



BIT- IX
DECEMBER-
2023
Bits & Bytes

Bits & Bytes **Bits & Bytes** EC NEWSLETTER

Ocean Of Career Opportunity in Electronics & Communication

VISION

To impart excellent technical education for developing ethically sound and globally competent skills to girls opting for engineering as a career in the revolutionizing era of electronics and communication

MISSION

- To provide a creative environment for innovation in the field of Electronics & Communication through structured teaching learning process.
- To create a platform for effective interaction between Industry and Institute.
- To contribute to societal needs through innovation.
- To inculcate a self-learning attitude, environment skills and professional ethics among students so as to enable them to contribute for sustainability of environment and serve the society.



ELECTRONICS AND COMMUNICATION ENGINEERING DEPARTMENT

GOVERNMENT POLYTECHNIC FOR GIRLS

OPP. PRL, GUJARAT UNIVERSITY ROAD, NAVARANGPURA, AHMEDABAD – 380 015



Acknowledgment

Electronics and Communication Engineering Department of Government Polytechnic for Girls, Ahmedabad feels thrilled to present its genuine stakeholders "Bits & Bytes" a semester newsletter. This newsletter "Bits & Bytes" started with an objective of knowledge sharing and spreading divergent activities of Electronics and Communication Engineering Department. We would also like to focus on new developments in Electronics and Communication field, latest ongoing and upcoming trends and events, previous month's news and events.

We consider, a newsletter "Bits & Bytes" as a best place to appreciate the students, faculty members and stake holders for their achievements. We hope, this newsletter provides necessary motivation to the stake holders as well as also very much helpful to update our knowledge of fast growing Electronics and Communication field.

Finally, we would like to expand our deepest gratitude to all members who directly or indirectly involved and give their valuable support for making this newsletter "Bits & Bytes". We know that without grace of all mighty GOD this thing is not possible. So, here by we present the first Bit (Volume) of "Bits & Bytes".

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Message from Principal's Desk



Prof. B.B.SONEJI

“Technology is the Gift of God. After the gift of life, it is perhaps the greatest God’s gifts. It is the mother of civilization, of arts and of sciences.”

-Freeman Dyson

Government Polytechnic for Girls - Ahmedabad (GPGA), a premier diploma engineering institute was established in the year 1968 with the aim to provide technical education to girls in the heritage city of Ahmedabad. It is located right opposite to PRL and adjacent to ATIRA, in the throbbing educational hub within the heart of the city and in the vicinity of reputed institutes like L.D.College of Engg., Gujarat University, L.M.College of Pharmacy and the world renowned CEPT University. It is endowed with a beautiful green campus which has its own flora and fauna.

At present, GPGA offers 3-year diplomas in 6 programmes under Commissionerate of Technical Education and is affiliated with Gujarat Technological University (GTU). These are Diplomas in Architecture Assistantship (DAA), Biomedical Engineering (DBE), Computer Aided Costume Design and Dress Making (DCACDDM), Civil Engineering (DCE), Computer Engineering (DCoE), Electronics and Communication Engineering (DEC) and Information Technology Engineering (ITE).

GPGA has a tradition of imparting quality technical knowledge and ethical values to the students. No wonder GPGA is ranked among top 10 government diploma engineering colleges in Gujarat consistently over the last five years.

For years, the institute’s major focus and concern have been our students and our institution

strives to impart the best knowledge in respective fields for promoting and pursuing multidisciplinary diploma engineering in the most disciplined manner. Every student of the institute has been among some of the best talents of the vibrant state of Gujarat. Many of GPGA's alumnae have established themselves as entrepreneurs while some have continued higher studies with well-known engineering institutes of India as well as abroad. Thus, they have carved a niche for themselves in various technical fields throughout the state, our nation and even abroad.

The institute has an excellent track record of placements in past few years and students of GPGA have proved their mettle in industry, academics, and administration over the last many years. This glory has been due to the synergetic efforts of management, learned faculty, dedicated staff and sincere students over these years. I urge everyone, including staff and students, to make excellent careers by availing the unique opportunity that GPGA provides through classroom teaching, laboratory instructions, industrial trainings and participation in sports, cultural and other extra-curricular activities of interest. Recently, formation of GPGA's Alumnae Association has also been undertaken.

During the current academic year, three programmed of GPGA i.e. DCACDDM, DCE and DCoE have initiated the process of application for Accreditation with NBA. For the faculty and administrators, accreditation promotes ongoing self-evaluation and continuous improvement and provides an effective system for accountability. For the institute or programme, accreditation enhances its national reputation and represents peer recognition. Thus to further the institute's aim towards excellence, accreditation process has been undertaken. I extend my best wishes to all staff members and students of these programmes for getting accredited in the year 2021.

I express my sincere gratitude to all our stakeholders for their continued support, cooperation and active involvement to make GPGA a citadel of Technical Learning, which sets its own benchmark.

Message from HOD's Desk



Prof. T. P. Chanpura

Dear Readers,

It gives me great pleasure to present you this 9th Bit (Volume 9) of December 2023.

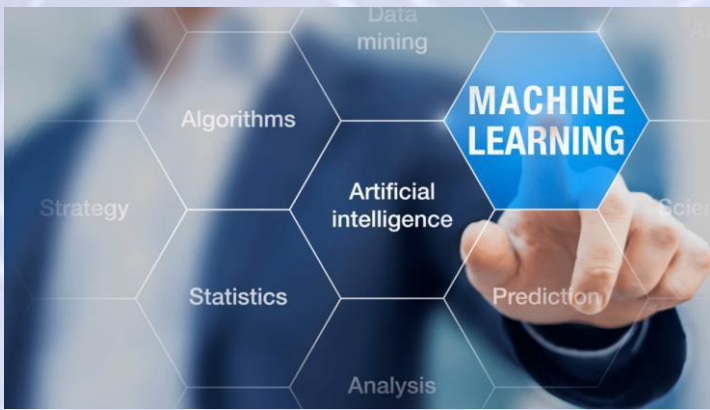
Our department continues to lead the way in cutting-edge fields such as optoelectronics, sustainable electronics, and embedded AI. With a strong emphasis on industry-driven learning, our students are gaining valuable real-world experience through hands-on projects, immersive internships, and successful placements in top organizations. Their exposure to emerging technologies ensures they are well-prepared to tackle the challenges of tomorrow.

A special note of appreciation goes to K.N. Chaudhari, M.R. Panchal, and our dedicated editing team for their unwavering contributions. Their efforts in refining our academic framework, fostering research opportunities, and maintaining a high standard of excellence have been instrumental in our growth.

A heartfelt thank you to our incredible student team, whose enthusiasm, creativity, and dedication continue to drive innovation within our department. Their hard work in research, project development, and peer collaboration reflects a spirit of excellence and a commitment to pushing technological boundaries.

By adopting a feedback-driven approach, we continue to enhance our education model, ensuring that it remains dynamic, relevant, and impactful. The collaboration between students, faculty, industry partners, and parents helps us create an environment where innovation thrives.

To our graduates—keep striving, keep innovating, and keep pushing the limits of possibility! Your dedication and passion will drive the future of technology, and we are proud to see you excel in your journey ahead.



AI AND MACHINE LEARNING

Artificial Intelligence (AI) and Machine Learning (ML) are two related yet distinct concepts within the field of computer science. AI is a broader concept that aims to create intelligent machines capable of simulating human thinking and behavior. It involves various techniques, including rule-based systems, logic programming, and machine learning algorithms.

On the other hand, ML is a subset of AI that focuses on enabling machines to learn and improve from data without explicit programming. ML algorithms analyze large datasets, identify patterns, and generate models that can make predictions or decisions based on new data. This learning process improves the model's performance over time as it is exposed to more data.

AI and ML have numerous applications across various industries, including healthcare, finance, manufacturing, and education. They can be used for predictive analytics, natural language processing, computer vision, and robotics, among other applications. By combining AI and ML, organizations can process and analyze large volumes of data, drive better decision-making, generate recommendations and insights in real-time, and create accurate forecasts and predictions.

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In summary, AI is a broader concept that includes various techniques and strategies for creating intelligent machines, while ML is a specific application of AI that focuses on enabling machines to learn and improve from data. Both AI and ML have numerous applications and benefits across various industries, making them essential tools for modern computing and data analysis.

CLOUD COMPUTING

Cloud computing is a technology that enables users to access and utilize computing resources over the internet instead of relying on local servers or personal computers.

It offers on-demand availability of computing resources, such as storage, infrastructure, and software, eliminating the need for individuals and businesses to manage physical resources themselves.

Cloud computing service models include Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS).

IaaS provides virtualized resources, PaaS offers features for application deployment, and SaaS provides fully managed functional software as a service over the



internet.

Cloud computing also offers various networking technologies, such as wide-area networks (WAN), load balancers, content delivery networks (CDNs), and software-defined networking (SDN), to ensure data flows quickly, easily, and securely between front-end users and back-end resources.

Cloud computing relies heavily on the virtualization of IT infrastructure, such as

servers, operating system software, networking, and other infrastructure, which are abstracted using special software to pool and divide resources.

In summary, cloud computing is a technology that offers on-demand availability of computing resources, such as storage, infrastructure, and software, over the internet. It offers various benefits, including flexibility, efficiency, strategic value, security, and cost-effectiveness. Cloud computing service models include IaaS, PaaS, and SaaS, and there are three main types of cloud computing deployment models: public cloud, private cloud, and hybrid cloud. Cloud computing also offers various networking technologies and relies heavily on the virtualization of IT infrastructure.

Hands on Workshop Microcontroller



Orientation program

For First Year Diploma students an orientation program has been held from EC and ICT department. Students were got aware about the structure of EC engineering course in diploma and GTU teaching scheme.



Arduino Workshop

A hands-on workshop held on "Basics of Arduino". Students were got knowledge and aware about various operation of Arduino by interfacing different sensors with it using its IDE.



PROFFESIONAL DEVELOPMENT

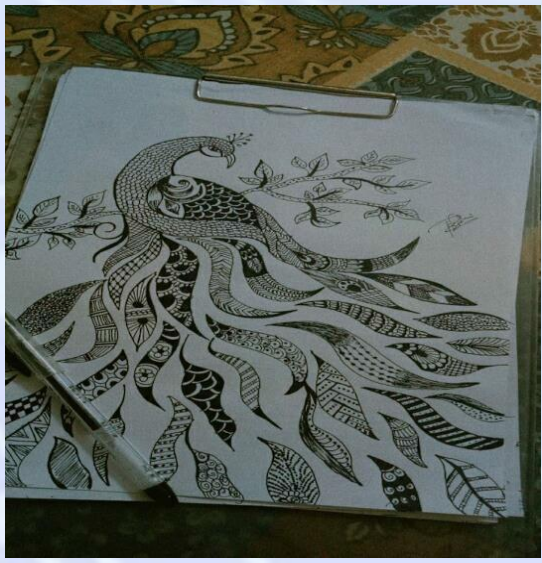
Mr. P.G.KALARIA have successfully completed 1 weeks NITTR BHOPAL certification course which is

approved for faculty development program by AICTE on "Digital Signals and Image Processing" during July 2023.

Ms. K.N.CHAUDHARI have successfully completed 8 weeks NPTEL ONLINE certification course which is approved for faculty development program by AICTE on "Creativity in Teaching Learning Processes" during Aug 2023 conducted by NITTR Bhopal.

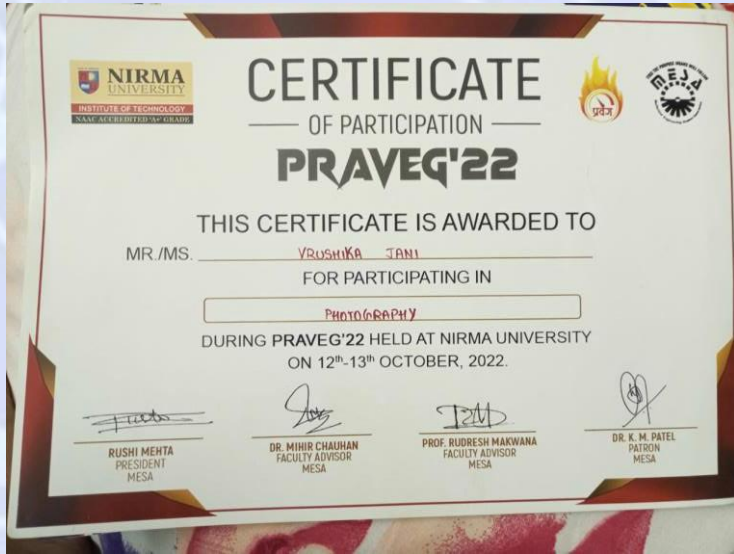
ARTS MADE BY STUDENT

{ Dhruva Dhamsaniya , Prachi Soni }



Student's Achievement

Some of EC students has participated in event held by NIRMA university and GP Ahmedabad



Students Contributed:

Dhruva Dhamsaniya

Nikita Chaudhary

Vrushika Jani

Anshukha Gupta

VISION

To carve a brighter prospect for the nation through excellence in technical education for fostering skills, ethical values and environmental consciousness among girl students while undertaking existing and forthcoming challenges.

MISSION

- To nurture technical and creative skills through quality education.
- To strengthen industries interaction.
- To impart real life problem solving skills.
- To foster care for sustainability of environment and importance of social responsibility among girl students.

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