

GOVERNMENT ENGINEERING COLLEGE MODASA



ELECTROZINE



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**MAGAZINE BY ; THE DEPARTMENT OF
ELECTRICAL ENGINEERING**

TEAM ELECTROZINE



Shagun Tripathi



Solanki Darshan



Jaimin Ghayal



TOGETHER
WE CAN



Vinzava Paresh



Patel Hitarh

प्रार्थना



हे शारदे माँ, हे शारदे माँ
अज्ञानता से हमें तारदे माँ

तू स्वर की देवी, ये संगीत तुझसे
हर शब्द तेरा है, हर गीत तुझसे

हम है अकेले, हम है अधूरे
तेरी शरण हम, हमें प्यार दे माँ

हे शारदे माँ, हे शारदे माँ
अज्ञानता से हमें तारदे माँ

मुनियों ने समझी, गुनियों ने जानी
वेदोंकी भाषा, पुराणों की बानी

हम भी तो समझे, हम भी तो जाने
विद्या का हमको अधिकार दे माँ

हे शारदे माँ, हे शारदे माँ
अज्ञानता से हमें तारदे माँ

तू श्वेतवर्णी, कमल पर विराजे
हाथों में वीणा, मुकुट सर पे साजे

मनसे हमारे मिटाके अँधेरे,
हमको उजालों का संसार दे माँ

हे शारदे माँ, हे शारदे माँ
अज्ञानता से हमें तारदे माँ
हे शारदे माँ, हे शारदे माँ ॥



MESSAGE FROM THE PRINCIPAL'S DESK

Dr. B. J. Shah
Principal

Dear Students & Faculty members, Warm greetings to all.

It gives me an immense pleasure to welcome the newly admitted students of this Institute through this Information Brochure.

This corona pandemic condition is almost under control and all activities are slowly progressing towards normalization. Almost all schools and colleges working in online mode since last one & half year are now becoming ready to start the classes in on-campus mode. One thing everyone has to accept that Corona has made many changes to live with the system. The pace towards use of digital media increases many fold in this pandemic condition. Thanks to the digital revolution, otherwise the teaching learning process would have been suffered a lot in this pandemic condition.

In the Corona pandemic condition, all teaching –learning activities, co-curricular & extra-curricular activities, placement, research and innovation activities etc. have been made online effectively. As a result, the Institute is awarded as **“Excellent Performance in Online Teaching”** by the Education department, Government of Gujarat under UDAYAM Project on 5th September, 2020.

The institute provides all sorts of facility for the growth of the students and makes them a competent engineer. Well qualified faculties of more than 50% faculties are having either Ph.D qualification or pursuing Ph.D and good infrastructure facilities are the strength of the Institute. State-of-the-Art teaching learning methods supplemented by co-curricular & extra-curricular activities conducted throughout the year helps the overall development of the students. All faculties and staff are student friendly and always eager to help in any of your problem. The team GECM puts all efforts to place the institute at the next level of success.

This Information brochure provides all information that is useful to the newly admitted students. The efforts placed by the team of Brochure and News letter committee is acknowledged here.

At last, I wish all the best to all newly admitted students. These four years are very important part of your life and it will also shape your future. So please don't waste time and put your best effort to gain the knowledge. I assure you that the four year stay at this campus will be a memorable and fruitful by enriching the knowledge and skill sets that are required to become a competent engineer.

Thank You and wishing you a successful career.

Prof. B. J. Shah
Principal



Electrical Engineering Department

Electrical Engineering is a discipline which deals with visualization, conceptualization, design, analysis, development, operation and maintenance of Electrical systems and their components to ensure quality, safety, reliability and sustainability. The ways of utilizing Electrical power supply, operating Electrical machines and controlling it through power electronics is an integral part of Electrical Engineering.

The department aims to impart high quality education, to imbibe the spirit of innovation and entrepreneurship among the students and thereby produce comprehensive Electrical Engineers to meet the changing needs of the industry and society at large. It is committed to enhance technical proficiency along with moral values.

FACULTY & STAFF

Name	Designation	Qualification
Dr. J.R. Iyer	Associate Professor& Head	PhD.
Prof. M.J. Patel	Associate Professor	M.E.
Dr. H.D. Mehta	Associate Professor	PhD.
Prof. N.V. Upadhyay	Assistant Professor	M.E.
Prof. J.B. Pujara	Assistant Professor	M.E.
Prof. K.K. Bhatt	Assistant Professor	M. Tech.
Prof. M.N. Priyadarshi	Assistant Professor	M .Tech.
Prof. T.A. Chaudhari	Assistant Professor	M.E.
Prof. C.K. Bariya	Assistant Professor	M.E.
Prof. R.K. Kapadia	Assistant Professor	M.E.
Prof. N.B. Panchal	Assistant Professor	M.E.
Prof. S.V. Banker	Assistant Professor	M.E.
Prof. D.U. Thakar	Assistant Professor	M. Tech.
Dr. H.S. Pandya	Assistant Professor	PhD.
Prof. K.G. Kharadi	Assistant Professor	B.E.
Prof. P.K. Patel	Assistant Professor	M.E.
Shri S.K. Panchal	Electrician	
Shri. S.J. Patel	Electrician	
Shri A.K. Bhangi	Hamal	

LABORATORY DETAILS



Measurement & Instrumentation Laboratory - This lab is equipped with various measuring instruments and transducers like Linear Variable differential transformer(LVDT), Thermocouple, Resistance strain gauge, Resistance Temperature Detector, Various Bridges etc.. The students can understand the fundamentals of various measuring instruments, their principles of operation and working.





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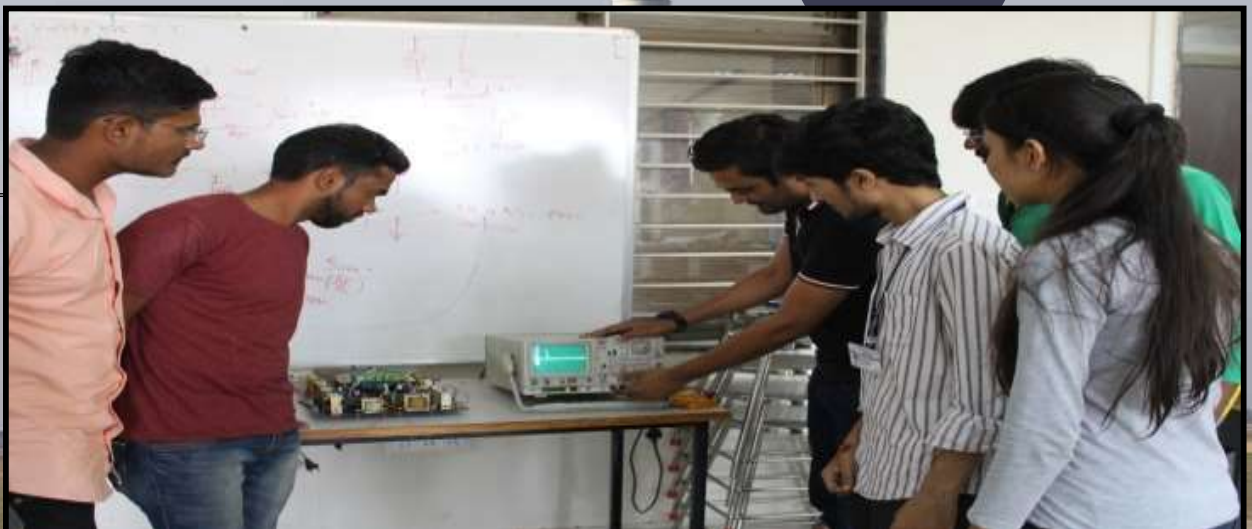
High Voltage Laboratory - In this lab, the students can access and familiarize themselves with operations of the high voltage equipments like impulse generator, oil testing kit, horn gap arrester, solid insulation high voltage tester etc. The students are made aware of appropriate precautions to be taken while handling equipments in a high voltage laboratory





Basic Electrical Engineering Laboratory - This laboratory enables the newly admitted students to understand the fundamental concepts of Electrical Engineering. Students get an idea about the functioning of basic electrical equipments, domestic and staircase wiring procedures, MCB's ELCB's etc. The practical exposure helps develop skills in these freshers which they will require in the year to come.

Embedded Systems Laboratory - This laboratory provides a medium to the students wherein they can understand the components like microprocessor, microcontroller etc. that constitute an embedded system. They can become familiar with the tools used to develop an embedded environment. They can implement small programs to solve well defined problems.



EXPERT LECTURES IN DEPT/BY DEPT FACULTY

1) Expert Talk



- ❖ An expert talk was organized by Department of Electrical Engineering on 1st Aug 2019, from 10:55a.m. to 12:55 p.m. for Sem 5st (EE). Shri Chirag Chauhan, Faculty PCRA, was invited to deliver an interactive session of two hours on “*Energy Conservation Awareness*”. Total **52** students of 5st semester EE participated actively and made the session very interactive. At the end the students were found enlightened by the industrial experience based knowledge and were found crowded around the expert asking queries and sharing contact details with him.

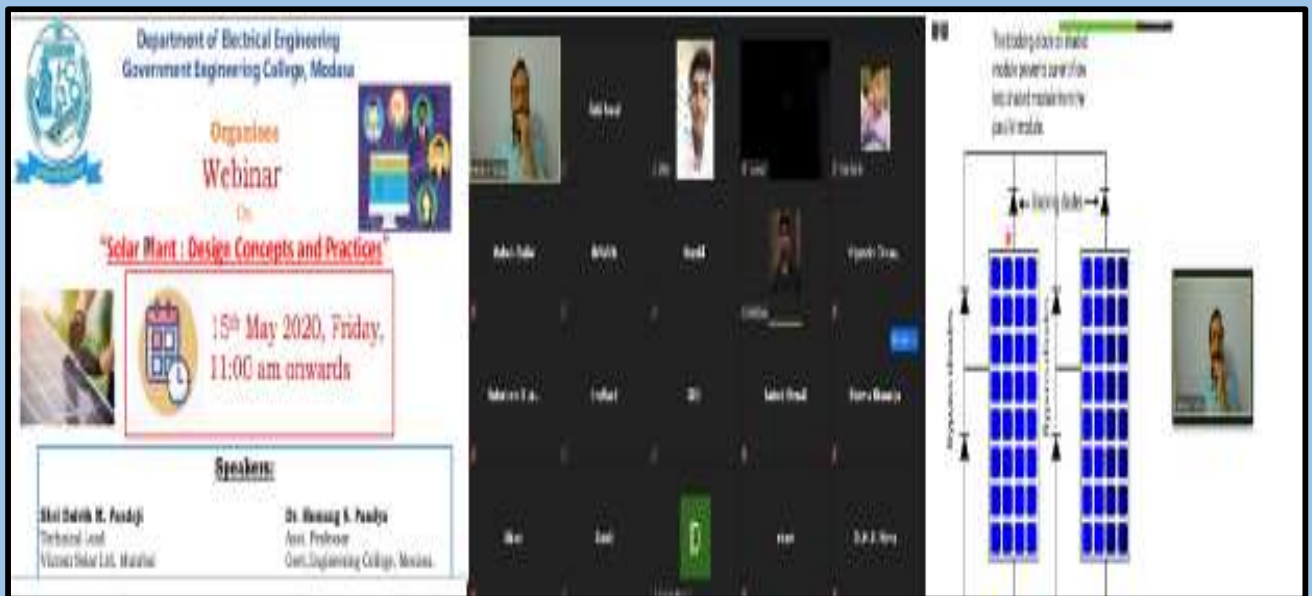


- ❖ An expert talk was organized by Department of Electrical Engineering on 2nd Aug 2019, from 10:55a.m. to 12:55 p.m. for Sem 5st (EE). Shri Gautam Modi, Deputy Engg., UGVCL, was invited to deliver an interactive session on "*Advancements in Electric Power systems*". Total **53** students of 5st semester EE actively participated in the session.
- ❖ An expert talk was organized by Department of Electrical Engineering on 11 Feb. 20, from 11.00am to 1.00pm for Sem 6st (EE). Shri G. K. PANCHAL owner of Smart Energy Systems, was invited to deliver an interactive session on "Microgrid and Changing scenario of Power business". Total **63** students of 6st semester EE participated in the same.

2) WEBINAR



- ❖ A webinar was organized by Department of Electrical Engineering on 11th May 2020, for Sem 6st and 8th (EE). The topic was "Design of Electrical Motors for E-Vehicle Application.". Prof Darshan U. Thakar explained the design concept of Electrical Motors use in E-Vehicles. Total **63** students of 6st semester EE have participated actively and made the session very interactive.



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Department of Electrical Engineering
Government Engineering College, Modasa

Organises
Webinar
On



"Substation Design Engineering and Recent Trends"



16th May 2020,
Saturday,
11:00 am onwards

Speaker:

Er. Keval N. Velani

Technical Consultant

ABB Power Products & Systems India Ltd.

- ❖ A webinar was organized by Department of Electrical Engineering on 16th May 2020 for Sem 6st (EE). The topic was substation design and recent trends. Er. Keval Velani (Technical consultant) from ABB Power explained in details about Substation design.". Total **23** students of 6st semester EE have participated actively and made the session very interactive during the lecture.

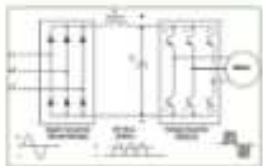


Department of Electrical Engineering
Government Engineering College, Modasa

Organises
Webinar

On

"Variable frequency Drives: Basics, applications and recent trends"



21st May 2020,
Thursday,
11:00 am onwards

Speakers:

Mr. Vishal Patel
Sr. Engineer- Gujarat,
D & MC Division, YASKAWA India Private Limited

Mr. Divyang Patel
RRL-Co ordinator
Weatherford (SMART WORK)

- ❖ A webinar was organized by Department of Electrical Engineering on 16th May 2020 for sem 6st (EE). The topic was variable frequency drives: Basics, Applications and Recent trends. Total **53** students of 6st semester EE participated in the same.

3) WEBINAR GIVEN BY FACULTY TO OTHER COLLEGE

LIVE

WEBINAR

Importance of Reactive Power in Power System Operation

Prof. Darshan Thakar
Assistant Professor
Govt. Engg. College, Modasa

MAY 05 **11 AM**

GROW MORE GROUP OF INSTITUTIONS
ELECTRICAL ENGINEERING DEPARTMENT



GROW MORE FACULTY OF DIPLOMA ENGINEERING
(Run by Grow More Foundation, Himmatnagar)
(Affiliated to OTE, College Code - 084)
(Recognized by AICTE, New Delhi)
(An Integrated Campus - Grow More Group of Institutions)

05th May, 2020

To,
Prof. Darshan Thakar
Assistant Professor
Electrical Engineering Department
Govt. Engineering College, Modasa

Dear Sir,

It is our great owner that you have conducted an expert webinar at on "Importance of Reactive Power in Power System Operation" for Grow More Faculty of Engineering /Diploma Engineering on 05/05/2020. We express our sincere thanks to you for providing your valuable time as expert for the above subject.

Thanking you,...

Prof. Ramesh Prajapati
(HOD of Electrical Dept.)



- ❖ Prof. Darshan U. Thakar delivered a webinar for Grow more Group of Institute on 5thMay, 2020. The topic of the webinar was "Importance of Reactive Power in Power System Operation". Total **65** students of Grow more Degree College and Diploma College participated in the session

INDUSTRIAL VISIT

1) 66 kV PUNSARI SUBSTATIONS



- ❖ Electrical Engineering Department, GECM organized an industrial visit of 66 kV substation at Punsari for 8th semester students on 9th Jan, 2020. 65 students along with 2 faculty members visited the same. The students could physically look at all the substation equipments which they had learnt in their theory class. The substation in charge showed explained to them about the incoming and outgoing lines from there and also the functions of various equipments.

2) PUNSARI VILLAGE VISIT



- ❖ Electrical Engineering Department, GECM organized visit of Punsari Village for 8th semester students on 9th Jan, 2020. 65 students along with 2 faculty members went around the first smart village of India. Punsari is a village located in [Sabarkantha](#) district in the state of [Gujarat](#). This village has no NGO and no NRI funding. 98% of the population is engaged in agriculture or dairy activities. Still CCTV camera monitoring system, Mineral water plant for all, CC roads, Centrally AC government schools that too with all panchayat funds are an amazing fact.

3) ENDURA PUMPS



- v Electrical Engineering Department, GECEM organized an industrial visit of Endura Pumps Ltd., a manufacturer of submersible pumps and motors for 8th semester students on 26th Dec., 2019. 63 students along with 2 faculty members visited this industry in GIDC Modasa. Students were explained as to how the submersible pumps are made of corrosion resistance stainless steel with built in check valve. All vital components are made of high quality 304/316 grade stainless steel and the shaft is SS 304/329/431. Endura Centrifugal Monoblock pump sets are powered by a totally enclosed fan cooled AC induction two pole motor. Motor stator is made of low watt loss silicon steel laminations assembled under pressure and rigidly locked in the frame. The windings are of high-grade enamelled copper wire and are varnish impregnated. Construction of motor frame and usage of quality materials result in high performance and low temperature rise thereby increasing the life cycle of the motor. These pumps are available from 0.25 HP to 1.50 HP

4) ADANI PORT, MUNDRA




- ❖ Electrical Engineering Department, GECM organized an industrial visit of Adani Port , Mundra for 6th semester students on 23-24/01/2020. 76 students of Sem6th Electrical Engg. accompanied by 4 faculty of the department visited the Power plant. Adani Ltd. is the largest private power producer in India with an installed capacity of 10,480 MW.
- ❖ On the first day, the students visited the Adani Wilmar Oil Refinery where various types of edible oils are processed. Then it was visit to Adani West Base. The port is made in a curve like a 'G'. This port has the record in India for unloading in minimum time. The second day was visit to the Adani Power Plant. The students saw transmission lines and huge transformers. The power plant is a multistorey building with boilers at the basement and controlling unit above. The students visited the control unit to understand the power generation process.

4) THERMAL POWER STATION

- ❖ Electrical Engineering Department, GECM organized an industrial visit of Thermal Power Station –Wanakbori (WTPS) on 23/01/2020. 83 students from Sem. 4th ,6th and 8th Electrical Engg.accompanied by 3 faculty of the department visited the Power station. WTPS has 7 units each of 210 MW. So, the total installed capacity of the plant is 1470 MW.The following sections of the Power station were visited. (1) Training centre (2) Coal and ash handling plant (3) Boiler section (4) Turbine/Generator floor (5) Electrical control room (6) Cooling tower (7) Switch yard (220kV & 400 kV). At the training centre the working cycle of thermal power station was explained. Students visited various small scale models of equipments used in the power plant. Very important practical data like temperature, pressure, quantity of coal, etc. used for the power generation was collected by the students. They also visited the coal and ash handling plant.

STUDENT PROJECTS

SR NO	PROJECT TITLE	DESCRIPTION
1	 HYBRID LIGHTING	<ul style="list-style-type: none">➤ Hybrid systems consisting of optical fibres and LED's for lighting is acknowledged as HYBRID LIGHTING. It has many advantages such as use of natural light for daytime illumination, elimination of Blue rays coming from LEDs and improves human biological clock. It's working- when it is full daylight in environment, LEDs switches OFF and when it is dark in environment LEDs switches ON. Presently Hybrid Lighting is made specific for applications like Tunnel, Offices, Buildings, Cabins at crossroads, etc.➤ This project is prepared by Rishi Nuval, Mayank Mehta and Reshma Khanusiya.

2



**SMART BLIND
STICK NAVIGATOR**

- The project aims to prepare a “SMART BLIND STICK NAVIGATOR” for blind people who face difficulty in moving from one place to another in day to day life.
- The project has made use of ultrasonic sensor, water sensor, temperature sensor, LDR sensor, GPS module and GSM module. In this way, the vision impaired people can move around and will be guided by the respective sensors. The smart blind stick is controlled by Arduino UNO R3.
- This project is prepared by ManatJinal, Pranami Sanket, Pranami Manish and Thorat Zankhana.

3



BABY CRADLE

- This project presents a design and prototype implementation of Advanced smart Baby cradle that uses Electrical DC Car Wiper Motor, Monitoring camera, cradle RF Remote as their equipment. This Project will make life easy for working parents. The Price is also Affordable. There are a number of facilities in a Baby Cradle.
- This project is prepared by Bhavesh Parmar, Kikani Tushar, Jambukiya Kalpesh and Patel Jiten.

4



SMART DUSTBIN

- In Our daily life many essential raw materials (Made of Metal) of miniscule level are thrown to garbage. Using this concept, the team came with the solution of segregation of metal scraps from common trash. The project Separates Metal and Non- metal scraps /trash /garbage. When trash is put in the Smart Dustbin, it will detect by a Metal Detecting sensor.
- This project is prepared by Mengar ParthK ,Limbachiya Manish M Parekh Jay K and Chaudhari Nachiket M guided by Prof. Raj K Kapadia

5



BABY CRADLE

- The health service sector has been continuously trying to improve the service given to the people in need of mobility assistance. As a result, more developments have been directed towards robotic wheelchair. A robotic wheelchair is an intelligent wheelchair that has capabilities of navigating, detecting obstacles and moving automatically by utilizing sensors and artificial intelligence. This project is to develop a wheel chair for physically disabled people and elderly people. To make disabled people independent of others. It is easy to operate & control. It is a wheelchair which can be controlled by simple hand gesture.
- This project is prepared by Shruti Patel, Yogini Bhinsara, Ganvit Vaibhavi and Patel Hiral

FACULTY FACTS

1) PURSUING Ph.D.

NAME	DESIGNATION	RESEARCH AREA	Ph.D. FROM UNIVERSITY
Prof. N.V.Upadhyay	Assistant Prof.	Power System Analysis and Protection	Indus University
Prof. K.K. Bhatt	Assistant Prof.	Exploration of Harmonic profile in Multilevel Inverter	Indus University
Prof. D.U.Thakar	Assistant Prof.	Electrical Vehicles	Ganpat University

2) PAPER PUBLISHED

Month	Year	Title of Paper	Name of National Conference	Host institution	Date	Author Name
October	2019	Comparison Of Advance and Convention al Motors for Electrical Vehicle Application	International C onference on Recent Develo pments In Control, Automation and Power Engineering, RDCAPE 2019	Amity Unive-rsity	10-11/10/2019	Prof. D.U. Thakar

3) FACULTY TRAINING

Sr No	Academic Year 1st July to 30th June	Month	Year	Title of Short term Training Program (STTP)	Host Institution (approval/ sponsoring body)	Date	Days	Faculty Name
1	2019-2020	06	2019	Induction Phase -1	NITTTR, Bhopal	10/06/2019 to 21/06/2019	15	D.U.Thakar
2	2019-2020	07	2019	Faculty Development Program for design Engineering Level-1	GTU, Ahmedabad	09/07/2019 to 12/07/2019	4	D.U.Thakar
3	2019-2020	07	2019	NBA Accreditation training program	IITRAM, Ahmedabad	22/07/2019 to 26/07/2019	5	H.D.Mehta
4	2019-2020	07	2019	NBA Accreditation training program	IITRAM, Ahmedabad	22/07/2019 to 26/07/2019	5	J.R.Iyer
5	2019-2020	07	2019	NBA Accreditation training program	IITRAM, Ahmedabad	22/07/2019 to 26/07/2019	5	N.V.Upadhyay
6	2019-2020	09	2019	Induction Phase-1	NITTTR, RCTI, Ahmadabad	16/09/2019 to 27/09/2019	15	S.V.Banekar

4) CHANGE IN FACULTY POSITION

Name	Designation	Date of joining/ getting- relieved	New Recruit/ Transfer
Prof. G.P. Rathod	Asst. Prof.(Adhoc)	28/01/2020	Transferred to L.D.College
Prof. G.B. Pujara	Asst. Prof.	01/02/2020	Transferred to L.D.College

5) PLACEMENTS DETAILS

Below students of VIIIth semester Electrical are selected in Pratibha Engineering.

Sr.No.	NAME
1	Mehta Mihir Bhavneshbhai
2	Suraj Singh
3	Prajapati Yogeshkumar Dharmabhai
4	Limbachiya Manishkumar Gunvatbhai
5	Tarasariya Hipendra Rameshbhai
6	Solanki Prakash Laxamsinh
7	Banker Zankrut Kiritkumar
8	Pranami Sanket Vinodbhai
9	Shah Preetkumar P
10	Prateek Shivprasad Singh

STUDENTS ACHEIVEMENTS

Mayur Padhiyar

Mayur Padhiyar, student of 8th Semester Electrical participated in the Vadodara International Marathon 2020 and completed it successfully. He covered a run of 42.2 km.



Malek Sahil



Malek Mohammadsahil Nasrullamiya, student of 4th Semester Electrical won the first prize in the National Level Skating Tournament, Khel Mahakumbh 2019.

Shelat Shivam

Shelat Shivam, student of 8th Semester Electrical was promoted to rank 'Cadet Under Officer' and Scored Alpha ('A') grade in 'C' certificate exam of NCC in 2019. Also he was the highest scorer in Gujarat Armoured Squadron unit.



Paresh Vinzava

Paresh Vinzava, student of 4th Semester Electrical participated and achieved National Level Certificate in Laser War Zone held in February 2020 at GIT, Gandhinagar .



Shagun Tripathi

Shagun Tripathi, student of 5th Semester has been awarded with Certificate of Participation from Ministry of Tourism and MyGov for successfully completing "Dekho Apna Desh Webinar Episode 66: Agra: Taj and Beyond" held in December 2020.



❏ Krishna Bhavsar

Krishna M. Bhavsar, student of 4th Semester Electrical participated and won the silver medal in the college level cricket tournament.



❏ Sanket Katariya

- **Katariya Sanketkumar**, a student of 4th Semester Electrical, participated in the college level volleyball tournament and his team was 1st runners up.





ELECTRIC FUN-FACTS

Electricity is present in our bodies – our nerve cells use it to pass signals to our muscles.

100 Google searches consumes energy equivalent to a 60-watt light bulb burning for 28 minutes.

An electric car uses less energy than traditional gasoline-powered vehicles.

LED light bulbs use one-sixth of the electricity conventional bulbs do.

Fossil fuels are the largest source of electricity, but wind, water and the sun can also produce it.

Only one-third of the energy in burning coal reaches consumers as electricity.



BY THE TEAM ELECTROZINE
GOVERNMENT ENGINEERING
COLLEGE MODASA