

GOVERNMENT ENGINEERING COLLEGE PATAN  
MECHANICAL ENGINEERING DEPARTMENT  
NEWSLETTER

# TORQUE-TALK

## JULY-DEC 2022



Editor Team:

PROF. K. V. PATEL  
SAVALIYA TANESH  
PANCHAL VINIT

## MESSAGE FROM THE HEAD OF DEPARTMENT

# Prof. Dr. A B Dhruv

Head of Department  
Mechanical Engineering



It gives me immense pleasure to release the Half-Yearly Newsletter of the Mechanical Engineering Department for July–December 2022.

During this period, the department successfully organized various curricular and co-curricular activities, reflecting our commitment to value-based education and the overall development of students. Faculty participation in training programs and conferences has been highly encouraging, and we aim to continue this momentum. Through seminars, workshops, and industrial visits, students have enhanced their technical knowledge, critical thinking, and professional skills.

With the dedication of our faculty and staff, the department will continue striving for academic excellence and shaping competent professionals for the future.



The signature is handwritten in black ink. It includes the prefix 'Prof.', the name 'Dr. A B Dhruv', and the suffix 'H...'. A large, stylized 'A' is part of the signature, and there is a small circle containing a 'P' to the left of the name.

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.

## MECHANICAL ENGINEERING DEPARTMENT

## 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.

DEPARTMENT

# SPOTLIGHT



- RajbharDipakkumarHarekrishna, a seventh-semester B.E. Mechanical student, has been chosen to represent Gujarat Technology University Kabbadi Team Man in the All-Indian Intercollegiate University Tournament from November 24 to December 1, 2022.
- Thakor Pruthviraj Narendrasinh Student of 7th sem mechanical Branch Has Represented GEC Patan and GTU at Swami Vivekanand institute of mountaineering at Mount Abu Rajasthan for Basic Rock Climbing Training



## પાઠ્ય એન્જિનીયરીંગ કોલેજનો વિદ્યાર્થી પર્વતારોહણ શિબીરામાં પસંદગી પામ્યો

(નિ. નિ. ૧૫.) પાઠ્ય, તા. ૮૮  
પાઠ્યાંકાના કોલેજમાં આવેલી  
સાધારણ એન્જિનિયરિંગ કોર્સોની  
નિયમાં કાર્યક્રમ પૂર્ણત્વાંતર્ગત  
એ રોહણના માર્ગના અભિયાન  
આપેલ રૂપાંથી વિચારાંના  
પર્વતારોહણ સંસ્કૃતીની વિશેવાદાં  
પસંદગી પામ્યો હતો.  
રાજ્યાંશી સૌથી મોટી એકનોલોજીક સુનિયતિની તરીકે  
નામના મેળવાના અને  
નિયમાંના સુનિયતિ વિશેવાદાં  
સાતાં કાર્યક્રમ એકનાર સજ્જાત  
એકનોલોજીક સુનિયતિની પ્રાણ  
એકનોલોજીક જીબન સંજીવિત રાખવાના  
લોએ પણ જીબના તરે અનેક  
પ્રાણોનું જીબન કરવા છે.  
સુનિયતિની પ્રાણ તાપેતામાં જ  
દાખલાના માર્ગના આંતુ આંતે  
આપેલ રૂપાંથી વિચારાંના

પર્વતારોહણ સંસ્કૃતીની દસ્તક  
(૧૫/૧૫/૨૦૨૨ - ૧૫/૧૫/૨૦૨૨) માટેનો પ્રાણમિશ્ર ખર્ચ  
લાયક નિયમાંની વિશેવાદાં  
એ રોહણ સંસ્કૃતીની પરંપરાની  
માટેની એ વિશેવાદાંની પરંપરાની  
પામ્યો હતો...આપે પાઠ્ય નિયમાંની  
ઓલેજોની માંથી કાઢો પૂર્વીરાજ  
નેરાનસીની પરંપરા વિષય હતી. આ  
નિયમાંના જીબન તો નિયમાંનોને  
સેટ્યુલોનું સોંગ રેફલિન  
તથા  
સાંકોનોનું સોંગ રેફલિન  
ને રાખવા માટે  
જુદી રીતના તો તારીખ  
આપવાના આધી હતી.  
કાઢો પૂર્વીરાજ નેરાનસીની આ  
નિયમ માટે પણેની પામીને એલોઝ  
તથા સાંગ પદ્ધતા નિયમાંની ગોચર  
સુધીનું હશ્યું હુદે અનુભવાના લોકોની  
ઉદ્ઘાસ્તા ની નિયમાંના જીબન સેટ્યુલો

DEPARTMENT

# SPOTLIGHT



On September 11th, 2022, Prof. (Dr.) K.V. Patel organized a one-day workshop at COE Electrical Lab on "Learn interface of PLC with Modbus and sensors through Simulator" for final-year (7th semester) Electrical Engineering students

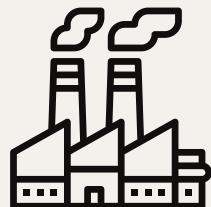
Prof. K. K. Pansal won Best Paper Award (Runner Up)-Poster Presentation for the paper "Experimental Investigation on Double Basin Evacuated Tube Integrated Solar still with Heat Storage material" at the "International conference on Sustainable Energy and Clean Technologies (ICSECT-22) from 2-4 September 2022, jointly organized by the Department of Chemical and Electrical Engineering, School of Technology, Pandit Deendayal Energy University, Gandhinagar, Gujarat

Department has organized an Impact Lecture Series on "Innovation, IPR & Entrepreneurship" on 12th July, 2022. Mr. Amit Kumar Patel, Managing Director, PATectual IP Law Services LLP has delivered session on "Importance of Patent and Patent Search" and Mr. Tushar Panchal, CEO, Assistant Professor, GTU Innovation & Startup Centre (GISC) has delivered session on "Innovation Market Fit: Cases Study



DEPARTMENT

# INDUSTRIAL VISIT



The Mechanical Department organized an industrial visit for the 7th semester students at Marshal Agro, Unja. A total of 30 students actively participated in the visit. They were accompanied by two faculty members from the department. During the visit, students gained practical exposure to industrial processes. The visit proved to be a valuable learning experience for all participants.

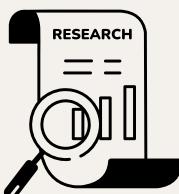
Department organized an industrial visit for the 5th and 7th semester students. The visit was arranged at National Gears and Prabhu Molding Works, Visnagar. A total of 36 students participated in this industrial visit. They were accompanied by 2 faculty members from the department. The visit provided practical knowledge of gear manufacturing and molding processes.



A technical site visit to Banas Dairy, Palanpur was arranged for student's semester of BE 5th and 7th semester on 17th October 2022. The purpose of the visit was to have an insight into the production function of all the major high end projects such as Quality control, Process Control and instrumentation.

DEPARTMENT

# RESEARCH AND PUBLICATIONS



Prof. D. K. Patel published as review paper in (September-2022, Volume 214). Artificially roughened solar air heating technology – A comprehensive review. Applied Thermal Engineering, 118817

Prof. H. N. Panchal and Ramachandran Krishnan, S. S. (Volume 20, September–October 2022.). Published a research paper on Biodegradable magnesium metal matrix composites for biomedical implants: synthesis, mechanical performance, and corrosion behavior – a review. Journal of Materials Research and Technology, Pages 650-670.

DEPARTMENT

# TRAINING ATTENDED

Sr. No.	Title	Name of the Faculty	Place	Duration
1	Processing and Characterization of Materials (PCM 2022)	Prof. K. K. Pansal	Government Engineering College, Gandhinagar	19/09/2022 to 23/09/2022
2	Welding Technology	Prof. V. K. Patel	iACE, Gandhinagar	10/10/2022 to 14/10/2022
3	Creativity and Innovation	Prof. M. G. Patel	NITTTR, Bhopal	19/12/2022 to 23/12/2022

FACULTY



# ACHIEVEMENTS



Prof. K. V. Patel recently received a PhD degree in Mechanical Engineering from Gujarat Technological University. He has done research on Design and Dynamic Balancing of Multiloop Special Mechanism on August 29, 2022

Prof. K. K. Pansal has participated in Processing and Characterization of Materials (PCM 2022) from 19th to 23rd September, 2022 at Government Engineering College, Gandhinagar

STUDENT



# PARTICIPATIONS AND ACHIVEMENTS



Meet Chaudhry of Mechanical Engineering Department represented state at 36th National Games in Netball and his team won Bronze Medal for the state from 29th-30th September.

Rajbhar Dipakkumar Harekrishna, a seventh semester B.E. Mechanical student, has been chosen to represent Gujarat Technology University Kabbadi Team Man in the All-Indian Intercollegiate University Tournament from November 24 to December 1, 2022

Thakor Pruthviraj Narendrasinh Student of 7th sem mechanical Branch Has Represented GEC Patan and GTU at Swami Vivekanand institute of mountaineering at Mount Abu Rajasthan for Basic Rock Climbing Training



DEPARTMENT

# PLACEMENT



32 students placed through campus placement program in 9 different companies. 63 students placed after completion of the industrial internships during academic year 2022-23 of the Mechanical and Automobile Engineering Department.

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DEPARTMENT

# PLACEMENT



Sr. No.	Name of Student	Name of Company	Annual Salary	Date of Interview
1	Khatri Manav	TDS Lithium-Ion Battery Gujarat Pvt. Ltd.	400,000	Jul 2022
2	Prajapati Vatsal Babubhai	TDS Lithium-Ion Battery Gujarat Pvt. Ltd.	400,000	Jul 2022
3	Prajapati Sumit Jayantibhai	TDS Lithium-Ion Battery Gujarat Pvt. Ltd.	400,000	Jul 2022
4	Jethi Arpit Prashant	TDS Lithium-Ion Battery Gujarat Pvt. Ltd.	400,000	Jul 2022
5	Darji Amit	Sunlight Infra Energy Private	156,000	21/07/2022
6	Arsh Mahmad Hanif Malek	Kachhua Solutions Private Limited	240,000	29/08/2022
7	Mihir Dilipbhai Patel	Kachhua Solutions Private Limited	240,000	29/08/2022

Sr. No.	Name of Student	Name of Company	Annual Salary	Date of Interview
8	Rajbhar Dipakkumar	Kachhua Solutions Private Limited	240,000	29/08/2022
9	Parthkumar Mahendrabhai Prajapati	Kachhua Solutions Private Limited	240,000	29/08/2022
10	Shyam Hitendrakumar Patel	Kachhua Solutions Private Limited	240,000	29/08/2022
11	Harsh Rakeshkumar Bhatt	Kachhua Solutions Private Limited	240,000	29/08/2022
12	Harsh Rohitkumar Pandya	Kachhua Solutions Private Limited	240,000	29/08/2022
13	Kartik Revabhai Patel	Kachhua Solutions Private Limited	240,000	29/08/2022
14	Mohammad Akram Mohammad Hanif Pathan	Kachhua Solutions Private Limited	240,000	29/08/2022
15	Harsh Bharatkumar Prajapati	Third Rock Techno LLP	300,000	29/08/2022
16	Jay Jagadishkumar Modi	Saicab Tech Pvt. Ltd., Ahmedabad	180,000	3/9/2022

Sr. No.	Name of Student	Name of Company	Annual Salary	Date of Interview
17	Harsh Rohitkumar Pandya	Saicab Tech Pvt. Ltd., Ahmedabad	180,000	3/9/2022
18	Gaurangsingh A. Rajput	DWIJ Motors	144,000	2/9/2022
19	Shyam Hitendrakumar Patel	DWIJ Motors	144,000	2/9/2022
20	Aryankumar Suthar	DWIJ Motors	144,000	2/9/2022
21	Pruthviraj Narendrasinh Thakor	DWIJ Motors	144,000	2/9/2022
22	Odiya Manish Madhabhai	Balief Corporation, Ahmedabad	144,000	3/9/2022
23	Panchivalanirav Jayeshbhai	Balief Corporation, Ahmedabad	144,000	3/9/2022
24	Sathavara Meetkumar Dineshbhai	Balief Corporation, Ahmedabad	144,000	3/9/2022

# FACULTY AND STAFF



## Dr. Anand Dhruv

Designation : Professor  
 Qualification : Ph. D  
 Experience : 32 Years  
 Area of Interest : CAD-CAM, Metal Forming, Automobile Engg, Manufacturing Engg  
 Email : anand.dhruv@gecpatan.ac.in



## Dr. Dineshkumar Patel

Designation : Professor  
 Qualification : Ph. D  
 Experience : 31 Years  
 Area of Interest : Solar Energy  
 Email : dinesh.patel@gecpatan.ac.in



## Prof. Sandip S. Patel

Designation : Associate Professor  
 Qualification : M. E  
 Experience : 16 year  
 Area of Interest : Machine Design  
 Email : sandipuvpce@gmail.com



## Prof. Chiragkumar C. Patel

Designation : Assistant Professor  
 Qualification : M.Tech.  
 Experience : 16 Years  
 Area of Interest : Thermal Science and Engineering  
 Email : ccpatel09@gmail.com



## Dr. Miteshkumar Govindbhai Patel

Designation : Assistant Professor  
 Qualification : Ph. D  
 Experience : 16 Years  
 Area of Interest : Production  
 Email : mitesh.patel@gecpatan.ac.in

# FACULTY AND STAFF



## Prof. Sachin P. Patel

Designation : Assistant Professor  
Qualification : M. E.  
Experience : 16 Years  
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## Dr. Kaushikkumar V. Patel

Designation : Assistant Professor  
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Area of Interest : Machine Design  
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## Prof. K. K. Pansal

Designation : Assistant Professor  
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Area of Interest : Thermal Science and Engineering  
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## Prof. Kamlesh Hasmukhlal Thakkar

Designation : Assistant Professor  
Qualification : M. Tech  
Experience : 11 years  
Area of Interest : CAD/CAM  
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## Prof. Kalpesh P. Patel

Designation : Assistant Professor  
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# FACULTY AND STAFF



## Prof. Girish S. Patel

Designation : Assistant Professor  
Qualification : M.E.  
Experience : 11 years  
Area of Interest : Production Engineering  
Email : gsjagania@gmail.com



## Prof. Bhargav B. Patel

Designation : Assistant Professor  
Qualification : M.E.  
Experience : 11 years  
Area of Interest : CAD/CAM  
Email : bbpgec@gecpatan.ac.in



## Prof. Vipulkumar Kashirambhai Patel

Designation : Assistant Professor  
Qualification : M.E.  
Experience : 11 years  
Area of Interest : CAD/CAM  
Email : vipul.patel@gecpatan.ac.in



## Prof. Narendrasinh Ramjibhai Makvana

Designation : Assistant Professor  
Qualification : M.E. (THERMAL ENGG)  
Experience : 11 years  
Area of Interest : Solar Engineering  
Email : naren.makvana@yahoo.com



## Dr. Hitesh Panchal

Designation : Assistant Professor  
Qualification : Ph. D  
Experience : 11 years  
Area of Interest : Solar Thermal, Solar Photovoltaic  
Email : engineerhitesh2000@gmail.com

# FACULTY AND STAFF



## Prof. Rakesh A. Oza

Designation : Assistant Professor  
Qualification : M. E.  
Experience : 11 years  
Area of Interest : CAD-CAM  
Email : raogec@gmail.com



## Prof. Chirag P Kadiya

Designation : Assistant Professor  
Qualification : B.E.  
Experience : 16 Years  
Area of Interest : Power Plant Engineering  
Email : cpkadiya@gecpatan.ac.in



## Prof. Kiran K. Rabari

Designation : Assistant Professor  
Qualification : M.E.  
Experience : 14 Years  
Area of Interest : CAD-CAM  
Email : rabarikiran15@gmail.com



## Prof. Dharmesh K. Patel

Designation : Assistant Professor  
Qualification : M. Tech.  
Experience : 12 Years  
Area of Interest : Manufacturing  
Email : rabarikiran15@gmail.com

# FACULTY AND STAFF



**Shri. Rakesh V. Patel**

Designation : Lab Assistant  
Qualification : D E  
Experience : 12 year



**Ms. Priyanka J. Patel**

Designation : Lab Assistant  
Qualification : B E  
Experience : 12 year

DEPARTMENT

# LABORATORIES



## Refrigeration and Air Conditioning Lab:

This laboratory houses the vapor compression refrigeration system, air conditioning, heat pump setup, refrigerator to determine the most crucial performance parameters of RAC devices. This lab plays a very important role to understand various refrigeration cycles used in domestic as well as Industrial purpose.



## CAD/CAM Lab:

This laboratory emphasizes on computer aided design and manufacturing, quality control and measurement too. It also provides various activities in nonconventional manufacturing, flexible manufacturing system and automation. This lab is equipped with CNC turning centre, 5 axis robot and other equipment's required as per syllabus.



## Heat Transfer Lab:

This lab course is primarily being offered to the III Year B.E. Mechanical Engineering Students to make them understand the principles of i.e. conduction, convection, Radiation boiling and Condensation modes of heat transfer and principles of Refrigeration and Air Conditioning. Laboratory is equipped with the set up of Pin Fin Apparatus, Heat transfer in Natural convection, Composite Wall Apparatus etc.

# LABORATORIES



## Workshop and Machine Shop Lab:

Workshop has various facilities like Machine shop, Carpentry shop, Fitting shop, Welding shop, Smithy shop, Plumbing shop, Foundry shop etc. to cater to hands on experience for the students. For manufacturing process, this workshop has a more no. of lathe machine, drilling machine, shaper machine, shearing machine etc.



## Internal Combustion Engine Lab:

This laboratory is equipped with modern instruments like modern internal combustion engine test rig, diesel smoke meter, variable compression ratio engine test rig, five gas exhaust gas analyzers etc. In this lab, performance optimization of engine parameters like power, fuel consumption and emissions etc are being taught to the students.



## Kinematics and Dynamics of machines Lab:

Students are greatly benefited by studying the demonstration of the Slider Crank Mechanism, Cam Follower Mechanism, Different Gears and Gear train Mechanism, Gyroscope etc.



## Computer-Aided Design (CAD) Lab:

This lab is facilitated It is having computer systems with high-end configurations to ensure seamless performance to support students in design, simulation and analysis tools essential for modern engineering applications. The CAD Lab has 30 computers, with 12 PCs equipped with ANSYS for simulation and analysis, while all have Autodesk software for drafting and design.

# LABORATORIES



## Fluid Mechanics and Fluid Power Engineering Lab:

This laboratory helps students to understand the principles of fluid behavior and hydraulic machinery operations. It offers hands on experience with devices like flow meters, pumps, turbines, and hydraulic systems. Experiments cover fluid properties, flow measurement, and performance testing of machines. The lab enhances practical knowledge of theoretical fluid mechanics concepts learned in classrooms.



## Automation in Manufacturing Lab:

The laboratory component of the Automation in Manufacturing course aims to provide hands-on experience with automation technologies used in manufacturing industries. Through practical experiments, students will explore industrial robotics, flexible manufacturing systems (FMS), and automation machinery. The lab exercises are designed to reinforce theoretical concepts and develop problem-solving skills for real-world automation challenges.



## Basic Mechanical Engineering Lab:

The Basic Mechanical Engineering Laboratory provides practical exposure to fundamental mechanical systems and components. It includes models of boilers along with their mountings and accessories, helping students understand steam generation and safety mechanisms. The laboratory also features internal combustion (IC) engine models, including four-stroke and two-stroke petrol and diesel engines, enabling students to study engine components, working principles, and thermodynamic cycles.



## Engineering Graphics & Design Lab:

Engineering Graphics & Design (EGD) is a vital subject that enables students to communicate engineering ideas, designs, and concepts in a clear and precise manner. The laboratory has several shapes of 2D & 3D models, which will be helpful in the visualization and understanding of the subject.

## DEPARTMENT MAP



## GROUND FLOOR

