Bits & Bytes

EC NEWSLETTER

Ocean Of Career Opportunity in Electronics & Communication

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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

या कुन्देन्दुतुषारहारधवला या शुभ्रवस्त्रावृताया
वीणावरदण्डमण्डितकरा या श्वेतपद्मासना।
या ब्रह्माच्युत शंकरप्रभृतिभि र्देवैः 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 संपूरण जड़ता
और अज्ञान को दूर कर देने वाली
माँ सरस्वती हमारी रक्षा करें॥1॥

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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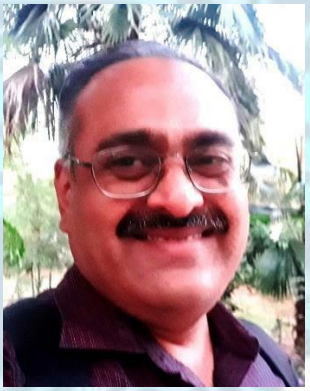
Message from Principal's Desk



Prof. 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.

Message from HOD's Desk

Prof. T. P. Chanpura

Dear Readers,

It gives me great pleasure to present you this third Bit (Volume 3) of December 2020.

Our students and faculty have shown remarkable dedication this year. Special appreciation to K.N. Chaudhari, M.R. Panchal, and our content writing team for their efforts in making Bits and Bytes informative and engaging.

The OBE approach is at the core of our curriculum, and we actively seek student, parent, alumni, and industry feedback to improve our teaching methods. Emerging fields such as cybersecurity in electronics, AI-powered chipsets, and bioelectronics are reshaping the world, and we encourage students to embrace these technologies.

To our graduates—your journey into the professional world is just beginning. Keep pushing the boundaries of knowledge and innovation.

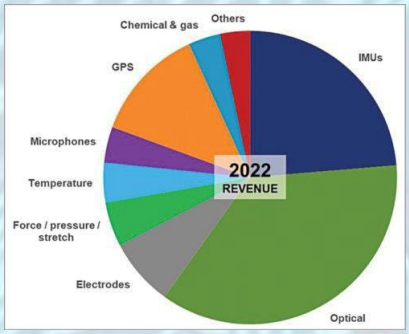
Keep it up!!!

Upcoming Sensor Technology

Wearable sensors

Source:
https://www.electronicsforu.com/technology-trends/tech-focus/latest-sensors-applications

These latest sensors include medical sensors, GPS, inertial measurement unit (IMU) and optical sensors. With modern techniques and miniature circuits, wearable sensors can now be deployed in digital health monitoring systems. Sensors are also integrated into various accessories such as cloths, wrist bands, eyeglasses, headphones and smart phones. An IDTechEx report forecasts optical, IMU and GPS sensors to dominate the sensors market in terms of revenue by 2022 (below figure: Wearable chart: Courtesy: www.idtechchex.com)



Wearable applications and IoTs are expected to drive double-digit growth in the global market for sensors. Due to decrease in manufacturing costs and low power consumption of sensors, most traditional wired connections will be replaced with wireless sensors and integrated into wireless network in the future.

Printed Sensor

Sensors printed on flexible substrates are becoming popular. The next generation of printed sensors will enable applications ranging from human-machine interfaces to environmental sensing. The IDTechEx report predicts the market for fully printed sensors to reach $7.6 billion by 2027.

Printed sensors may have a very simple structure with only a few electrodes, while others are much more complex requiring deposition of multiple layers. What they have in common is the capability to be manufactured on plastic substrates, which offer advantages in terms of mechanical flexibility, thinness and weight reduction.

New Technologies: Li-Fi The future of Internet

Imagine a time when each of the light bulbs in your house is a source of Internet. Imagine a scenario where, standing under a light bulb for 1 minute, you would have downloaded around 5 movies in HD. Sounds like a dream, right? But thanks to Li-Fi technology, this dream will soon turn into reality. With this new technology, we can reimagine the role light plays in the universe.

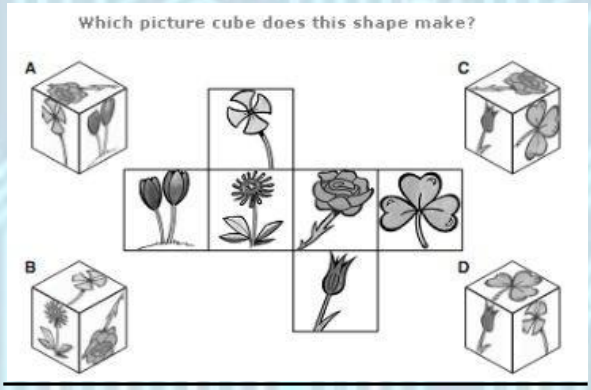
Li-Fi stands for Light Fidelity and is a Visible Light Communications (VLC) system which uses light to send wireless data embedded in its beam. A Li-Fi enabled device converts the beam of light into an electrical signal. The signal is then converted back into data. The term was coined by German physicist Harald Haas during a TED Talk in 2011. He envisioned the idea of using light bulbs as wireless

routers.

LiFi bulbs are outfitted with a chip that modulates the light imperceptibly for optical data transmission. LiFi data is transmitted by the household LED bulbs and received by photoreceptors. If implemented meticulously, Li-Fi systems can reach transmission speeds which are upto 100 times faster (more than 1 Gigabit per second) than the current traditional Wi-Fi which works on radio wave.

Li-Fi which can be the future of data communication appears to be a fast and cheap optical version of Wi-Fi. It uses visible light of electromagnetic spectrum between 400 THz and 800 THz as optical carrier for data transmission and illumination.

BRAIN STORMING:



From the above picture, which picture cube does this shape make?

A. A **B. B**
C. C **D. D**

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 for 1st year students and new term also.
- 1st and 3rd semester student got merit based promotion in GTU end semester exam.
- Online teaching on Microsoft teams has been started for 1st, 4th and 6th semester students from 15th October, 2020 and December 2020.

PROFFESIONAL DEVELOPMENT

1) Ms. K N. CHAUDHARI have successfully completed 12 weeks (equivalent to Two week STTP) NPTEL ONLINE certification course on "Entrepreneurship" during Jan-April 2020 conducted by IIT, Madras.

2) Ms. K N. CHAUDHARI have successfully completed 8 weeks NPTEL ONLINE certification course which is approved for faculty development program by AICTE on "Enhancing soft skills and personality" during Jan-April 2020 conducted by IIT, Kanpur.

3) Mr. M R. PANCHAL, NPTEL weeks ONLINE training on " "

4) Mr. G M. MAKWANA, NPTEL ____ weeks ONLINE training on " "

AWARDS AND ACHIEVEMENTS

- Three SSIP projects are selected for POC:

CO-CURRICULAR ACTIVITIES

LOCKDOWN ACTIVITIES:

Inspirational Stories:

Second year student Miss. Purva Sapariya was participated in the event" purani cheese dejao nai cheese lejao " in which some old stuff were collected from those who doesn't need it and then this collected things were distributed among the NEEDY people.

Moreover, Miss. Purva Sapariya was participated in the event of BLOOD COLLECTION for the thalassemia children in pandemic. This event was organized in October 2020 by jeevan charitable trust office at sumel-6 at dudheshwar for Indian Red Cross society.

ONLY YOUR TIME ACTIVITY:

One of the talented student Aneri Shrivastav of 4th semester from EC department have wrote beautiful poem in only her time.

दुख

दुख इस बात का है कि
हम इस दुनिया में जीते है जहां हर दिन कोई लड़की की बलि चढ़ती है।
दुख इस बात का है कि
हम इस दुनिया में जीते हैं जहां लोग प्यार के लिए जीते नहीं मर ते है।
दुख इस बात का है कि
हम इस दुनिया में जीते हैं जहां कभी कभार कुछ घंटो में कोई बेटा,भाई,पती या पापा शरहद पर शहीद होते है ।
दुख इस बात का है कि
हम इस दुनिया में जीते हैं जहां
कई बच्चे शाला की जगा सड़कों पर भीख मांगते हैं।
दुख इस बात का है कि
यह पर जो बात इलेक्शन के समय नेता के बाते सब जगा की सड़कों में दिख ती है ।
दुख इस बात का है कि
हम इस दुनिया में जीते है जहां पर कुछ पल की खुशियों के लिए हजारों फूल कुर्बान हो जाते हैं।
दुख इस बात का है कि
हम इस दुनिया में जीते है जहां पर जो मा - बाप अपने बच्चो को उंगली पकड़ के चल ना सीखा ते है वहीं बच्चे वहीं मा - बाप को वृद्धआश्रम चोद देते है।

:-Aneri.k.shrivastav

The ART and The Artist :

Apart from the daily routine life some of the faculties are creative in their own way. One of the Faculty from EC , Ms Krishna N. Chaudhari is spending her time for Doodle and different art. She believes this activity is actually a stress reliever. Have a look of her art work.
Art brings Joy and Happiness.


Krishna...

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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