



VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

TECHINNOVATION

NEWS LETTER

JAN - MAR, 2024

DEPT. OF ECE

VOLUME NO.: 31

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

- Mr.P.Harikrishna, HOD, ECE.
- Mrs. D. Shirisha, Assistant Professor, ECE.
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- E. Nikitha, ECE (Student)
- M. Raja Suhasini, ECE (Student)
- Surigi Shivani, ECE (Student)
- Bonala Sohini, ECE (Student)



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 2024 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.

College Event - Sankranti: The Harvest of Happiness and Tradition

The festival of **Makar Sankranti** marks the joy of harvest, the warmth of sunshine, and the spirit of togetherness. It's one of the most celebrated festivals across India, and in our college, Sankranti is more than a day — it's a colorful celebration of tradition, unity, and happiness.

Tradition on Campus

The celebrations begin with students decorating the campus with rangoli (muggu) and colorful kites fluttering in the sky. Traditional games like kabaddi, tug-of-war, and kite flying bring back the nostalgic village vibes. Dressed in ethnic attire, students enjoy folk songs, dances, and the aroma of festive foods like pongal and ariselu.

The Spirit of Togetherness

The event beautifully blends culture with youth energy. Students from every department participate enthusiastically, turning the college ground into a festive fair. It reminds us that festivals are not just about customs — they're about connection, community, and joy.

A Festival of Gratitude

Sankranti teaches us to be grateful —

to the farmers, to nature, and to the sunlight that sustains life. As the kites soar high, they symbolize our hopes, dreams, and aspirations for a brighter tomorrow.

“As kites rise to the sky, so do our spirits — celebrating Sankranti with joy, unity, and gratitude.”



EVENTS AT DEPARTMENT

Visit to Rashtrapati Nilayam: A Symbol of Heritage and Harmony

Nestled in the serene surroundings of Bolarum, Secunderabad, Rashtrapati Nilayam stands as a proud symbol of India's unity and cultural heritage. Originally built in 1860 by the Nizam of Hyderabad, this magnificent mansion now serves as the official winter retreat of the President of India.

A Blend of History and Architecture

The Nilayam beautifully reflects Indo-European architectural styles. Surrounded by lush gardens, mango groves, and flower beds, it is a masterpiece of elegance and simplicity. The campus also includes a herbal garden with more than 100 species of medicinal plants, emphasizing harmony between tradition and nature.

A Place of National Significance

Every winter, the President of India stays here to conduct official business and meet citizens, maintaining the age-old tradition of connecting with people across regions. The residence opens its doors to the public during special occasions, allowing visitors to witness its historical beauty and environmental significance.

Learning Beyond Classrooms

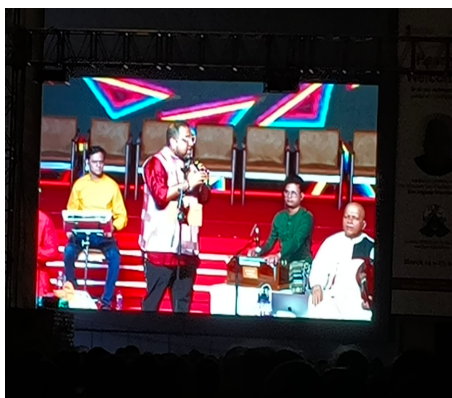
For students, Rashtrapati Nilayam is more than a monument — it's a lesson in architecture, governance, and sustainability. A visit here offers inspiration to appreciate India's diverse culture and responsible leadership.

“Rashtrapati Nilayam stands not only as a heritage structure but as a living reminder of India's unity in diversity.”



Kanha Shanti Vanam: A Journey Towards Inner Peace

In today's fast-paced world, where stress and distractions are part of everyday life, finding peace within has become essential. One such place that embodies calmness and spiritual harmony is Kanha Shanti Vanam, the global headquarters of the Heartfulness Institute, located near Hyderabad.



The Heart of Heartfulness

Kanha Shanti Vanam is not just an ashram — it's a living example of mindfulness, sustainability, and self-development. Spread across hundreds of acres of greenery, it offers a serene atmosphere where people from all walks of life come to meditate, learn, and rejuvenate their minds. The Heartfulness movement teaches relaxation, meditation, and the art of balancing modern life with inner peace.

A Visit to Remember

Students from our college had the opportunity to visit Kanha Shanti Vanam and experience guided meditation sessions that encouraged mindfulness and focus. The tranquil environment, the grand meditation hall, and the eco-friendly campus left everyone inspired. Many students shared how the experience helped them relieve academic stress and improve concentration.

Harmony of Mind and Nature

Beyond meditation, Kanha promotes sustainability through tree plantations, organic farming, and environmental initiatives — teaching us the value of coexisting peacefully with nature.

“Peace begins within — and Kanha Shanti Vanam reminds us that a calm mind can create a beautiful world.”



UPCOMING EVENT

Registration Form

Name:
Date of Birth & Age:
Gender (M/F):
Qualifications:
A). Institution:
B). Affiliating University:
Address for Communication:
Phone No (1):
Phone No (2):
Office:
Email:

Resource Person:
Dr. neeraj upadhyay
Professor
Cse department

Chief-patrons:
Dr. L. Rathalah,
Chairman,
Vignan Group of Institutions.

Mr. B. Shravan,
CEO,
Vignan Group of Institutions

Patron:
Dr. G. Apparao Naidu,
Principal, VMTW

Mr. P. Hari Krishna,
Associate Professor & HOD, ECE.

Co-ordinator:
Dr.G.Jhansi

Faculty Co-ordinator:
Mr.Jangili Sunil Kumar

VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

(Sponsored by Laws Educational Society)
Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad.
Kondapur (V), Ghatkesar (M), Medchal - Malkajgiri (D) - 501 301



A THREE DAY WORKSHOP ON
"RESEARCH METHODOLOGY"

17th to 19th Jun, 2024

Venue:
'A'-Block Seminar Hall,
VMTW.

Organized By:
**DEPARTMENT OF ELECTRONICS AND
COMMUNICATION ENGINEERING**

Last Date For Registration: 07th Jun, 2024

About the Institution:

Vignan's Institute of Management & Technology for Women (VMTW) is a prestigious educational institution located in Kondapur (V), Ghatkesar (M), Medchal (D), Telangana, India. VMTW is the brainchild of Dr. L. Rathalah, Chairman, Vignan Group Institutions, was established during August, in 2008, with four branches of Engineering with the aim of empowering rural women through quality education, VMTW provides a nurturing and inclusive learning environment that fosters academic excellence, personal growth, and professional development.

VMTW is affiliated with the Jawaharlal Nehru Technological University Hyderabad (JNTUH), Hyderabad, approved by the All India Council for Technical Education (AICTE), accredited by NBA (CSE & ECE courses) till June-2025 and is certified by ISO 14001:2015 & 50001:2018. The institute offers undergraduate and postgraduate programs in engineering.

The campus of VMTW is sprawling area of 5 acres sylvan surroundings of mango groves and greenery. VMTW is well-equipped with state-of-the-art infrastructure and modern facilities. The institute houses well-equipped laboratories, a library with a vast collection of books and online resources, spacious classrooms, and a dedicated placement cell to assist students in their career aspirations. VMTW is having hostel with good facilities within campus.

Beyond academics, VMTW encourages students to engage in extracurricular activities, sports, and cultural events. These activities provide opportunities for students to develop their leadership, communication, and interpersonal skills while fostering a sense of community and holistic development.

In conclusion, Vignan's Institute of Management & Technology for Women (VMTW) is a leading institution dedicated to empowering women through quality education. With its focus on academic excellence, practical learning, and overall development, VMTW strives to prepare women for successful careers and leadership roles in the dynamic and evolving professional world. In this process VMTW made the students from 'can you help me' stage to 'can I help you' stage.

About the Department:

Electronics and Communication Engineering (ECE) is a discipline that applies scientific knowledge of electron behavior to develop components, devices, systems, and equipment driven by electricity. It includes several subfields such as signal processing, semiconductor chip design, telecommunication, data communication networks, satellite and radar links, embedded systems, and robotics. The department plays a key role in transforming everyday life through innovative technologies and aims to introduce students to vast opportunities for creativity, along with the tools and methodologies used in designing new technologies and products. With endless applications and wide scope across its sub fields, ECE opens pathways to core electronics and communication careers while also being highly valued in the IT industry. Compared to other branches, ECE students can pursue more interdisciplinary specializations in higher studies, such as Embedded Systems, VLSI, Wireless Communication, and Signal Processing, giving them a broader range of choices.

The Department of Electronics and Communication Engineering at Vignan's Institute of Management and Technology for Women was established in 2008 with an initial intake of 90, which increased to 120 in 2010. Postgraduate programs in VLSI and Embedded Systems were introduced in 2011 and 2014, respectively, each with an intake of 18. The department is equipped with state-of-the-art laboratories, advanced equipment, updated software, and ample computing facilities with 24*7 internet access. All faculty members have a minimum of four years of teaching experience, and the department regularly conducts seminars, guest lectures, workshops, and technical symposia to keep everyone updated with the latest technological advancements. Accredited twice by the National Board of Accreditation (NBA) in 2019 and 2022, with validity up to 2025, the department has a strong track record of students securing placements in various companies.

About the Program:

Research methodology simply refers to the practical "how" of any given piece of research. More specifically, it's about how a researcher systematically designs a study to ensure valid and reliable results that address the research aims and objectives.

For example, how did the researcher go about deciding:
· What data to collect (and what data to ignore)
· Who to collect it from (in research, this is called "sampling design")
· How to collect it (this is called "data collection methods")
· How to analyse it (this is called "data analysis methods")

In a dissertation, thesis, academic journal article (or pretty much any formal piece of research), you'll find a research methodology chapter (or section) which covers the aspects mentioned above. Importantly, a good methodology chapter in a dissertation or thesis explains not just what methodological choices were made, but also explains why they were made.

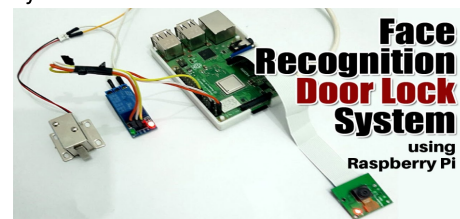
user-friendly. Under the guidance of Mr. T. Pullaiah, the team successfully developed a socially impactful assistive device.

Face Recognition Based Door Unlocking using Raspberry Pi and Machine Learning

Students: P Srivani, Y Vinitha, V Chandana, MSri Varsha Reddy

Guide: Mrs. G. Swathi

This project implements a smart security system using face recognition technology. A Raspberry Pi with a camera module captures live images of individuals. Machine learning algorithms are used to recognize authorized persons. Upon successful identification, the system automatically unlocks the door. Unauthorized access attempts are denied and logged. The project enhances home and office security systems. The students trained datasets for accurate face detection. Python-based ML libraries were utilized for implementation. The system is efficient and reduces dependency on physical keys. Under the mentorship of Mrs. G. Swathi, the team demonstrated practical application of AI in embedded systems.



Faculty article on Greening Tomorrow: How Technology is Shaping a Sustainable Future

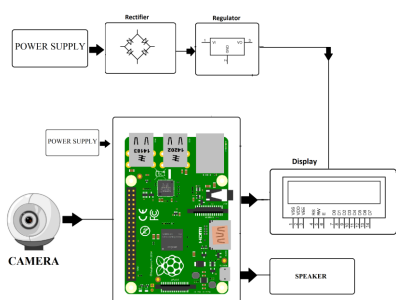
By G. Ganesh Reddy (Ph.D),
Assistant Professor

In an era defined by rapid innovation and increasing environmental awareness, technology is emerging as a powerful catalyst for building a greener and more sustainable world. Modern advancements are no longer limited to enhancing convenience or boosting productivity—they now play a crucial role in reducing ecological impact, conserving resources, and promoting responsible development. From renewable energy systems such as solar, wind, and hydropower to smart grids that optimize

STUDENT PROJECTS

Reading Aid and Translator using Raspberry Pi for Blind People

Students: Mettu Pranitha, Tekula Harshavardhini, Ponugoti Sindhu
Guide: Mr. T. Pullaiah



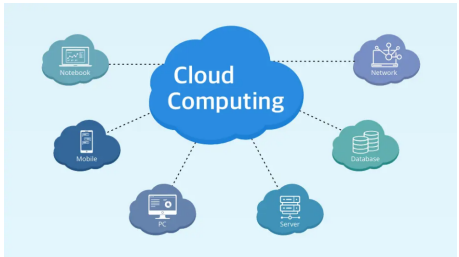
This project focuses on assisting visually impaired individuals through an intelligent reading and translation system using

Raspberry Pi. The device captures printed text using a camera module and converts it into speech output. Optical Character Recognition (OCR) technology is integrated to detect and process text accurately. The system also includes a translation feature to convert text into regional languages. Audio output is provided through headphones for user convenience. The project enhances independence and accessibility for blind individuals. The students worked on hardware interfacing and software integration. Real-time testing was conducted to ensure accuracy and clarity. The system is portable, cost-effective, and

energy distribution, technology is helping nations move away from carbon-heavy practices. Sustainable agriculture is also benefiting through precision farming, IoT-based monitoring, and AI-driven crop management, allowing farmers to increase yield while minimizing water, fertilizer, and pesticide use. In urban landscapes, smart cities are using sensors, data analytics, and intelligent infrastructure to reduce waste, manage traffic, and improve air quality. The rise of green manufacturing, electric vehicles, and biodegradable materials further illustrates how innovation is driving environmental responsibility. Moreover, digitalization is enabling remote work, reducing travel emissions, and supporting the circular economy through efficient recycling technologies. As global challenges like climate change intensify, the fusion of sustainability and technology offers a hopeful path forward. By aligning innovation with environmental stewardship, we can create a resilient, eco-friendly future for generations to come.

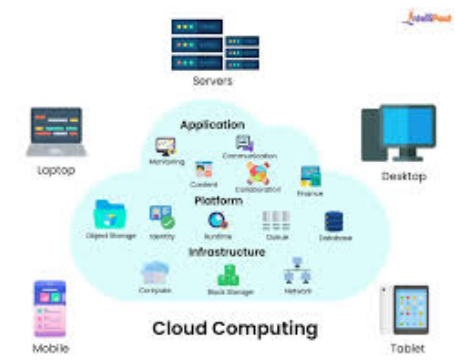


Student Article on Cloud Computing – The Future of Digital Transformation
By, Harika Reddy G IIIrd year



In today's digital era, cloud computing has revolutionized the way data and applications are stored, accessed, and managed. It enables users to access computing resources such as servers,

storage, databases, and software over the internet, eliminating the need for physical infrastructure. From streaming platforms like Netflix to online learning systems, cloud technology powers many of the services we use daily. Its flexibility, scalability, and cost-effectiveness make it an essential part of modern IT infrastructure. Cloud computing also supports remote work, data security, and AI-driven innovation, transforming industries across the globe.



As a student of Computer Science, understanding cloud technologies such as AWS, Microsoft Azure, and Google Cloud opens new career opportunities in software development, data analytics, and cybersecurity. With the world moving rapidly toward cloud-based solutions, mastering this domain is key to becoming future-ready in the digital world.

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Inauguration of
STUDENT ENABLEMENT PROGRAM
Center Of Excellence for WOMEN EMPOWERMENT
22 February 2024 (10:00 am onwards)

Medchal-Malkajgiri, Telangana, India
Badam - Rayaraoji Rd, Telangana 501301, India
Lat 17.48629°
Long 78.697838°
22/02/24 12:16 PM GMT +05:30

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Inauguration of
STUDENT ENABLEMENT PROGRAM
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22 February 2024 (10:00 am onwards)

Hosted by **VIGNAN'S**
INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

INAUGURAL SPEAKERS

Dr. L. Rathalah
Chairman - Vignan Group of Institutions

Shravan Boyapati
CEO - Vignan Group of Institutions

Dr. G. Apparao Naidu
Principal - VMTW

Dr. Phijik Battula
Head - IT - VMTW

B. Gopal
State Head - Telangana
ICT Academy

www.ictacademy.in/PayPal

FACULTY PARTICIPATON

Sl No	Name of the faculty	Title	Event Type	Date of event	Mode of attending
1	Mr.E.Nagaraju	Git and GitHub	National	24-01-2024 TO 07-02-2024	ONLINE
2	Mr.E.Nagaraju	Deep Learning and Artificial Intelligence	National	26-02-2024 TO 01-03-2024	ONLINE
3	Mr.E.Nagaraju	Data Analytics using Power BI and Tableau	National	11-03-2024 TO 15-03-2024	ONLINE
4	Mrs.G.Indira Priya darshini	5G WIRELESS NETWORKS	National	11-02-2024 To 16-02-2024	ONLINE
5	Mrs.D.Shirisha	Outcome based Education	National	09/01/2024 TO 02/02/2024	ONLINE
6	Mrs.D.Shirisha	Deep Learning and Artificial	National	26/01/2024 TO 01/02/2024	ONLINE

WORKSHOP ATTENDED

Sl No	Name of the faculty	Title	Event Type	Date of event	Mode of attending
1	Ms.G.Susmitha	Embedded systems on FPGA	National	01-01-2024	ONLINE

Events -Technical (Attended) (Ex: Webinars, Guest Lectures)

Sl No	Name of the faculty	Title	Event Type	Date of event	Mode of attending
1	Ms.G.Susmitha	The Final Leap: Executing Research and Writing Powerful Ph.D. Results and Discussion	National	28-May-25	National

WOMENS DAY CELEBRATIONS

Vignan's Institute of Management and Technology for Women celebrated International Women's Day 2024 with great enthusiasm and dignity in the institute auditorium. The event was organized to honor the achievements of women and to promote awareness on women empowerment, leadership, and equality.

The program began with a traditional lamp-lighting ceremony, symbolizing knowledge and positivity, in the presence of the principal, senior faculty members, and invited guests. Faculty members and dignitaries graced the occasion, adding significance to the celebration.



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.