GOVERNMENT ENGINEERING COLLEGE, MODASA

SINCE 1984

EC ENGINEERING DEPARTMENT

INFORMATION BOOKLET

VOL.1

JUNE

2025

www.gecmodasa.ac.in gec.modasa_ec gec_modasa_ec

TABLE OF CONTENTS

Dr. Alpesh H. Dafda

MESSAGE FROM THE HEAD OF DEPARTMENT

Electronics & Communication Department

Dear Students & Faculty members, Warm greetings to all.

The Electronics & Communication Engineering Department was established in the year 1984 and is considered one of the oldest and most successful concrete pillars of Government Engineering College, Modasa. The department offers a Bachelor of Engineering in Electronics & Communication with an intake capacity of 30 students. The department has highly qualified faculty members and all 16 laboratories are equipped with the latest technology equipment and instruments. The department provides teaching in the area of Analog and Digital Communication, VLSI Design, Embedded Systems, Signal Processing, Antenna and Microwave Engineering, and Microprocessors. The Department of Electronics & Communication Engineering has a vision to deliver technical programs that meet the changing needs of society and industry, preparing determined and goal-oriented engineers with high ethical values and strong analytical skills.

The Department of Electronics & Communication Engineering emphasizes developing technical skills and creating awareness about the needs of industries through industry-institute interaction, technical seminars, workshops, and specialized training in thrust areas. Students are encouraged to think innovatively through project works and research in fields like satellite communication and wireless networks, with the department providing a full-fledged departmental library and computer center to support overall personality and technical development.

The Electronics & Communication Engineering program is committed to maintaining high academic standards and quality assurance. The department consistently works towards excellence in technical education and infrastructure to ensure our students remain in tune with the rapid advancements in the global electronics field.

ABOUT THE INSTITUTE

Government Engineering College, Modasa was established in 1984 under the Directorate of Technical Education, Gujarat State, Gandhinagar in North Gujarat region with a view to spread out technical education in the region and hence promote industrial development. The institute was affiliated with Hemchandracharya North Gujarat University (HNGU), Patan from 1984 to 2007. The institute is affiliated to Gujarat Technological University; Ahmedabad from 2008. It is recognized by All India Council for Technical Education (AICTE), New Delhi.

The institute was started with two undergraduate courses, with an intake of 60 each. At present it runs seven under graduate courses and two post graduate courses. Each department has well established laboratories, computer centers and well qualified staff.

VISSION AND MISSION

VISSION

To be a Leading Institution on Ensuring Academic Excellence, Research, Nurturing Innovation and Entrepreneurial Attitude to produce competent technocrats for service to Nation.

MISSION

- To be a student centric institute imbibing experimental, innovative and lifelong learning skills, addressing societal problems.
- To create a conductive ecosystem for research, innovation and extension services.
- To inculcate entrepreneurial attitude and values amongst learners.
- To collaborate with Industries and other institutions to strengthen symbiotic relations.
- To mentor aspiring Institutions to unleash their potential, towards nation building.

ABOUT THE DEPARTMENT

ELECTRONICS & COMMUNICATIONS DEPARTMENT

The department of Electronics & Communication was established in the year 1984 is one of the oldest and successfully running the engineering branch of G.E.C. Modasa. The Department offers a four-year course in electronics and communication with 120 intakes.

The department was established with the mission to deliver technical programs and services to meet the changing needs of the society and industry, thereby contribute to the overall techno-economical development of the state. The department is persistently committed to enhancing technical knowledge with high ethical values.

The department of E.C. is accommodated in building No. 4. It has laboratories in thrust areas of Analog and Digital Electronics, Communications, Antenna, Microwave, VLSI Design, and Signal Processing. Department has a Computer Center with the latest computer facilities. All labs are well equipped with the latest types of equipment to keep the students in tune with the advancement in the field of Electronics & Communication. The department is also equipped with a full-fledged departmental library.

VISSION AND MISSION OF THE DEPARTMENT

VISSION

To strive for academic excellence, enhance industry- institute interaction to create competent technocrats in relevant areas for addressing ever changing needs of society.

MISSION

- To ensure dissemination of knowledge through effective teaching and learning process.
- To strengthen collaboration with industries.
- To prepare the students with multidisciplinary competence for their successful career and service to the society.

FACULTY AND STAFF (EC ENGINEERING)

DR. JEETENDRAKUMAR VADHER

Designation : Principal
Qualification : M. Tech. (IIT-Madras), Ph.D. (HNGU-Patan)
Experience : 28 Years
Area of Interest : Production, Manufacturing, CAD/CAM Industrial Engineering, Automation
Email : jeetendra.vadher@gecmodasa.ac.in
Website : http://jeetendravadher.in/

DR. ALPESH H. DAFDA

Designation : Associate Professor and Head
Qualification : Ph.D
Experience : 24Years
Area of Interest : Wireless and Wired Communication Image Processing and Applications and ML.
Email : alpesh.dafda@gecmodasa.ac.in

SHILPA K RANA

Designation : Assistant Professor
Qualification : M.Tech (ECSE)
Experience : 11 Years
Area of Interest : RF and Microwave
Email : shilprana@gmail.com

PROF. (DR.) NIRAV D. PATEL

Designation : Assistant Professor
Qualification : Ph.D.
Experience : 15 Years
Area of Interest : Wireless Communication
Email : nirav@gecmodasa.org

MR. KETU RAMANBHAI PATEL

Designation : Assistant Professor
Qualification : M.E. (CSE)
Experience : 12 Years
Area of Interest : Analog and Digital Communication, Wireless Communication, Electromagnetics
Email :ketu@gecmodasa.org

DR. BHAVIK ARVINDBHAI BRAHMBHATT

Designation : Assistant Professor
Qualification : Ph.D.
Experience : 07 Years
Area of Interest : Power Electronics,Digital Signal Processing, Embedded System
Email :bhavik.brahmbhatt@gecmodasa.ac.in

SAMEER H. MANSURI

Designation : Assistant Professor
Qualification : M. E. (Communication Engg.)
Experience : 10 Years
Area of Interest : RF and Microwave, Embedded System design
Email : mansurisameer@gmail.com

PRIYANK V PATEL

Designation : Assistant Professor
Qualification : M.E.E.C.
Experience : 09 year
Area of Interest : VLSI , IMAGE Processing ,Sports
Email : pvp.fetr@gmail.com
Website : https://sites.google.com/view/priyankpatelgec/home

MANISH CHAUHAN

Designation : Assistant Professor
Qualification : M. E.
Experience : 05 Years
Area of Interest : Digital Electronics, Micro Processor and Controller, Optical Communication, Linear IC
Email : manish68848@gmail.com

LABORATORIES

ANALOG ELECTRONICS AND DIGITAL ELECTRONICS LABORATORY

Analog Electronics and Digital Electronics laboratory provides the platform for the students to understand the behavior of the circuit related to Analog Electronics and Digital Electronics. The laboratory is equipped with the different experimental set-ups like Lab Station, digital trainer kits provided to the students to do hands on for observing the response of the circuits and to carry out the testing of the circuits.

VLSI & EMBEDDED SYSTEMS LAB

It provides the platform for the students to understand the architecture and interfacing of microprocessor, microcontroller, Field Programmable Gate Array (FPGA) and Complex Programmable Logic Device (CPLD). This laboratory is equipped with the different experimental set-ups. Facility is provided to the students to do hands on for testing their programming codes

DIGITAL COMMUNICATION LAB

It deals with the analysis and manipulation of signals. The equipments like Digital Storage Oscilloscope (DSO), Lab Station Amplitude, frequency and phase shift keying Trainer Kits and modulation kits for mobile communication, AM-FM Modulation-Demodulation kits are available in this laboratory.

JUNE 2025

VOLUME.9

GOVERNMENT ENGINEERING COLLEGE,MODASA

EC ENGINEERING DEPARTMENT

NEWSLETTER

Inside The Issue

- **Departmental Activities**

The Departmental Activities takes initiatives for overall development of students and give them a practical orientation to inculcate employability skills which will help them to face this competitive world. The department activities conducted are focused on imparting technical knowledge along with its application in the practical world. Simultaneously personality development of students is also given priority. It includes major activities conducted such as Ouiz Competition, Expert Lectures, Workshops, Seminars, Industrial Visits.

- **Faculty Activities**

Educational activity of the Faculty is performed through studies, including the special forms of study for knowledge upgrading and continuous professional education and training. Scientific work is performed through basic, applied and development research, which is carried out for the purpose of developing the profession, raising the quality of teaching, upgrading the scientific and professional level.

PRAVAAH 2K25

The Department of EC Engineering had organized "Pravaah- 2K25 The Project Expo"on 6th March 2024. The project prepared by students using innovative ideas, and it drew the attention of dignitaries during the project expo. While visiting the Expo, the judges expressed their appreciation to the students for their tireless work in showcasing their creative ideas for the good of society.

DEPARTMENTAL ACTIVITIES

INDUSTRIAL VISIT TO BISAG-N, GANDHINAGAR

On March 13, 2025, 28 students from the 4th and 6th semesters participated in an industrial visit to BISAG-N in Gandhinagar. The excursion offered a deep dive into geospatial technologies, satellite communication, and remote sensing. By engaging with live demonstrations and industry experts, students saw firsthand how spatial data analytics and digital mapping are applied to real-world projects, effectively bridging the gap between classroom theory and professional practice.

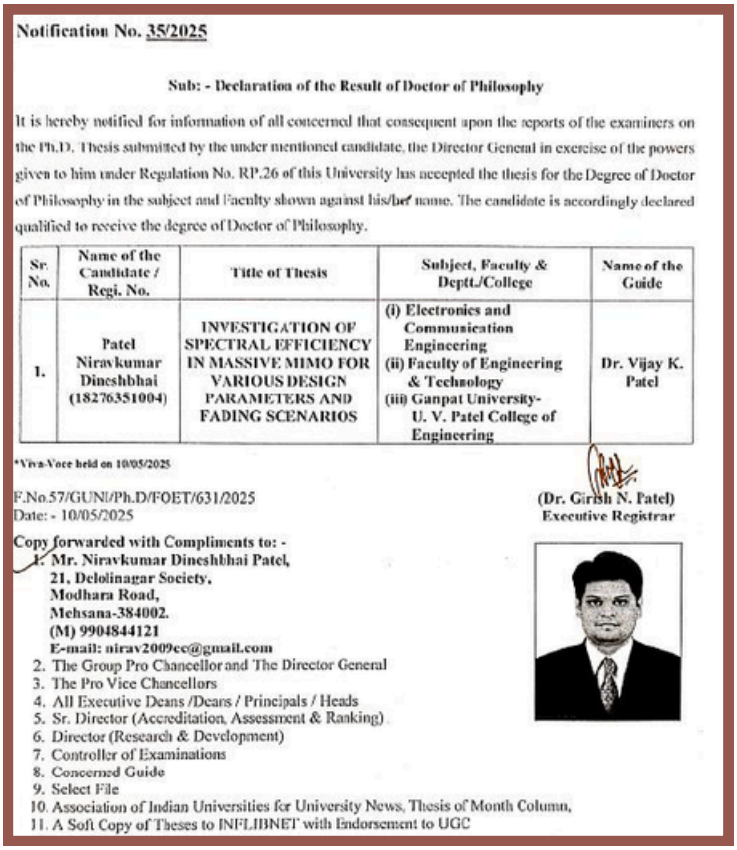
POSTER PRESENTATION BY FINAL YEAR STUDENTS

Final-year students showcased their internship achievements during a Poster Presentation event on April 24, 2025. By presenting their industrial projects to faculty and peers, students demonstrated significant growth in technical expertise and professional communication. The session, which focused on the practical application of academic knowledge, provided a valuable forum for knowledge sharing and critical evaluation of real-world work experience.

FACULTY ACTIVITIES

ACHIVEMENTS

Prof. Nirav D. Patel, from the Department of Electronics and Communication Engineering, was conferred a Ph.D. by Ganpat University on May 10, 2025. His doctoral research focused on enhancing Spectral Efficiency in Massive MIMO, a critical area for the evolution of next-generation wireless networks. This achievement underscores his commitment to advancing telecommunications technology and academic excellence.



Notification No. 35/2025

Sub: - Declaration of the Result of Doctor of Philosophy

It is hereby notified for information of all concerned that consequent upon the reports of the examiners on the Ph.D. Thesis submitted by the under mentioned candidate, the Director General in exercise of the powers given to him under Regulation No. RP.26 of this University has accepted the thesis for the Degree of Doctor of Philosophy in the subject and Faculty shown against his/her name. The candidate is accordingly declared qualified to receive the degree of Doctor of Philosophy.

Sr. No.	Name of the Candidate / Regi. No.	Title of Thesis	Subject, Faculty & Deptt./College	Name of the Guide
1.	Patel Niravkumar Dineshbhai (18276351004)	INVESTIGATION OF SPECTRAL EFFICIENCY IN MASSIVE MIMO FOR VARIOUS DESIGN PARAMETERS AND FADING SCENARIOS	(i) Electronics and Communication Engineering (ii) Faculty of Engineering & Technology (iii) Ganpat University- U. V. Patel College of Engineering	Dr. Vijay K. Patel

*Viva-Voce held on 10/05/2025

F.No.57/GUNI/Ph.D/FOET/631/2025
Date: - 10/05/2025

(Dr. Girish N. Patel)
Executive Registrar

Copy forwarded with Compliments to: -
1. Mr. Niravkumar Dineshbhai Patel,
21, Delolinagar Society,
Modhara Road,
Mehsana-384002.
(M) 9904844121
E-mail: nirav2009ec@gmail.com
2. The Group Pro Chancellor and The Director General
3. The Pro Vice Chancellors
4. All Executive Deans /Dears / Principals / Heads
5. Sr. Director (Accreditation, Assessment & Ranking)
6. Director (Research & Development)
7. Controller of Examinations
8. Concerned Guide
9. Select File
10. Association of Indian Universities for University News, Thesis of Month Column,
11. A Soft Copy of Theses to INFLIBNET with Endorsement to UGC

Prof. Priyank V. Patel, representing the Department of Electronics and Communication Engineering, secured the District-Level Championship in Badminton Doubles at the Khel Mahakumbh on January 7, 2025. This victory reflects his dedication to sportsmanship and excellence beyond the classroom, bringing distinction to the department and the institution.

RESEARCH & PUBLICATIONS

PROF. NIRAV PATEL

Prof. Nirav Patel has published a significant research paper titled "A Novel Approach to Enhancing Spectral Efficiency in Massive MIMO Using Optimal Pilot Reuse Factor and Receive Combining Techniques." The study was featured in the International Journal of Advanced Technology and Engineering Exploration (Vol. 12, Issue 127, pp. 991–1009), published on June 25, 2025, by The ACCENT Social and Welfare Society, India. This work contributes to the optimization of high-capacity wireless communication systems.

FACULTY ACTIVITIES

ACHIVEMENTS

An interdisciplinary team of faculty members has successfully published an Indian Patent titled "Real-Time Road Safety System with Vehicle Detection, LORA Network, and IoT-Enabled Studs" (Patent Application No.: 202521009529). The project features a collaboration between Prof. N. N. Maltare and Prof. Safvan Vahora (Information Technology) and Prof. P. V. Patel (Electronics and Communication Engineering), along with other contributors. This invention leverages LoRa networks and IoT technology to enhance road safety through real-time monitoring and intelligent infrastructure.

Office of the Controller General of Patents, Designs & Trade Marks
Department for Promotion of Industry and Internal Trade
Ministry of Commerce & Industry,
Government of India

INTELLECTUAL PROPERTY INDIA

Application Details	
APPLICATION NUMBER	202521009529
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	05/02/2025
APPLICANT NAME	**1 . Government Engineering College, Modasa** **2 . Sumeet Tokare** **3 . Urvisha Delvadiya** **4 . Darshana Panchal** **5 . Kavy Metkel** **6 . Dhaval Vadher** **7 . Dr. N. N. Maltare** **8 . Dr. Safvan Vahora** **9 . Prof. Priyank V. Patel**
TITLE OF INVENTION	Real-Time Road Safety System with Vehicle Detection, LORA Network, and IoT-Enabled Studs
FIELD OF INVENTION	ELECTRONICS
E-MAIL (As Per Record)	shreedattalawconsultancy@gmail.com
ADDITIONAL-EMAIL (As Per Record)	chothani18preeti@gmail.com
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	06/02/2025
PUBLICATION DATE (U/S 11A)	28/03/2025
REPLY TO FER DATE	09/07/2025

PARTICIPATION

Faculty Name	Training/Induction Phase/FDP/Workshop/ Seminar	Starting Date	Ending Date	Hosting Institution	Venue
Prof. S. K. Rana	Yoga & Pos. Psych. for Career & Life	17/02/2025	11/04/2025	SWAYAM NPTEL	Online
Prof. N. D. Patel	Yoga & Pos. Psych. for Career & Life	17/02/2025	11/04/2025	SWAYAM NPTEL	Online
Prof. N. D. Patel	Edu. Tech & ICT	20/01/2025	11/04/2025	SWAYAM NPTEL	Online
Prof. K. R. Patel	RF & Antenna Design	27/01/2025	01/02/2025	AICTE ATAL FDP	Online
Prof. S. H. Mansuri	Industrial Training	05/08/2024	17/08/2024	Australian Premium Solar (India) Pvt Ltd	Australian Premium Solar (India) Pvt Ltd
Prof. P. V. Patel	Industrial Training	05/08/2024	17/08/2024	Australian Premium Solar (India) Pvt Ltd	Australian Premium Solar (India) Pvt Ltd
Prof. B. A. Brahmbhatt	Industrial Training	05/08/2024	17/08/2024	Australian Premium Solar (India) Pvt Ltd	Australian Premium Solar (India) Pvt Ltd
Prof. S. H. Mansuri	Edu. Tech & ICT	20/01/2025	11/04/2025	SWAYAM NPTEL	Online
Prof. P. V. Patel	Computer Networks & Internet Protocol	20/01/2025	11/04/2025	SWAYAM NPTEL	Online

PARTICIPATION

Faculty Name	Training/Induction Phase/FDP/Workshop/ Seminar	Starting Date	Ending Date	Hosting Institution	Venue
Prof. M. S. Chauhan	Industrial Training	09/06/2025	27/06/2025	e-Infochip - An Arrow Co.	e-Infochip - An Arrow Co.

FACULTIES PURSUING PH.D

Faculty Name	Research Area	Ph.D Pursuing from University
Prof. Shilpa Rana	Microwave Filter Design	Gujarat Technological University
Prof. Sameer Mansuri	Antenna Design	Gujarat Technological University