category for which valid category certificate, if applicable, is produced along with this score card.

*Mr. **Dave Deepbhai Hareshbhai**, an alum of the Mechanical Engineering Department, has exhibited remarkable achievement by triumphing over the Graduate Aptitude Test (GATE) 2023. On the distinguished date of 16th March, he clinched a commendable GATE score of 630, positioning himself prominently at an impressive **All India Rank (AIR) of 1133** within the realm of Mechanical Engineering. This accomplishment stands as a testament to his dedication and scholarly prowess, reflecting positively on the Mechanical Engineering Department's legacy of producing exceptional graduates.*

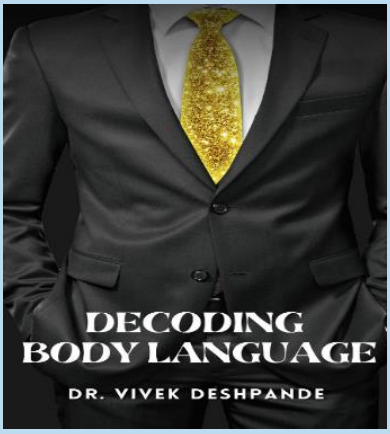
Department Publication

Book Publication

Dr. Darshak Desai *published a book on "**Measurements and Metrology**" ,for Diploma Engg. students in Gujarati language, May 2023, AtulPrakashan, ISBN:978-93-81518-03-8*



Book Publication



Dr.Vivek Deshpande *of department of Mechanical Engineering published a book titled "**Decoding Body Language**" Self-published in year 2023 with ISBN number 978-9358131697. (National)*

Paper Publication

*Darshak Desai and Patel, M.T.of department of Mechanical Engineering published a research paper on "**Implementation of Six Sigma in the small-scale ceramic industry and its holistic assessment**" in International Journal of Quality Engineering and Technology , Volume 9 (June 2023) , pp. 10–144, ISSN: 1757-2177. (International)*

A reader lives a thousand lives before he dies. The man who never reads lives only one.

-George R.R. Martin

Expert Talk

Education is the foundation upon which we build our future.

-Christine Gregoire

Expert Talk

Prof.Sukritindra Soni & Dr. Hemant Thakkar *of department of Mechanical Engineering delivered an Invited talk on "A Technical Seminar on "**Electric Vehicles Technology Overview and Career Opportunities after Diploma Studies**" as Expert in Expert Talk organized by Tolani Institute, at Adipur, Kutch on February 23, 2023.*

Expert Talk

Prof. Mihir Solanki & Prof. Akarsh Jain of department of Mechanical Engineering delivered an Invited talk on "A Technical Seminar on "Operational Research: Fun Learning and Career Opportunities after Diploma Studies" as Expert in Expert Talk organized by Government Polytechnic at Jamnagar on February 28, 2023.

Expert Talk

Expert Talk

Department of Mechanical Engineering organized Expert talk titled Future Opportunity in The Field of CAD on 14th March 2023. (Number of participation 40)

Expert Talk

Department of Mechanical Engineering in collaboration with AICTE IDEA LAB organized Expert talk titled ***Career Growth as Industrial Engineer*** *on 5th January 2023. (Number of participations 42)*

Education is not the learning of facts, but the training of the mind to think.

- Albert Einstein

Department Activity

MG NURTURE FACULTY DEVELOPMENT PROGRAM ON

"CAEV: CONNECTED AUTONOMOUS ELECTRIC VEHICLE"


In a significant leap towards advancing education in the field of Electric Vehicles (EVs), Autonomous, and Connected Cars, Prof. Sukritindra Soni from the Mechanical Department recently participated in the Six-Day Faculty Training Program hosted by MG Motors India Pvt. Ltd. The training program, held from January 30th to February 4th, 2023, took place at the MG Motors Training Centre in Halol. into the subject matter.

The primary objective of this comprehensive program, conducted as part of MG Nurture, was to equip faculty members with an in-depth understanding of the latest technologies and trends within the EV industry. The curriculum was thoughtfully designed to enable educators to integrate cutting-edge knowledge into their teaching methods effectively. The training program featured a well-balanced mix of theoretical concepts and practical applications. Participants had the opportunity to engage in hands-on demonstrations and simulations, providing them with a profound insight

The more that you read, the more things you will know. The more that you learn, the more places you'll go.

- Dr. Seuss

Workshop

An investment in knowledge pays the best interest.

- Benjamin Franklin

Workshop

*Department of Mechanical Engineering organized Workshop titled "**Workshop on Career Prospects after Diploma Studies**" on 15th February 2023. (Number of participation 150)*

Workshop on Vinly Cutter

Department of Mechanical Engineering in collaboration with AICTE IDEA LAB organized Workshop titled "One day workshop on Vinyl cutter" on 15th February 2023. (Number of participation 21)

Industrial Visit

In April 2023, the mechanical engineering department facilitated an illuminating visit to "Rotex Automation Limited," allowing students to grasp hydraulic product production intricacies. The March 2023 tour of "Wanakbori Thermal Power Station" illuminated energy conversion processes, offering invaluable insights. Additionally, a February 2023 visit to the "International Automobile Centre of Excellence Gandhinagar" provided second-year students with a chance to explore modern automotive technologies, fostering skill development.

Industrial Visit to Rotex automation limited

An industrial visit to "Rotex automation Limited" was organized by the mechanical engineering department for third year students on 6th April 2023. Rotex is a leading manufacturer of Fluid Control Systems, Positioners and Electro-Hydraulic Actuator. Having started in 1967, the company has excelled over the years in developing highly engineered products to meet the fast-paced technological demands of the process industry. Through a dedicated and highly experienced team of partners and a global network of local offices, Rotex caters to its customers' requirements across a wide spectrum of industries like steel, chemicals, pharmaceuticals, oil and gas, railways, power, etc. The visit was very fruitful as we observed each of the production stages used to develop various hydraulic products starting from the material selection, manufacturing processes till quality inspection and dispatch.

The best way to predict the future is to create it.

- Peter Drucker

Industrial Visit

In the business world, everyone is paid in two coins: cash and experience. Take the experience first; the cash will come later.

- Harold S. Geneen

Industrial Visit to Wanakbori Thermal Power Station

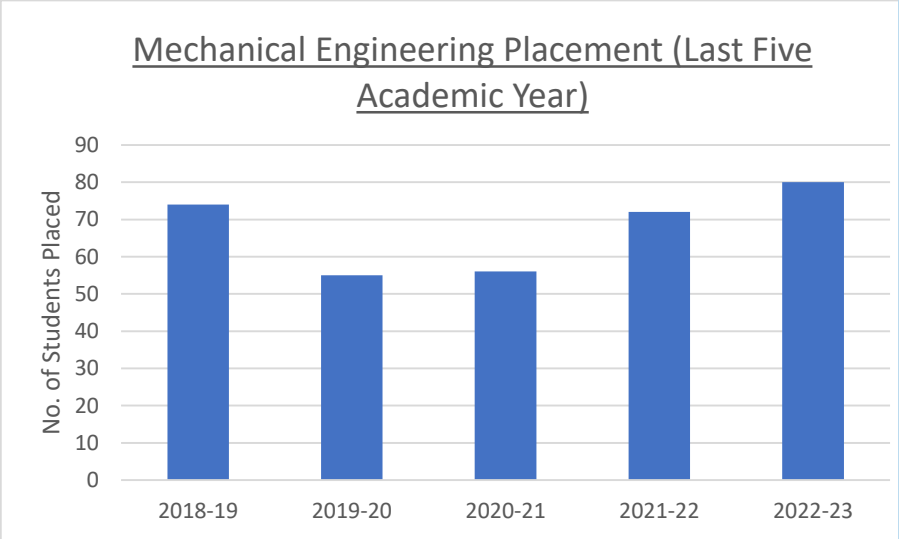
The Mechanical Engineering department organized an industrial visit to Wanakbori Thermal Power Station (WTPS) on March 17, 2023. WTPS has a total capacity of 2270 MW from 7 units of 210 MW each and one 800 MW unit. Students visited key sections: Training Centre, Coal and Ash Handling Plant, Boiler Section, Turbine/Generator Floor, Electrical Control Room (Unit No.1), Cooling Tower, and Switch Yard (220 kV & 400 kV). This visit showcased the energy conversion stages in a power plant, from fuel handling to the switch yard.

Industrial Visit to International Automobile Centre of Excellence

The Mechanical Engineering department arranged an industrial visit to the International Automobile Centre of Excellence (iACE) in Gandhinagar on February 16, 2023. Approximately 30 second-year Mechanical Engineering students, accompanied by Prof. Jvalant Trivedi, participated. iACE serves as a top-notch hub for automotive sector skill development, employing cutting-edge technology and systems. Situated in Raysan, Gandhinagar, Gujarat, the center covers the entire automotive industry value chain, including manufacturing and servicing

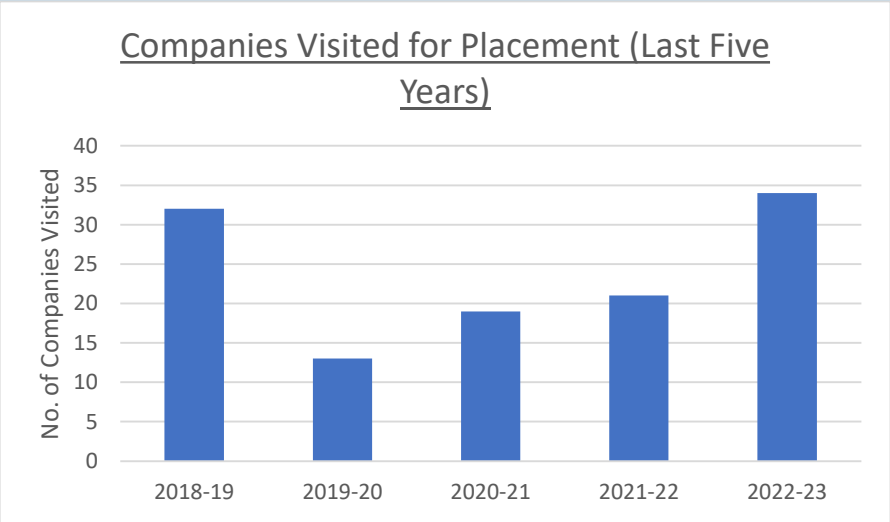
Placement

Mechanical Engineering Placement



.

Companies Visited for placement



Choose a job you love, and you will never have to work a day in your life.

- Confucius

Result Analysis

The harder you work for something, the greater you'll feel when you achieve it.

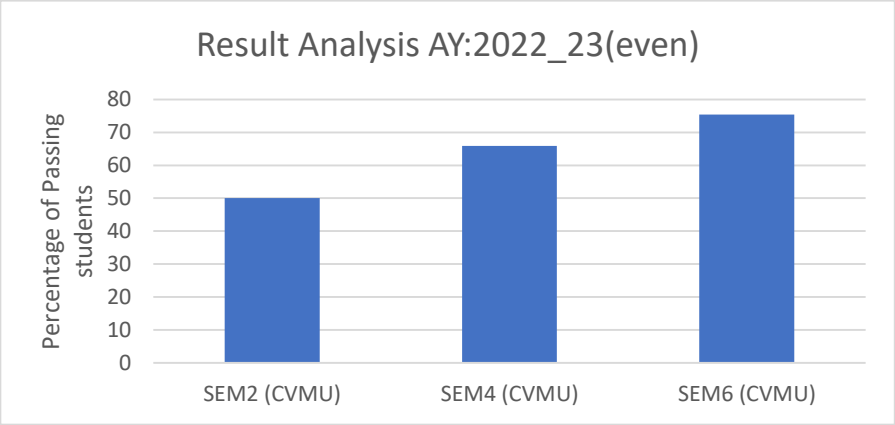
Celebrating Academic Brilliance

Our department takes immense pride in recognizing the outstanding achievements of three exceptional scholars. ***Shelat Dev Rajeshkumar****, in Semester 4, secured an impressive SGPA of 9.3, significantly enhancing the class pass percentage to 65.85%.* ***Jay Uday Pattni****, a standout in Semester 2, achieved an impressive SGPA of 8.26, contributing to a class pass percentage of 50%.* ***Pushparajsinh Girirajsinh Zala****, a luminary in Semester 6, attained a remarkable SGPA of 9.35, elevating the class pass percentage to an impressive 75.41%. Their unwavering commitment to excellence and remarkable contributions enrich our academic community.*

SEM 2
(SGPA -8.26**)**
JAY UDAY PATTNI

SEM 4
(SGPA -9.3**)**
SHELAT DEV RAJESHKUMAR

SEM 6
(SGPA -9.35**)**
PUSHPARAJSINH GIRIRAJSINH ZALA



Student Blog on 3D printing

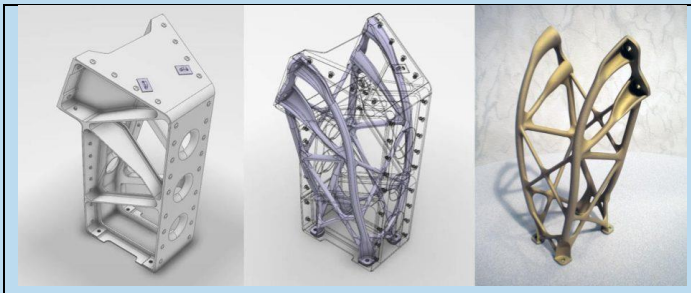
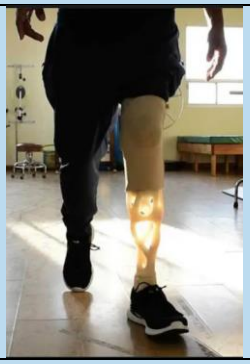
3D printing also knows as additive manufacturing is process of converting CAD model into physical objects with its ability to bring concepts to in an efficient and cost-effective manner, 3D printing is reshaping the way we design, produce, and innovate. The concept of 3d printing backs to 1980 when first patent of additive manufacturing was filled however It was after 2000 3d printing started getting popular. Over the years the technology has advanced dramatically and becoming cheap and accessible for home use.

3d printing creates objects by layering materials. Here are steps.

1. ***Design**: you first create 3d model using CAD software.*
2. ***Slicing**: It generates G-code for the 3D printer to follow using slicing software.*
3. ***Printing:** The 3d printer follows G-code and prints the object.*
4. ***Solidifying:** some 3d printers such as SLA needs light to solidify layer by layer.*
5. ***Post-Processing:** once 3d printing is complete. It goes through removing support, cleaning, sanding and assembly/welding if needed.*

Meet Patel (Third Year)

3D printing is very versatile. It has revolutionised many sectors such as aerospace to manufacture lightweight and complex components for spacecraft and medical sector by making custom implants and dental implants cheap. It has changed the way we design a product we can quickly print a product for testing and refinement before mass production. Other applications includes architecture and construction, education, art and sculpture, electronics applications and others. 3d printing is ideal for low volume productions and home use.

		
3d printed titanium satellite's frame. (source)	3D Printed Ancient Egyptian Figurine. (source)	3d printed prosthetic leg. (source)

The biggest advantage of 3d printing is how cheaply it manufactures complex objects and with no waste material. It has positive environment impact as opposed to traditional manufacturing in which pieces are cut from larger blocks of material, additive manufacturing creates products layer-by-layer and prints only relevant parts, wasting much less material and thus wasting less energy in producing the raw materials needed.

The future of 3d printing looks bright with It becoming more durable, faster, higher quality surface finish, affordable and even more accessible. It is predicted by 2030 3d printing will reach market cap of 88.28 billion USD (source) from current 22.3 billion USD.

Sources: 1, 2, 3, 4, 5, 6

Alumni Blog

Be the change that you wish to see in the world.

- Mahatma Gandhi

*Greetings, esteemed members of the GCET community, I am **Shlok Trivedi**, an alumnus of GCET, where I pursued my Bachelor's in Mechanical Engineering and proudly graduated in 2020. Currently, I am on a new academic journey, pursuing my Master's in Technology with a specialization in Electric Vehicles at the prestigious IIT Kharagpur. In addition, my dedication and hard work earned me a GATE All India Rank of 837, a testament to my commitment to academic excellence.*

Shlok Trivedi (Batch -2016-2020)

My fascination with automobiles motivated my path in Mechanical Engineering. Throughout my undergraduate years, I participated in competitions like IMAZE, which revealed the need for multidisciplinary knowledge in applying mechanical principles practically. This realization spurred my decision to pursue an interdisciplinary field at IIT. Life has its ups and downs, and during my college days, I faced challenges that tested my resilience. However, I had the privilege of encountering supportive professors who played a pivotal role in helping me regain my footing. I extend my heartfelt gratitude to them. I look forward to contributing to the sustainable future of transportation through innovation and dedication. Thank you for being a part of my journey, and I am honoured to share this exciting chapter with you all.

.