



VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

TECHINNOVATION

NEWS LETTER

JAN - MAR, 2023

DEPT. OF ECE

VOLUME NO.: 27

ECE Department

Electronics and Communication engineering is a discipline which uses the scientific knowledge of the behaviour and effects of electrons to develop components, devices, systems, or equipment that uses electricity as part of its driving force. This engineering field encompasses many subfields like signal processing, semiconductor chip design, telecommunication, data communication networks, satellite and radar link setup, embedded systems, robotics and many more.

Electronics and Communication engineering department transforms our day-to-day lives through a multitude of innovative technologies and products. The ECE department is intended to expose students to the unlimited opportunities for innovation in this exciting field, and to the methodologies and tools used by ECE engineers for the exploration and design of new technologies and products.

The applications of Electronics & Communication engineering is an endless list with a lot of scope in each and every subfield. It is a versatile branch that opens path for core electronics & communication jobs. Besides the numerous jobs in core field, the IT sector also welcomes an ECE engineer with open arms.

As compared to other branches, there are more interdisciplinary specializations in higher studies for ECE students like Embedded Systems, VLSI, Wireless communication, Signal Processing. Therefore, ECE students have a wider choice.

Department of Electronics and Communication Engineering was started since the inception of Vignan's Institute of Management and Technology for Women during 2008 with an initial intake of 90. The strength was enhanced to 120 during 2010. The Department had added Post graduate programme in VLSI during the year 2011 and Embedded Systems during 2014 with an intake of 18 each.

The Department has state-of-art laboratories equipped with advanced and well-maintained equipment, continuously updated application software packages, more than adequate computing systems with 24x7, 40 MBPS internet facility. All faculties are having a minimum teaching experience of 4 years. Seminars, Guest Lectures, Workshops, and Technical Symposia are conducted in the department to keep faculty and students updated with the latest developments in various technologies.

The Department is accredited by the National Board of Accreditation (NBA) has been accredited by National Board of Accreditation (NBA) successively two times i.e. in 2019 and 2022, which is valid up to 2025.

ECE students of the institution are well placed in different companies with different packages.



Department Vision

To transform the students into technologically competent professionals, with abilities to address the societal challenges of the time through innovative technical practices in electronics & communication engineering.

Department Mission

- M1: To foster inquisitive-driven advanced knowledge building among students for reinforcing the domain knowledge, develop capabilities, skills and solve complex engineering problems.
- M2: To prepare industry-ready graduates for global Electronics as well as communication-based engineering companies by conducting training programs, workshops and industry visits.
- M3: To build entrepreneurship and leadership qualities, research aptitude among students for the contribution of economic and technological development in cutting edge technologies in the national and as well as in the global arena.

Program Educational Objectives:

- PEO1: To develop the student's ability on technical concepts to design, simulate, and synthesize various electronic and communication circuits & systems for their research advancements.
- PEO2: To impart analytical skills and to prepare the students to excel in applying state-of-the-art hardware and software tools to solve complex engineering problems for R&D, Industry, and societal requirements.
- PEO3: To prepare the students to work in teams, take independent decisions, and integrate engineering issues for a successful career in a multi-disciplinary environment.
- PEO4: To promote entrepreneurship among the students to become successful entrepreneurs with professional ethics.

Program Specific Outcomes:

A graduate of the Electronics and Communication Engineering Program will be able to

- PSO1: **Professional Skills Ability:** Identify, design electronics & communication circuits and conduct experiments with electronics & communication systems, analyze and interpret data, formulate and solve electronics & communication engineering problems.
- PSO2: **Industrial Skills Ability:** Design digital and analog systems, algorithms, fire ware, modern engineering tools, software, etc. as per needs and specifications and work in laboratory and multidisciplinary tasks.
- PSO3: **Ethical and Social Responsibility:** Communicate effectively in both verbal and written form, will have knowledge of professional and ethical responsibilities and will show an understanding of the impact of engineering solutions on the society, and also will be aware of contemporary issues.

EDITORIAL BOARD

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HOD'S MESSAGE

Mr. P. Harikrishna,
Associate Professor &
HEAD OF THE DEPARTMENT,
DEPARTMENT OF ELECTRONICS
AND COMMUNICATION
ENGINEERING.

It gives me immense pleasure to present the Jan–Mar 2023 issue of our department newsletter, **TECHINNOVATION**. This newsletter reflects the dedication and achievements of our students and faculty, celebrating academic excellence, innovation, and creativity. I congratulate everyone involved in maintaining the high standards of the department and wish our students continued success in their professional journey.

Faculty article

A Digital Renaissance: Reviving Art and Culture Through Technology

By, Masthan Basha, Assistant Professor

A Digital Renaissance: Reviving Art and Culture Through Technology

In today's era, technology has become the new canvas for creativity, giving rise to a Digital Renaissance where art, culture, and innovation beautifully converge. Modern artists use digital tools, AI, and design software to recreate classical styles while adding futuristic flair. This blend of creativity and code allows art to evolve while honoring tradition.

Virtual and augmented reality have transformed how people experience art — letting audiences step into 3D exhibitions, interact with masterpieces, and connect emotionally with creations beyond museum walls. Similarly, in music, artists now fuse classical melodies with digital beats, creating fresh sounds that bridge generations.

Technology is also preserving heritage, with virtual museums and online platforms making culture accessible worldwide. This digital revival doesn't just protect history — it inspires new expressions, ensuring that creativity continues to thrive in the modern age.

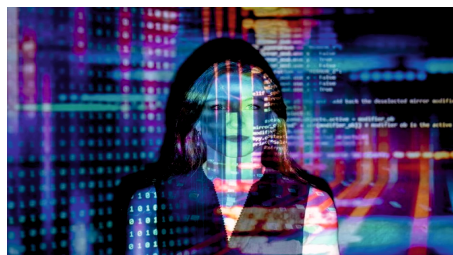
Student article

Navigating the Future with Vibe Engineering

By, Divya Sri Ild year

Navigating the Future with Vibe Engineering

C. Shivani, III Year, ECE.



Vibe Engineering marks a new era in software development where Artificial Intelligence (AI) and emotional intelligence work hand in hand. Unlike traditional coding, it focuses on creating software that not only functions efficiently but also connects emotionally with users.

By integrating AI throughout the development process—from design to deployment—Vibe Engineering enhances collaboration, speeds up coding, and ensures emotionally engaging user experiences. Tools like CodeRabbit assist developers with

COLLEGE EVENT

Vignan's Institute of Management celebrated its Graduation Day on 7th January with great enthusiasm and pride. The event marked a significant milestone in the academic journey of graduating students, recognizing their achievements and preparing them for future endeavors.

Event Highlights

- The ceremony began with a formal welcome address by the faculty and management.
- Graduates, dressed in traditional convocation attire, participated in the procession, symbolizing the transition from students to professionals.
- A cake-cutting ceremony was organized as part of the celebrations, adding a festive touch to the occasion.
- Inspirational speeches were delivered by dignitaries, emphasizing the importance of

lifelong learning, professional ethics, and contribution to society.

- Awards and certificates were distributed to outstanding students for academic excellence and extracurricular achievements.

Atmosphere

The event was filled with joy and pride as students, faculty, and families came together to celebrate. The backdrop featuring the graduation cap and institute emblem highlighted the significance of the day. Smiles, laughter, and heartfelt moments created a memorable atmosphere for all attendees.

Significance

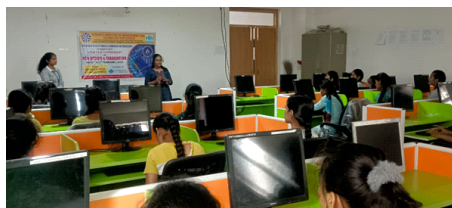
Graduation Day is not only a celebration of academic success but also a rite of passage into the professional world. The event reinforced the institute's commitment to nurturing talent, fostering innovation, and preparing students to meet global challenges.



EVENTS AT DEPARTMENT

PCB DESIGN AND FABRICATION WORKSHOP

The Department of Electronics and Communication Engineering at VMTW organized a two-day workshop on "PCB Design and Fabrication" for II-year ECE students on 10th & 11th February 2023. The workshop was conducted in collaboration with Armtronics Lab, aiming to provide students with hands-on practical knowledge in printed circuit board (PCB) design, layout, and fabrication processes.



Resource Person

- Mr. Arjun Modi, Senior Engineer, Armtronics Lab, served as the chief resource person.
- He shared his expertise in PCB design tools, fabrication techniques, and industry practices, ensuring students gained exposure to real-world applications.

Coordinators

- Mrs. G. Indira Priyadarshini, Associate Professor
- Mr. G. Ganesh Reddy, Assistant Professor

Both coordinators ensured smooth execution of the workshop, guiding students throughout the sessions.



Workshop Highlights

- Day 1 (10th February 2023):
 - o Introduction to PCB fundamentals and design principles.
 - o Training on schematic capture and layout design using industry-standard software.
 - o Demonstrations on component

placement, routing, and design rule checks.

- Day 2 (11th February 2023):
 - o Practical exposure to PCB fabrication processes.
 - o Hands-on session on etching, drilling, and soldering techniques.
 - o Testing and validation of fabricated PCBs.

Outcomes

- Students gained practical skills in PCB design and fabrication.
- The workshop bridged the gap between theoretical knowledge and industrial practice.
- Participants expressed enthusiasm and confidence in applying PCB concepts to academic projects.



Conclusion

The workshop was a resounding success, equipping II-year ECE students with essential technical skills. The collaboration with Armtronics Lab provided valuable industry exposure, aligning with VMTW's vision of fostering innovation and practical learning in engineering education.



INTERNATIONAL WOMEN'S DAY CELEBRATIONS

Vignan's Institute of Management and Technology for Women celebrated International Women's Day on 8th March 2023 with great enthusiasm and dignity. The event was organized to honor women's contributions in all spheres of life and to promote the themes of equity, peace, unity, and innovation for gender equality.

Event Highlights

- The stage was beautifully decorated with floral arrangements and banners reflecting the day's themes.
- The celebrations included cultural performances, such as classical dance and music, showcasing the talent and creativity of students.
- Distinguished guests and faculty members addressed the gathering, emphasizing the importance of women's empowerment, equity, and the role of technology in advancing gender equality.
- Multiple themes were highlighted during the program:
 - o Embrace Equity
 - o Peace and Unity
 - o DigitALL: Innovation and Technology for Gender Equality

Participation

- The event witnessed active participation from students, faculty, and dignitaries.
- Students engaged in cultural activities, and discussions that reflected the spirit of International Women's Day.
- Faculty members and guests shared inspiring messages, motivating students to embrace leadership and innovation.

Significance

The celebration reinforced the institute's commitment to fostering an environment of respect, inclusivity, and empowerment for women. It highlighted the importance of equity in education and professional spaces, while also encouraging students to leverage technology for social change.

Conclusion

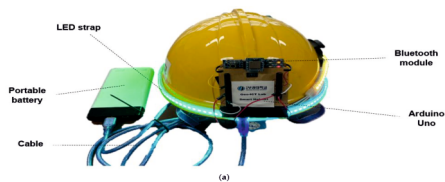
The International Women's Day celebrations at VMTW were a grand success, combining cultural vibrancy with meaningful discussions on equity and empowerment. The event left a lasting impact on students and faculty, inspiring them to continue working toward gender equality and innovation in all fields.



STUDENT PROJECTS

IoT Based Smart Helmet for Underground Mines

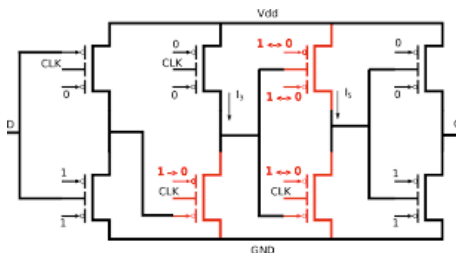
Students: B. Vedakshari, Alagala Shivani, Challamalla Kaveri
Guide: Mrs. D. Shirisha



This project focuses on improving the safety of miners working in hazardous underground environments. The IoT-based Smart Helmet is designed to monitor environmental conditions such as gas levels, temperature, and humidity in real time. The system can send alerts in case of dangerous gas leakage or unsafe conditions, ensuring immediate preventive action. By integrating sensors with wireless communication technology, the project enhances worker safety and demonstrates the practical application of IoT in industrial environments.

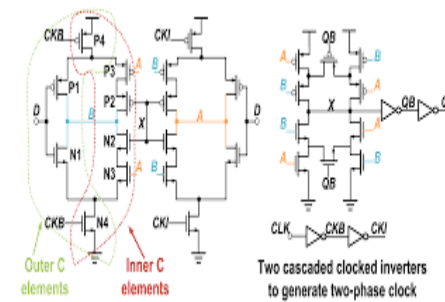
A Low-Power True Single Phase Clocked (TSPC) Full-Adder

Students: Ashwitha Burla, Machani Manasa, Gannoju Ojasvi
Guide: Mr. J. Sunil Kumar



The project presents a low-power TSPC full-adder circuit aimed at reducing power consumption in digital systems. The design focuses on optimizing speed and minimizing transistor count while maintaining reliability. This work is highly relevant for low-power VLSI applications and portable electronic devices. The proposed full-adder design contributes to efficient

arithmetic circuit implementation in modern integrated circuits.

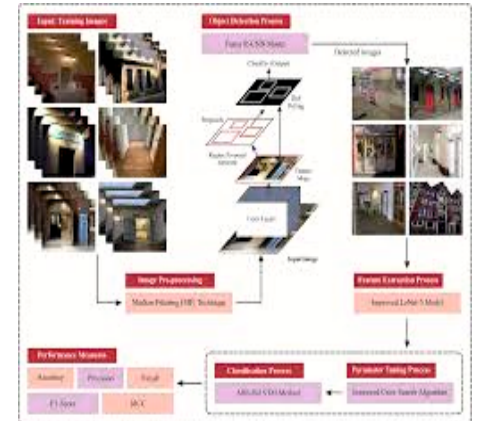


CNN-Based Object Recognition and Tracking System for Visually Impaired People

Students: Konda Alekhya, Sugguna Likhita, Bakaram Sravanthi, Borra Divya Sree
Guide: Dr. Vijaykumar R. Urkude

This project utilizes Convolutional

Neural Networks (CNN) to recognize and track objects in real time, assisting visually impaired individuals in navigating their surroundings. The system detects obstacles and provides audio feedback, enabling safer mobility. By combining machine learning and embedded systems, the project offers a socially impactful solution that promotes independence



SANKRANTHI SAMBARALU

On 10th January 2023, the management, faculty, and students of VMTW celebrated "Sankranti Sambaralu" with great enthusiasm on the college premises. The festival of Sankranti, also known as Makara Sankranti, is one of the most significant harvest festivals in India, symbolizing gratitude to nature and heralding the arrival of spring. In Telangana, the festival is celebrated for three days—Bhogi, Sankranti, and Kanuma—each carrying its own cultural and spiritual importance.



CAMPUS RECRUITMENT

VIGNAN'S
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(Sponsored by Lane Educational Society)
Kondapur (V), Ghatkesar (M), Medchal Malkajgiri Dist. - 501301
EMPPOWERING WOMEN

Congratulations!

 SANYAS S 20UP5A015 - ECE	 ADEPU SWADHA DESHA 20UP5A015 - ECE	 ARCHITHA GONALU 20UP5A015 - ECE	 DHIVANI SWETHA 20UP5A015 - ECE	 DELANI HEMALATHA 20UP5A015 - ECE
 EDHALA BHAVANYA 20UP5A015 - ECE	 ELUKA ADITHYANA 20UP5A015 - ECE	 SREELAM SWETHA 20UP5A015 - ECE	 SUNDARI DIVYA 20UP5A015 - ECE	 DHIVANI SWETHA 20UP5A015 - ECE
 VIDYA POORNA 20UP5A015 - ECE	 KESHAVI DIVYA 20UP5A015 - ECE	 SANTOSH 20UP5A015 - ECE	 KETHINENI SWETHA 20UP5A015 - ECE	 NETHIYA ANURADHA 20UP5A015 - ECE

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Congratulations!



ODNALA ARCHITHA
21UP5A0415 - ECE

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Program Outcomes (Adapted from NBA)

Engineering Graduates will be able to:

PO1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2: Problem Analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3: Design/Development of Solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4: Conduct Investigations of Complex Problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5: Modern Tool Usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO6: The Engineer and Society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7: Environment and Sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11: Project Management and Finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12: Life-long Learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.