GPG, Ahmedabad

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 engineering career in the revolutionizing era of electronics and

MISSION

- To provide a creative environment for new development in the electronics and communication field through structured teaching and learning process.
- To strive towards efficient interaction between industry and institute.
- To serve the needs of the society through innovations.

ELECTRONICS AND COMMUNICATION ENGINEERING DEPARTMENT

GOVERNMENT POLYTECHNIC FOR GIRLS
OPP. PRL, GUJARAT UNIVERSITY ROAD, NAVARANGPURA, AHMEDABAD – 380 015

या कुन्देन्दुतुषारहारधवला या शुभ्रवस्त्रावृताया
वीणावरदण्डमण्डितकरा या श्वेतपद्मासना।
या ब्रह्माच्युत शंकरप्रभृतिभि देवैः सदा वन्दिता
सा मां पातु सरस्वती भगवती निःशेषजाड्यापहा ॥1॥

जो विद्या की देवी भगवती सरस्वती कुन्द के
फूल, चंद्रमा, हिमराशि और मोती के हार की तरह
धवल वर्ण की हैं और जो श्वेत वस्त्र धारण करती हैं,
जिनके हाथ में वीणादण्ड शोभायमान है,
जिन्होंने श्वेत कमलों पर आसन ग्रहण किया
है तथा ब्रह्मा, विष्णु एवं शंकर आदि देवताओं
द्वारा जो सदा पूजित हैं, वही संपूर्ण जड़ता
और अज्ञान को दूर कर देने वाली
माँ सरस्वती हमारी रक्षा करें॥1॥

<u>Acknowledgment</u>

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 second Bit (Volume) of "Bits & Bytes".

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Prof. Bhasker J. Iyer

"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.

Prof. T. P. Chanpura

Dear Readers,

It gives me great pleasure to present you this second Bit (Volume 2) of July 2020.This is a platform for students as well as faculty members and other stake holders like industrialist, alumnae and other faculty members of peer institutes of electronics and communication engineering. At this juncture, I would like to thank all my faculty members those who have participated directly or indirectly in editing, proof reading and designing this Bit and implementing my idea and realizing thought in to reality with quite committed platform for technological, innovative, creative skills and forth coming development in field of electronics and communication as well as its diversification for enhancing lifelong learning and project management with team building skills.

I acknowledge the efforts put by my students' team of Bits & Bytes and faculty members of electronics and communication engineering department. Now onwards M. R. PANCHAL will coordinate the same with students and faculty team.

I acknowledge my sincere thanks to Industry advisory Mr Ashwin Ruparelia, CEO- Eurotech power Controls and   Mr Pratik Parmar,CEO- Crear Electronics for their continuous interaction with faculty members and EC students.

Keep it up!!!

Role of electronics and communication engineers in combat against COVID19

This question may be asked most of the Electronics and Communications Engineering Graduates during the studies or after the graduation due to this pandemic situation all around the world.

Electronics and Communication Engineering (ECE) graduates will play a very important role in providing electronics based solutions such as thermal detecting equipment ,diseased person detection, automatic sanitation system, wireless lift operating system, disease surveillance, integrating sensor system in a smartphone for early detection of disease symptoms, sensor-based sanitizer dispensing system, etc. thereby, application of electronics, integration of sensors, wireless connectivity, and remote operability, etc. are the key requirements for this pandemic (COVID 19) equipment.

On March 11, 2020, the World Health Organization announced the Coronavirus as a pandemic after that many countries have enforced lockdown to stop the spread of this contagious disease. According to a survey, conducted by IPC (Institute for Printed Circuits), all electronics manufacturers anticipate at least a five-week product shipment delay from suppliers due to the coronavirus epidemic. With these difficulties also, the engineers (ECE) have geared up their innovation activity to support corona warriors. (Doctors, Health workers, Administration staffs like Ministers, Police, etc.).

Artificial Intelligence (AI), the Internet of Things (IoT), and deep learning methods are being used to accurately analyze the data to predict and monitor the spread of the disease across countries, the survival chance of patients and take the pressure off frontline radiologists. There are also many molecular diagnostic platforms in determining if a patient has been infected. In the communication part, today, satellite technology provides high-bandwidth, multi-media patient information to aid shared clinical decision-making and early diagnosis. Remote visual and telephone consultations help in many surgeries minimizing the spread of germs. The link allows two-way real-time consultation enabling seamless patient care.

Some innovative electronic product for COVID 19 testing and treatment

Chai Open qPCR

Chai's Open qPCR device uses polymerase chain reaction (PCR) to rapidly test swabs from surfaces (e.g., door handles and elevator buttons) to see if the novel coronavirus is present. This open source hardware shared under an Apache 2.0 license uses a BeagleBone low-power Linux computer. Data from the Chai Open qPCR can enable public health, civic, and business leaders to make more informed decisions about cleaning, mitigation, facility closures, contract tracing, and testing.

Pocket PCR

Gaudi Labs' PocketPCR thermocycler is used to activate biological reactions by raising and lowering the temperature of a liquid in small test tubes. It can be powered with a simple USB power adapter, either tethered to a device or on its own, with preset parameters that don't require a computer or smartphone.

DHAMAN VENTILATOR

As Ahmedabad witnesses a spiraling number of COVID-19 positive cases and high death count, hospitals overloaded with patients were supplied a locally manufactured ventilator – Dhaman-1, made by a Rajkot-based company Jyoti CNC Automation. About a month after the ventilators were set up, it has been alleged that the ventilators are actually ambu-bags or artificial manual breathing devices.

New Technologies:

These new Technologies will become mainstream in nearest future hence one can make proper planning their career and prepare themselves as per the need of that field.

- 5G Technology
- Digital Debit
- Autonomous Driving
- Edge computing
- Human Augmentation
- Distributed Cloud
- AI Products
- Data-Driven Policing
- Reskilling

EXTENDED REALITY

XR is an emerging umbrella term for all the immersive technologies. The ones we already have today—augmented reality (AR), virtual reality (VR), and mixed reality (MR) plus those that are still to be created. All immersive technologies extend the reality we experience by either blending the virtual and "real" worlds or by creating a fully immersive experience. Recent research revealed that more than 60% of respondents believed XR will be mainstream in the next five years. To get a better picture of XR, let's review each of the existing technologies that exist today.

College News and Events

- Smt. Kokilaben R. Shukla retired on 31st March,2020.
- Schools and colleges has been closed for undefined period during Lockdown.
- Whole Teaching process is shifted on online platform due to COVID-19 pandemic.
- 2nd and 4th semester student got merit based promotion in GTU end semester exam.
- Online teaching on Microsoft teams has been started for 3rd and 5th semester students from 22nd June, 2020.

AWARDS AND ACHIEVEMENTS

- Last year student JANVI PARMAR got gold medal in GTU CONVOCATION 2020.
- Three SSIP projects are selected for POC:
    1. **SMART STICK FOR BLIND PERSON WITH NFC SUPPORT.**
       GROUP MEMBERS:
         - TAPARIYA HETAL
         - SHAH KANAK
         - JAIN SAUMYA
         GUIDED BY:
            M.R.PANCHAL
    2. **SMART INVENTORY MONITORING SYSTEM.**
       GROUP MEMBERS:
         - CHAUHAN ROSHNI
         - AWASTHI DIMPLE
         - JAGANI ISHIKA
         GUIDED BY:
            S.S.PATEL
    3. **AUTOMATIC CALL SYSTEM FOR GIRLS SAFETY.**

GROUP MEMBERS:
  - RANA ANSHU
  - BHAVSAR STUTI
  - ALVANI TANAAZFATEMA
GUIDED BY:
   G.D.AMIN

CO-CURRICULAR ACTIVITIES

- ISRO Visit for First year students.
- CREAR ELECTRONICS for 2nd and 3rd year students.
- One day hands on workshop at SIGMA ELECTRONICS for final year students.
- Webinars on "BASICS OF ANDROID" and "Augmented Reality vs. Virtual Reality".
- Project "SHODHYATRA" webinar for innovative ideas and brainstorming.

LOCKDOWN ACTIVITIES:

- COVID-19 awareness video made by 1st year students.
- Students have participated in online quiz as well as webinars.

Inspirational Stories:

Entrepreneurship among women has been a matter of recent concern. But with the change of time as well as cultural norms and increase in literacy, women are increasingly entering the field of entrepreneurship.

KHIMCHI KRINAKSHI, final year student of EC department decided to become an entrepreneur. She found "BEST BUDDIES BIRTHDAY PLANNER" a small startup idea that helps to plan Birthday celebration. Here are some short glimpse of her startup.

• "Myself Shruti Tenguriya. An ambitious person who always wants to serve the nation. As I was growing up I always saw my mother helping others and provide them proper guidance towards proper hygiene and importance of education in their life. She use educate the slum areas children and women by providing free tuitions, books and food. She use to take care of them and help them financially. As I was growing up I extended my help to my mother and we both started educating children by taking free tuition and providing proper guidance. My mother always inspired me to become a discipline

and selfless person. We are both working towards our goals to educate many children and provide them proper source of living. We wants to make a proper, save and clean surrounding for the future kids and we still working on it. We are working on the same goals since 9 years."

VISION

To carve a brighter prospect for the nation through excellence in technical education to foster skills, ethical values and environmental consciousness among girls 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 promote care for sustainability of environment and social responsibility.**

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