

GOVERNMENT ENGINEERING COLLEGE PATAN  
MECHANICAL ENGINEERING DEPARTMENT  
NEWSLETTER

# TORQUE-TALK

## JAN-JUNE 2024



Editor Team:

PROF. K. V. PATEL  
YASH PATEL  
DARJI PAVAN

## MESSAGE FROM THE HEAD OF DEPARTMENT

# Prof. Dr. A B Dhruv

Head of Department  
Mechanical Engineering



Warm greetings,

I am delighted to present this message for our Mechanical Engineering Department newsletter. Our department continues to progress with a strong focus on academic excellence, innovation, and industry-oriented learning. We remain committed to nurturing skilled engineers equipped with technical knowledge, ethical values, and problem-solving abilities.

The accomplishments showcased in this newsletter are a reflection of the dedication and teamwork of our faculty and students. I sincerely appreciate their continuous efforts in contributing to the growth and reputation of the department.

A handwritten signature in black ink, appearing to read "Dr. Dhruv A..". Below the signature, the text "@TORQUE-TALK" is written in a smaller, sans-serif font.

GOVERNMENT ENGINEERING COLLEGE PATAN

# ABOUT THE INSTITUTE



What we are...

Government Engineering College, Patan was established in April 2004 with three branches: Computer Engineering, Electronics and Communication Engineering, and Mechanical Engineering each with intake of 60 totaling to 180. The institute was initially functioning in the premises of the K. D. Polytechnic, Patan temporarily. It was shifted to its own newly built-up green premise in August 2008 at Katpur village on Chanasma- Patan road 8 kms before Patan.

Two more branches of Electrical Engineering and Civil Engineering each with intake of 60 were introduced from June- 2009. The intake of Electronics and communication was reduced to 30 and Mechanical Engineering was reduced to 90 from 2020. Currently institute have total intake 330. Each department has well established laboratories, computer centers and well qualified staff.

## VISION

To prepare Human Resources with value based competency for technical advancements and growth of society.

## MISSION

- To deliver technical programs and services to cater the current needs of society and industry.
- Helping industries in solving challenges by means of providing best technical human resources.
- To contribute in sustainable growth of society.

## MECHANICAL ENGINEERING DEPARTMENT

# ABOUT THE DEPARTMENT



Our strong academic performance in high school enables you to pursue a range of educational opportunities. One avenue you'll want to explore is mechanical engineering. Studying mechanical engineering at Government Engineering College Patan will equip you with a broad education, preparing you for a variety of career paths graduation and providing a solid foundation for continuing education. Mechanical engineering encompasses many areas. In short, anything that involves the design and or manufacturing of mechanical, thermal or electronic devices and or processes falls entrepreneurs, chief engineers, astronauts, faculty, physicians and patent attorneys, among other occupations. The field includes activities such as designing, developing, manufacturing, managing, researching and controlling engineering systems and their components.

## VISION

To create a centre of excellence for imparting education in mechanical engineering field to meet the current and future challenges of technological and sustainable development.”

## MISSION

- To build enabling environment for excellent teaching, learning and research in order to produce entrepreneurs and innovators in the field of Mechanical Engineering for sustainable improvement.
- To impart adequate fundamental knowledge, technical and soft skills to students.
- To develop Mechanical Engineering solutions for the problems of industry and society.



## Programme Educational Objectives (PEOs)

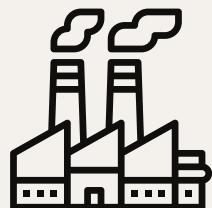
1. To prepare graduates with a technical knowledge of mathematical, scientific, engineering, technology, management, humanities and various other interdisciplinary subjects for a successful career.
2. Graduates will apply the knowledge of Mechanical Engineering to solve real Engineering problems for sustainable development.
3. To inculcate graduates with leadership skills with high level of integrity, Professional personality and ethical values.
4. To equip graduates with modern tools, technology and advanced software's for deliberating engineering solutions.

## Programme Specific Outcomes (PSOs)

- PSO1: Apply the advanced software skills to model, simulate, analyze and optimize Mechanical systems and Processes.
- PSO2: Acquire technical and managerial skills for innovative activities.

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# INDUSTRIAL VISIT



A technical site visit to chhapi was arranged for BE mechanical 4th semester on 16th March 2024 . A total number of 24 students along with faculty members Prof. N.A.Patel and , Prof. D. K. Patel, had made the visit with prior permission from the concerning agency

AMechanical Department students from GEC Patan's 5th semester visited GPERI Mehsana on 6th April 2024, focusing on renewable energy. Guided by Prof. (Dr.) K. V. Patel and Prof. (Dr.) H. N. Panchal, they explored cutting-edge sustainable technologies. The visit provided practical insights, reinforcing classroom learning and highlighting GEC Patan's dedication to preparing students for future challenges in mechanical engineering, especially in sustainable practices.



STUDENT

# PARTICIPATIONS AND ACHIVEMENTS

- SAHAJ PATEL, 200220119013 publish paper entitled “Design and Analysis of Offsetting Anti-Splashing Vaned Plate” was accepted on 1 Jan 2024. Paper was Submitted in Peer Review Journal: International Journal of Design Engineering of Inderscience Publications
- PATEL ANSHKUMAR NILESHBHAI, participate Online Quiz which is Based onBlender Software, by Spoken Tutorial IIT Bombay. On dated 6/1/2024.
- Prajapati Shubh Shaileshbhai (Enrollment No. 210220119025) participated in the Jal Samrat 2.0 online quiz on Indian Maritime History Day, conducted online on 09/04/2024.
- Abhay Pandey (Enrollment No. 230220119001) attended a webinar on Cloud Computing held at GEC Patan on 17/04/2024.
- Telee Rajkumar Vyasbhai (Enrollment No. 240223119024) participated in the CAD Champ event during Tech-Fest (Tekxianze 2k24), held at S. S. Agrawal Institute, Navsari, on 15/03/2024 and 16/03/2024.
- Suthar Karankumar Ashvinbhai (Enrollment No. 210220119028) attended a one-day webinar on “Industrial Automation and Industry 4.0”, organized by Sofcon India Pvt. Ltd., on 22/03/2024.
- Suthar Karankumar Ashvinbhai (Enrollment No. 210220119028) participated in the Space Tech Quiz 3.0, organized by Om Space Rocket and Exploration Pvt. Ltd..
- Upanshu Bhavikkumar Jani (Enrollment No. 230223119030) attended a one-day webinar on “Industrial Automation and Industry 4.0”, organized by Sofcon India Pvt. Ltd., on 22/03/2024.
- Chauhan Rajdipsinh Mukeshsinh (Enrollment No. 220223119002) attended a webinar on “Boiler Safety”, organized at Swami Sachidanand Polytechnic College, Visnagar, on 03/04/2024.

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# RESEARCH AND PUBLICATIONS



Name of Faculty	Title of Research Paper
Hitesh Panchal	A Novel Approach to Breast Tumor Detection: Enhanced Speckle Reduction and Hybrid Classification in Ultrasound Imaging
Hitesh Panchal	A detailed review of various design and operating parameters affecting the thermal performance augmentation of flat-plate solar collectors
Hitesh Panchal	Perovskite materials with improved stability and environmental friendliness for photovoltaics
Hitesh Panchal	Utilizing Hydrodynamic Cavitation with Variable Orifice Patterns for Textile Wastewater Treatment
Hitesh Panchal	Numerical investigation of forced convection flow of a complex Bingham-Papanastasiou fluid between two concentric cylinders with a wavy inner wall
Hitesh Panchal	Innovative cinque rib-roughened stimulators on performance improvement in triangular channel solar air heater
Hitesh Panchal	Reusing personal protective equipment and waste plastics in biofuel production and use in diesel engines: Priority for the COVID-19 pandemic
Hitesh Panchal	Investigation of electrical, corporeal, ocular, and aquaphobic properties of zirconia thin-films by varying substrate temperature for high voltage insulators
Hitesh Panchal	An application of hybrid Taguchi-ANN to predict tool wear for turning EN24 material
Hitesh Panchal	Development and performance evaluation of $(\text{Sm}_{1-x}\text{Nd}_x)\text{O}_2\text{O}_2\text{-}\delta$ electrolyte for low-temperature solid oxide fuel cell application

FACULTY

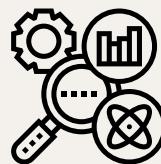


# TRAINING ATTENDED

- D. J. Parmar attended a program titled “Computational Approaches for Engineering” at NITTTR Ahmedabad during the period 05/02/2024 to 09/02/2024.
- S. P. Patel completed the courses “Non-Linear Vibration” and “Leadership and Team Effectiveness” through Swayam NPTEL during 22-01-2024 to 22-04-2024.
- K. V. Patel completed the course “Leadership and Team Effectiveness” through Swayam NPTEL during 22-01-2024 to 22-04-2024.
- S. P. Patel attended the training program “Solar PV Installers” at Gujarat Apollo Industries Limited, Mehsana during 01-07-2024 to 13-07-2024.
- M. G. Patel underwent Industrial Training at Apollo Techno Industries at MDFL, for various durations based on DTE order.
- K. V. Patel underwent Industrial Training at Apollo Techno Industries at MDFL, for various durations based on DTE order.
- N. A. Patel underwent Industrial Training at Apollo Techno Industries at MDFL, for various durations based on DTE order.
- H. N. Panchal underwent Industrial Training at Apollo Techno Industries at MDFL, for various durations based on DTE order.
- V. K. Patel underwent Industrial Training at Apollo Techno Industries at Apollo Techno Industries Private Ltd., Mandali, during 24-06-2024 to 06-07-2024.
- D. J. Parmar underwent Industrial Training at IFFCO, Kalol, during 03-06-2024 to 18-06-2024.
- N. R. Makwana underwent Industrial Training at Duke Pumping Solution Pvt. Ltd., Palanpur, during 17-06-2024 to 29-06-2024.

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# ACHIEVEMENTS



Dr. H. N. Panchal, from the Department of Mechanical Engineering, Government Engineering College, Patan, received a funded project from Technical Education – STEM for an amount of ₹5 Lakh. The project titled “Performance Analysis of Double Basin Solar Desalination System with Application of Coating and Storage Materials” has a duration of 2 years and was sanctioned in the year 2023–24.

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# PLACEMENT



The Department Placement Activity for the final year students is as follows: Out of a total of 66 students, 34 students have been successfully placed in reputed companies or the Government sector. Additionally, 4 students have secured admission to higher studies with valid qualifying scores such as GATE or other State/National level tests (GRE, GMAT, etc.). Furthermore, 1 student has chosen the path of entrepreneurship.

## LIST OF COMPANIES



**Johnson  
Screens**



**HERTZ**  
TESTING AND TRAINING CENTRE  
*Because Quality Matters!*

**rexroth**  
A Bosch Company

**adani**

 **PLASMA**  
INDUCTION (INDIA) PVT.LTD.

**VOLTAS**

 **TELESCOPE**  
ENGINEERING SOLUTIONS

DEPARTMENT

# PLACEMENT



Sr. No.	Student Name	Enrollment no.	Employee Name
1	Raval Dev Mehulbhai	200220119005	Rexroth A Bosch Company
2	Vikas Thansingh Rajpurohit	200220119011	Accunova Engineering
3	Sahaj Navinbhai Patel	200220119013	ADANI
4	Mehta Jaimin Rajeshkumar	200220119021	Hertz Testing and Training Centre
5	Panchal Dev Dilipkumar	200220119022	Plasma Induction Pvt. Ltd.
6	Majmundar Vedant Rajulbhai	200220119023	Plasma Induction Pvt. Ltd.
7	Upadhyay Ayushkumar Rakeshbhai	200220119025	VOLTAS
8	Rajput Divyraj Pravinsinh	200220119033	MAXIM TUBES CO. PVT. LTD
9	Sabugar Mohmad Anas Zakir Husen	200220119037	Aqua Technologies
10	Thakor Megharajsinh Kinaji	200220119039	CLEANX Agro Solution
11	Sumara Sadikali Yasinbhai	200220119040	Bhagwati Krushi Udyog Pvt. Ltd.
12	Patel Bhavinbhai Navnitbhai	210220119501	NPM MACHINERY PVT.LTD
13	Patel Anshkumar Nileshbhai	210220119503	Rexroth A Bosch Company
14	Suthar Maheshkumar Himmatbhai	210220119507	Xitiz Technomech LLP
15	WWW.GECPATAN.AC.IN Chauhan Pruthviraj Dashrathbhai	210220119508	@TORQUE-TALK Inductotherm Group INDIA

Sr. No.	Student Name	Enrollment no.	Employee Name
16	Modi Dhruvam Ashishkumar	210220119511	CYPRESS Industries
17	Thakor Vipul Valaji	210220119512	Plasma Induction Pvt. Ltd.
18	Barot Harshil Devendrakumar	210220119513	Transpek Industry Ltd.
19	Chauhan Het Kirtilal	210220119514	Johnson Screens India Pvt. Ltd.
20	Patel Mihir Bharatkumar	210220119518	Sachin Industries Ltd. Chhatral
21	Patel KhodalKumar Bharatkumar	210220119519	Balkrishna boilers pvt ltd
22	Patel Vaibhav Mukeshbhai	210220119521	Monarch Innovation
23	Patel Yashkumar Vikrambhai	210220119522	Telescope Engineering
24	Upadhyay Meetkumar Jayeshkumar	210220119525	Cosmos Engitech Pvt. Ltd.
25	Prajapati Raj Sureshbhai	210220119529	Ratnamani Metals and Tubes Ltd.
26	Panchal Vinitkumar Hiteshkumar	210220119531	Hertz Testing and Training Centre
27	Savaliya Tanesh Gopalbhai	210220119533	TERA HERTZ ENGINEERING
28	Rajput Ayush Anilkumar	210220119534	Hertz Testing and Training Centre
29	Patel Parth Mukeshbhai	210220119539	NKP Pharma Pvt. Ltd.
30	Darji Darshan Rakeshkumar	210220119542	Hertz Testing and Training Centre
31	Shukla Mahin Nikhil Kumar	210220119543	Hertz Testing and Training Centre
32	Prajapati Yogesh Shankarbhai	210220119545	Patels Airtemp (INDIA) Ltd.
33	Prajapati Krunal Chhanabhai	210220119546	Kirloskar Brothers Ltd.
34	MODI PRIT HARESHKUMAR WWW.GECPATAN.AC.IN	210220119510	ALVIO pharma pvt ltd @TORQUE-TALK

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# STUDENTS ADMITTED TO HIGHER STUDIES



Sr. No.	Enrollment. No.	Student name	Course Name	Address
1	20022011902	Patel Keyur Dineshbhai	Master of Engineering (Mechanical Engineering)	RMIT University, Australia
2	20022011904	Patel Divyakumar Dilipbhai	Energy Management - Co-op Option	ALGONQUIN College of Applied Arts and Technology, CANADA
3	21022011950	Thakor Mahipal Govindji	Mechanical Engineering (M.Tech) Electric Vehical Technology	L.D.College Of Engineering, Ahmedabad
4	21022011952	Patel Pruthvеш Rakeshkumar	Crawley (Mechanical Engineering)	The University of Western Australia Perth WA 6009 Australia

DEPARTMENT SCHOOLAR

# CONGRATULATIONS

## FINAL YEAR TOPPERS

Rank	Enrollment No.	Name of the student	CPI	CGPA	SPI
1	210220119514	CHAUHAN HET KIRTLAL	8.55	8.67	10
2	210220119507	SUTHAR MAHESHKUMAR HIMMATBHAI	8.32	8.44	10
3	210220119515	DARAJI JAYKUMAR RAJESHKUMAR	8.08	8.21	10
4	200220119023	MAJMUNDAR VEDANT RAJULBHAI	8.02	8.29	10
5	210220119521	PATEL VAIBHAV MUKESHBHAI	7.98	8.26	10
6	210220119506	THAKOR MAHIPAL GOVINDJI	7.97	7.95	10
7	200220119013	SAHAJ NAVINBHAI PATEL	7.79	8.37	10
8	210220119512	THAKOR VIPUL VALAJI	7.7	7.98	10
9	210220119511	Modi Dhruvam Ashishkumar	7.69	7.71	10
10	210220119531	PANCHAL VINITKUMAR HITESHKUMAR	7.63	7.83	10

# FACULTY



Sr. No.	Name	Qualification	Date of Joining
1	Dr. A. B. Dhruv	PhD Mechanical	24 Feb 1995
2	Dr. D K Patel	PhD Mechanical	17 Nov 2004
3	Prof. D J Parmar	ME Mechanical	11 Feb 2022
4	Prof.C .C .Patel	ME Mechanical	8 Jul 2008
5	Dr. M. G. Patel	PhD Mechanical	5 Apr 2011
6	Dr. S. P. Patel	PhD Mechanical	21 Apr 2011
7	Dr. N. A. Patel	PhD Mechanical	11 Jan 2022
8	Dr. K. V. Patel	PhD Mechanical	12 Jun 2018
9	Prof.K.H.Thakkar	ME Mechanical	6 Oct 2016
10	Prof.B.B.Patel	ME Mechanical	6 Oct 2016
11	Prof.V.K.Patel	ME Mechanical	23 Jun 2016
12	Prof.N.R.Makvana	ME Mechanical	20 Jun 2016
13	Dr.H.N.Panchal	PhD Mechanical	7 Jan 2016
14	Prof.R.A.Oza	ME Mechanical	6 Oct 2016
15	Dr.H.R.Prajapati	PhD Mechanical	11 Jan 2022
16	Prof.C.P.Kadia	BE Mechanical	21 Jun 2011
17	Prof.K.K.Rabari	ME Mechanical	10 May 2012
18	Prof.D.K.Patel	ME Mechanical	21 Oct 2014

## DEPARTMENT MAP



## GROUND FLOOR

