

June 2019
Issue-1

NewsLetter

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING



GL BAJAJ
Institute of Technology & Management

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Congratulations



NBA ACCREDITED
in the Departments

EEE

ECE

IT

UPTO 30-06-2022

From 15 Feb 2019 to 17 Feb 2019 NBA visit was conducted and the Department of Electronics and Communication Engineering got accredited for three years till June 2022.



Guest Lecture on Microprocessors 8085 & 8086

On 5th April 2019 Value Added Course session of “Microprocessors 8085 & 8086” by Mrs. Shylaja V Karatangi and Dr. Amrita Rai, was arranged in the department of Electronics and Communication for the BCA students of GL Bajaj Institute of Technology and Management.

Session includes with Evolution of Microprocessor and its applications, interpretation of Architecture and more importance given for practical's to explore the how basic microprocessor 8085 works and Assembly language coding.

This value added course makes the students learn more practically that is Outcome Practical Education about the subject which is their in course curriculum activity.



Industrial Visit to Uniconverge Technologies Pvt.Ltd.

On March 27th ,2019 the department of ECE of G.L. Bajaj Institute of Technology & Management, organised an industrial visit for 3rd year students to industry named Uniconverge Technologies Pvt.Ltd.

The fast adoption of emerging technologies is converging to provide solutions to domains that were never envisioned earlier. Cloud, Mobility, Analytics and Embedded Technologies have brought to the forefront, a highly connected and scalable landscape. Such an ecosystem is enabling applications that revolutionize human life very rapidly by increasing efficiency and availability of data and systems. Uniconverge Technologies Pvt. Ltd. Vision is to offer to the organizations across the world, a wide gamut of services and solution in IOT domain.





Technical Events - Project Open Day



Project Open Day by Department of Electronics and Communication Engineering was organized on 25 May 2019. Invited experts for project open day were

Dr. Satya Kesh Dubey, Scientist, CSIR-National Physical Laboratory.

Mr. Pratik Chaturvedi, Scientist D, Defence Research and Development Organisation (DRDO). All the projects done by final year students were displayed and their technical details were explained by the students.





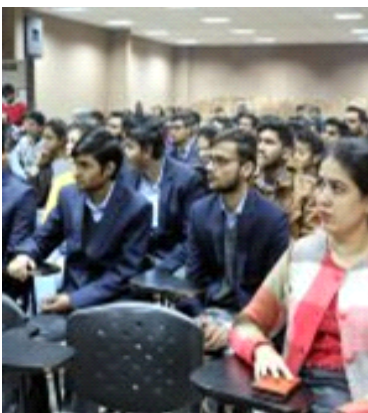
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Innovation Marathon

In order to showcase the government programs, industrial mentorship, financial support, handholding to innovation, G.L. Bajaj Institute of Technology and Management organized a landmark event titled “Innovation Marathon – Greater Noida” on 7th January 2019. It was a part of the nationwide campaign managed by Inventivepreneur Foundation. The event was attended by a gathering of 250+ youth participants and coordinated by Dr. Amit Sehgal of Department of Electronics and Communication Engineering. This one day program gave access to investors with unprecedented innovations, insights and acceleration opportunities to connect and collaborate with Industry Leaders and Government officials at the central and state levels. Program was inaugurated by Shri Santosh Ranjan Ji, Vice President – Bhartiya Janata Party Yuva Morcha and witnessed Dr. Ritika Yadav – Chairperson, Inventivepreneur Foundation, Dr. Poonam Sinha, Director, NIESBUD, Dr. Rajeev Agrawal, Director, GL Bajaj Institute of Technology and Management, Pankaj Dubey, MD, Polaris India, Raj Kapoor, MD, AIBTM. More than 50 ideas presented and evaluated for support at various levels including capital funding.

Innovation Marathon” is a flagship initiative of Inventivepreneur Foundation launched on June 25, 2018 in New Delhi by Hon“ble Cabinet Minister Shri Suresh Prabhu Ji, Ministry of Commerce and Industry with VISION2022 this initiative will add half million new business in country and this movement will create 40 Million new job opportunities in India.





Alumni Interaction

On 18.04.2019 an alumni interaction session was conducted by the Department of Electronics & Communication Engineering. During this session Ex-student of GLBITM Mr. Jatin Pandey (2011 Batch) was invited to interact with 6th semester students. During this session he discussed about -

- CCNA course
- Scope of CCNA course and benefits in incoming future
- Hierarchy and level of CCNA
- Starting package, increment in package as per time and experience
- How to get certification of CCNA

Complete session was very interactive and informative.



New Year Celebration-2019

The department of Electronics and Communication Engineering celebrated the New Year with fun and frolic on 1st Jan 2019. Dr. Satyendra Sharma (HOD) wished everyone a successful 2019. He also motivated all the faculties to bring the best out of them for their personal as well professional life.



Farewell Party ECE 2019

Department of Electronics and Communication Engineering organized a farewell party “Hasta La Vista” for the passing out Batch 2015-19 on the 3rd of June, 2019. The event was filled with the duo of fun and formalities. At once it was a celebration for promoting the seniors students off into a new world filled with responsibilities and on the same time a lot of excitement and delight was shared during the event.

The occasion was adorned with beautiful performances of 3rd students. At Last Mr. and Ms. Farewell titles were given to Mr. Himanshu Kumar Singh and Ms. Karishma Rawat.





Student Corner

Neuralink's Brain Reading Threads

Elon Musk's Neuralink Company has been in existence since 2016 and was first publicly reported in 2017. Since then the company had been working on a secretive technology which was unveiled by Musk on July 16, 2019.

What are Neuralink's Brain reading threads?

The main aim of the company is to develop a brain-machine interface where signals from the brain are taken up using thin flexible threads embedded near the neurones of the brain and can be used to control our mobile phones or computers directly.

These threads are basically electrodes which detect the electric field produced after an action potential, allowing the recording of the information represented by a neurone.

The biggest advancement is the thin threads, which are not harmful to the human brain as compared to the other materials currently used in the brain-machine interfaces.

The threads have a width of 4-6 micrometre that is 1/10th of the cross sectional area of a human hair and are directly implanted in the brain with the help of a robot.

The Robot uses a needle of about 24 microns in diameter to precisely and successfully place the electrodes in position without causing any harm to the blood vessels.

In future the company is aiming at using laser beam to get through the skull rather than drilling holes.

These threads are finally connected to an External Pod having Bluetooth connectivity which will help us to connect and control our devices wirelessly using our brains.

Elon aims at a "Symbiotic Relation between the Human brain and AI" which might sound weird as quoted by him.

The ultimate goal of the interface is to improve the bandwidth between the humans and technology. So that we are able to use our technology more efficiently and effectively. Furthermore, it can help paralysed people to communicate and do things by just using their brains. Elon Musk also revealed that the experiment was carried out on a monkey which resulted in the monkey controlling a computer.

The company is hoping to get an approval for human trials, the next year. This technology is going to be a slow progress but would be visible to the public and hopefully will be very helpful for the mankind in the future.

Pratyush Tiwari
B.Tech (IInd year)
Department of ECE



Student Corner

Making 5G Happen - Understanding the needs for 5G and its underlying technologies

The buzzword of the masses, 5G, is probably going to be one of the biggest transformational technologies of this decade. It beats like of RPA, Blockchain, ZB – era and is right up there with AI at the top. Most of the wireless connections are made possible by high – speed interconnects within data centres. However in practicality, the moment you have to rely on wireless connection, it slows down to snail's pace. That's set to change with the deployment of 5G, we can hope to avoid any bottlenecks.

5G: The Working

Instead of 2 bands, 5G utilizes 3 bands mainly mmWave, that's greater than 6 Ghz then there's the sub – 6 Ghz band and lastly you have the sub-1 Ghz band. Within the sub bands are low band and mid band spectrum. The peak bandwidth will be 1 Gbps.

Key 5G Benefits

The following are industrial uses of 5G:

eMBB – eMBB or enhanced mobile broadband will create general improvements in all cellular characteristics.

mMTC – An IoT adoption, mMTC or Massive Machine Type Communication is a machine-centric communication just like device-centric communication.

URLLC – It stands for Ultra Reliable Low Latency Communications, the future standard for device communication, because the packet loss will be 1 in 100,000 packets.

Problems related to 5G

Radio waves frequencies have an inverse relation with penetration. So the penetration of 5G will be much less than other generations. Moreover if IoT boosts applications in automotive, health care, and home security, it can create risk of breaches of data and control in all segments. There are further health related issues due to use of such high frequency signals.

Conclusion

The numerous ways in which we stand to benefit from bringing 5G into action, but in a country like India, where we are not even to utilize 4G properly, the concept becomes totally meaningless. 5G might take 2 more to be implemented, but right now, there doesn't seem to be any problems looking at the healthy competition between all service providers to prove their worth.

Yuvraj Singh
B.Tech (IInd year)
Department of ECE



Student Corner

Technology Behind Chandrayaan-2

The lunar mission, which was originally planned for July 15, 2019, was delayed when a 'technical snag' was discovered just before the final countdown. The mission was launched from the second launch pad at Satish Dhawan Space Centre on 22 July 2019 at 2.43 PM IST. Chandrayaan-2 reached its orbit with the help of GSLV MK-III, which is capable of carrying 4-tonne class of satellites to the Geosynchronous Transfer Orbit (GTO). The payload includes terrain mapping cameras to prepare a 3D map of the intended area, while a collimated large array soft x-ray spectrometer will map the majority of major rock-forming elements. An orbiter high resolution camera will capture high-resolution images of the landing site and an imaging infrared spectrometer will identify minerals along with signatures of hydroxyl (OH) and water (H₂O) molecules in polar regions.

Naina Rajput
B.Tech (IInd year)
Department of ECE

Editorial Board

- Convenor** : Dr. Satyendra Sharma (HOD)
- Editor** : Dr. Amit Seghal Associate Professor
Dr. Dinesh Singh - Associate Professor
Dr. Shilpa Choudhary - Associate Professor
- Student Editor** : Tanya Sharma - II year
Shreya Dubey - II year



VISION

To become a department of repute and prepare globally competent and socially responsible professionals with holistic knowledge and technical skills.

MISSION

- ✓ To provide a supportive environment for effective knowledge transfer and nurturing ideas.
- ✓ To equip students with technical and leadership skills, and abilities to face the global challenges.
- ✓ To create an environment conducive for research and development with continuous involvement of industry.
- ✓ To inculcate professional and moral values in the students.

Program Educational objectives (PEO)

On completion of this course, our graduates will be able to

1. Exhibit multi-disciplinary technical and leadership skills for better employability, higher education and entrepreneurship.
2. Possess strong knowledge in the field of Electronics and Communication Engineering to develop solutions for real life problems.
3. Undertake professional responsibilities through strong team-work, communication skills and life-long learning.
4. Become socially responsible professionals with moral values and ethics.

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