



VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

TECHINNOVATION

NEWS LETTER

OCT - DEC, 2023

DEPT. OF ECE

VOLUME NO.: 30

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 Oct–Dec 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.

EVENTS AT DEPARTMENT

Grace in Motion: The Beauty of Classical Dance

Dance is not just a form of movement — it is a language of the soul. Among the many art forms that define India's cultural heritage, Classical Dance stands out as a timeless expression of tradition, devotion, and storytelling.

The Rhythm of Tradition

India is home to diverse classical dance forms such as Bharatanatyam, Kuchipudi, Kathak, Odissi, Mohiniyattam, Manipuri, and Kathakali. Each dance form carries centuries of history, expressing emotions (bhava), rhythm (tala), and storytelling (abhinaya). The movements, gestures, and expressions together create a spiritual connection between the performer and the audience.

Dance in College Life

Our college has always encouraged students to preserve and promote India's cultural roots. During cultural fests and annual days, classical dance performances captivate the audience with elegance and grace. Many students from the ECE department have showcased their talents in Bharatanatyam and Kuchipudi, proving

that engineers too can be artists at heart!

The Art Beyond Performance

Classical dance teaches more than just steps — it teaches discipline, patience, and focus. The precision in movement, synchronization with music, and dedication to practice mirror the qualities of a true learner and innovator. It reminds us that art and science are not separate but complementary expressions of creativity.

“When words fail, dance speaks — and classical dance speaks the language of the divine.”



In our college, cultural events give students a stage to celebrate this timeless art. Each performance, marked by elegant gestures and expressive movements, reminds us that art and education go hand in hand. Classical dance not only entertains but also inspires focus, patience, and creativity — qualities every engineer and artist share alike.

Bathukamma: Blossoms of Joy and Togetherness

Bathukamma, the vibrant floral festival of Telangana, brings color, culture, and community spirit to our college every year. The word Bathukamma means “Goddess of Life,” and the festival celebrates the beauty of nature and the power of womanhood.

A Festival in Full Bloom

During the celebration, students come together to create beautiful flower stacks using marigolds, chrysanthemums, and other local blossoms arranged in circular layers. The campus turns into a garden of colors as everyone sings traditional songs and dances gracefully around the Bathukamma, filling the air with festive cheer.

Culture Meets Campus

Our college's Bathukamma celebration is more than a cultural event — it's a reminder of our roots. Students dressed in traditional attire bring alive the Telangana spirit, blending joy with tradition. The event fosters unity among departments and showcases how tradition can flourish even in a modern academic environment.

Celebrating Womanhood and Nature

Bathukamma symbolizes respect for women and gratitude toward nature. It teaches values of teamwork, creativity, and cultural pride — qualities that reflect the spirit of our college community.

“Bathukamma is not just a festival of flowers, but a celebration of life, culture, and togetherness.”



Work Shop On

“ A Journey to IOT Applications using Arduino' ”

Department of Electronics and Communication Engineering conducted Workshop on – “A Journey into Arduino and IoT Applications”, on 22nd and 23rd Dec 2023 for students.
Speaker: Mr. Ganesh Reddy, Assistant Professor, ECE Dept, VMTW, Hyderabad. Telangana

A total of 55 members participated in the workshop. The coordinators for the workshop were Mrs. G. Indira Priyadarshini. Associate Professor, ECE Dept, VMTW.

Date & Time: The workshop was conducted on 22nd and 23rd Dec 2023 from 09:00 AM–3:30 PM

We would like to thank our honorable Chairman Sri Dr. L Rathaiah Garu, CEO Sri B. Shravan, Principal Dr. A. Apparao Naidu and Mr. P. Harikrishna, HOD of ECE for their support for successful completion of workshop.

All the participants felt very happy for attending the program and most of them given excellent feedback.

To fulfil the industry goals and requirements, the Department of Electronics and Communication Engineering (ECE) in association with IETE conducted a two-day workshop on “A Journey into Arduino and IoT Applications” The workshop started with an introductory and interactive talk on “IOT”.

Over the past few years, IoT has become one of the most important technologies of the 21st century. Now that we can connect everyday objects—kitchen appliances, cars, thermostats, baby monitors—to the internet via embedded devices, seamless communication is possible between people, processes, and things.

By means of low-cost computing, the cloud, big data, analytics, and mobile technologies, physical things can share and collect data with minimal human intervention. In this hyperconnected world, digital systems can record, monitor, and adjust each interaction between connected things. The physical world meets the digital world—and they cooperate.

The aim of workshop is to discuss real life use cases on IoT application and make the session really interactive by providing an opportunity to suggest a solution to real life scenario.

The main headlights of the workshop are given below:

1. Introduction to Embedded System
2. Introduction to Arduino
3. Introduction to Pin Description
4. Explain Program environmental set up
5. Explain Online Simulation tool for Arduino

6. Examples with Connection and coding part.

- i). LED
- ii). Button with LED
- iii). LCD
- iv). 7-Segment Display
- v). Motor Driver Concept with Controlling
- vi). Relay
- vii). DHT11 Concept with code.
- viii). LDR Sensor
- ix). Servo Motor Concept with example code
- x). Serial Communication Concept (Transmitting And Receiving data between Arduino and Laptop/Computer)
- xi). how to use analog and digital pin configuration for Embedded Projects. At valedictory ceremony, the participants were awarded the certificates.



“Circuit Craft: A Journey to IOT Applications using Arduino”

Department of Electronics and Communication Engineering conducted Workshop on – “Circuit Craft: A Journey to IOT Applications using Arduino”, on 20th

and 21st Nov 2023 for students.

Speaker: Mr. Ganesh Reddy, Assistant Professor, ECE Dept, VMTW, Hyderabad. Telangana

A total of 55 members participated in the workshop. The coordinators for the workshop were Mrs. G. Indira Priyadarshini. Associate Professor, ECE Dept, VMTW.

Date & Time: The workshop was conducted on 20th and 21st Nov 2023 from 09:00 AM–3:30 PM

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By means of low-cost computing, the cloud, big data, analytics, and mobile technologies, physical things can share and collect data with minimal human intervention. In this hyperconnected world,

digital systems can record, monitor, and adjust each interaction between connected things. The physical world meets the digital world—and they cooperate.

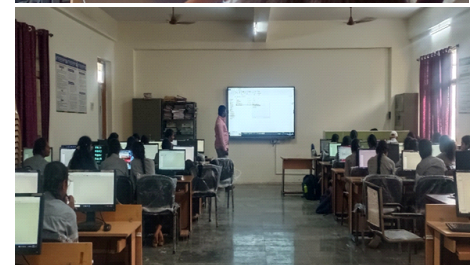
The aim of workshop is to discuss real life use cases on IoT application and make the session really interactive by providing an

opportunity to suggest a solution to real life scenario.

The main headlight of the workshop are given below:

- Arduino board such as Arduino Uno, Arduino Uno R3 SMD there characteristics were discussed in detail
- Wi-Fi module Programming with Arduino.
- Interfacing different types of sensors with Arduino.
- Interfacing and controlling various devices like LED, motors, sensors etc with Arduino.
- Four examples have been taken as a hands-on such as LED glow, Switch sensing, Temperature display, small motor controlling.

At valedictory ceremony, the participants were awarded the certificates.



Christmas celebration



Faculty article on Industry 4.0 – The Era of Smart Manufacturing in ECE

By, SIRISHA , Assistant Professor ECE

Industry 4.0 – The Era of Smart Manufacturing in ECE

Industry 4.0 marks a major shift in manufacturing, driven by advancements in Electronics and Communication Engineering (ECE). Smart factories now integrate IoT sensors, embedded systems, automation, and high-speed communication networks to enable real-time monitoring and intelligent decision-making. Robotics, AI, and cyber-physical systems improve precision, reduce errors, and enhance productivity. ECE plays a crucial role by enabling seamless connectivity between machines, data analytics platforms, and cloud systems. With technologies like 5G, edge computing, and advanced control systems, Industry 4.0 creates efficient, flexible, and self-optimizing manufacturing environments that define the future of industrial innovation.



FDP ATTENDED

SI No	Name of the faculty	Title	Event Type	Date of event	Mode of attending
1	Mr.E.Nagaraju	Emerging Trends in VLSI Device,Circuit System Design-A Practical Approach	National	9-11-2023 TO 13-11-2023	ONLINE
2	Mr.E.Nagaraju	Python Programming and SQL	National	27-11-2023 TO 15-11-2023	ONLINE
3	Mrs.D.Shirisha	"I Enabled AR/VR in Communication & signal processing Applications	National	18/12/2023 TO 22/12/2023	ONLINE

FACULTY PUBLICATIONS

SI No	Author	Title	Date of published	ISSN No	Journal
1	Mrs.D.Shirisha	Design of Street Light System using PIC16F877A Digital Controller	11/10/2023		UGC
2	Mrs.D.Shirisha	Design And Implementation of IoT-Enabled Movable Road Divider for Vehicular Traffic Control(2nd position)	11/10/2023		UGC
3	Mrs.M.Pravallika	Design Cmos Low Power High Speed Digital 4-bit Counter At 45 Gpdk Technology	14/11/2023		UGC

WORKSHOP'S ORGANIZED

SI No	Name of the faculty	TITLE	Event Type	Date of event	Mode of Conducting	No.of Participants
1	Mrs.G.Indira Priya darshini	PCB DESIGN AND FABRICATION	National	17-11-2023 to 18-11-2023	OFFLINE	63
2	Mrs.G.Indira Priya darshini	A JOURNEY INTO ARDUINO AND IOT APPLICATIONS	National	20-11-2023 to 21-11-2023	OFFLINE	63
3	Mrs.G.Indira Priya darshini	CIRCUIT CRAFT:"A JOURNEY TO IOT APPLICATIONS"	National	22-12-2023 To 23-12-2023	OFFLINE	63

WORKSHOP'S ATTENDED

SI No	Name of the faculty	TITLE	Event Type	Date of event	Mode of attending
1	Mr.P.Harikrishna	RS & GIS Applications in Natural Resource Management	National	06-11-2023 to 17-11-2023	ONLINE
2	Mr.P.Harikrishna	Automated Feature Extraction from High Resolution Images	National	20-11-2023 to 24-11-2023	ONLINE
3	Mr.P.Harikrishna	Geo data sharing and Cyber Security	National	28-11-2023 to 11-12-2023	ONLINE

ONE WEEK WORKSHOP on “LIFE SKILLS”

The Department of Electronics and Communication Engineering organized a One Week Workshop on “Life Skills” from 9th October to 13th October, 2023 at A-Block Seminar Hall. The workshop aimed at enhancing the personal, interpersonal, and professional competencies of students to prepare them for academic excellence and industry readiness.

Objectives of the Workshop

The primary objective of the workshop was to equip students with essential life skills required for personal growth and career development. The program focused on:

- Self-awareness and empathy
- Interpersonal and communication skills
- Creative thinking and critical analysis
- Decision-making and problem-solving Coping with emotions and stress management

Session Highlights

During the five-day workshop, various engaging activities and discussions were conducted, including:

- Personality development exercises
- Team-building activities
- Role plays and case studies
- Communication enhancement tasks
- Stress management techniques
- Confidence-building practices

The sessions were highly interactive, encouraging students to actively participate and express their ideas.

Outcomes of the Workshop

The workshop helped students to:

- Improve self-confidence and communication abilities
- Develop leadership and teamwork qualities
- Enhance problem-solving and decision-making skills
- Manage stress effectively

Build a positive attitude towards personal and professional growth



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.