DEPARTMENT OF ECE
NEWSLETTER

JAN-FEB 2024

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1.1. OVERVIEW

Electronics & Communication Engineering Department provides students with a solid scientific/technical background and research capabilities in the design, development and manufacture of electronic devices and systems used in a wide spectrum of applications. The applications spans from household appliances to sophisticated satellite communication, from electronic ignition to neural networks and signal processing chips. The Department integrates academic discipline with project-based engineering applications, classroom learning and theory with real world experiences. Annual intake of this Department is 180 students.
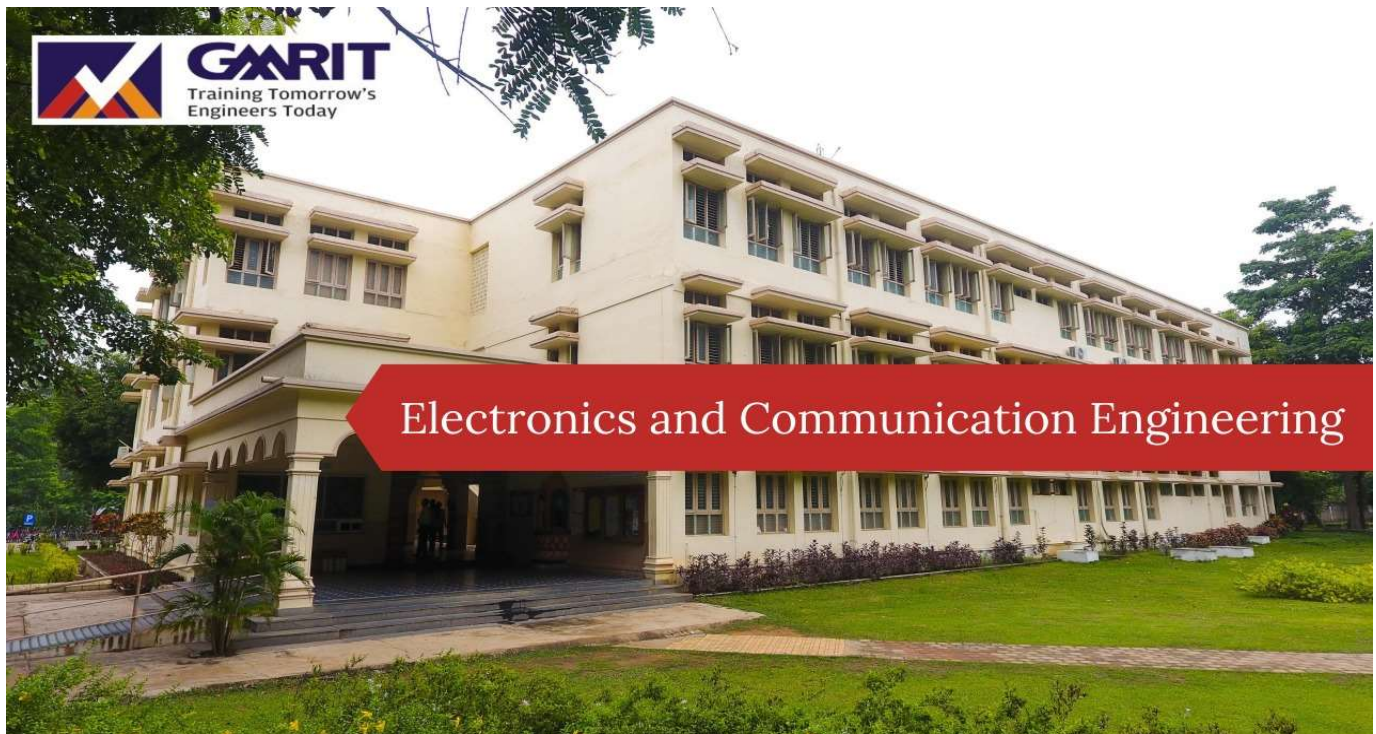
1.2. VISION

To be a nationally preferred department of learning for students and teachers alike, with dual commitment to research and serving students in an atmosphere of innovation and critical thinking.

1.3. MISSION

To provide high-quality education in Electronics & Communication Engineering to prepare the graduates for a rewarding career in Electronics & Communication Engineering and related industries, in tune with evolving needs of the industry.

To prepare the students to become thinking professionals and good citizens who would apply their knowledge critically and innovatively to solve professional and social problems.

1.4. PROGRAMME EDUCATIONAL OBJECTIVES (PEO'S)

1. Embrace technical and professional skills with the spirit of learning, critical thinking while acquiring the fundamentals in science and technology. (PEO1)
2. Contemplate real life problems, design and develop novel products that are technically viable, economically feasible and socially acceptable. (PEO2)
3. Encompass ethical values, exhibit soft skills in management & teamwork acquiring leadership qualities. (PEO3)

1.5. PROGRAMME OUTCOMES (PO'S)

At the end of the Programme, a graduate will be able to

PO 1. Apply the knowledge of basic sciences and fundamental engineering concepts in solving engineering problems.

PO 2. Identify and define engineering problems, conduct experiments and investigate to analyze and interpret data to arrive at substantial conclusions.

PO 3. Propose an appropriate solution for engineering problems complying with functional constraints such as economic, environmental, societal, ethical, safety and sustainability.

PO 4. Perform investigations, design and conduct experiments, analyze and interpret the results to provide valid conclusions.

PO 5. Select/develop and apply appropriate techniques and IT tools for the design & analysis of the systems.

PO 6. Give reasoning and assess societal, health, legal and cultural issues with competency in professional engineering practice.

PO 7. Demonstrate professional skills and contextual reasoning to assess environmental/societal issues for sustainable development.

PO 8. Demonstrate Knowledge of professional and ethical practices.

PO 9. Function effectively as an individual, and as a member or leader in diverse teams, and in multi-disciplinary situations.

PO 10. Communicate effectively among engineering community, being able to comprehend and write effectively reports, presentation and give / receive clears instructions.

PO 11. Demonstrate and apply engineering & management principles in their own / team projects in multidisciplinary environment.

PO 12. Recognize the need for, and have the ability to engage in independent and lifelong learning.

PSO 1.   Apply the knowledge of technological evolutions, model / characterize devices and design the integrated circuits to build analog and digital systems. (Program Specific)

PSO 2.   Understand and apply the fundamentals of communication and signal processing to develop systems wrapped with industry standard protocols and standards. (Program Specific)

1.6. FACILITIES & INFRASTRUCTURE

- ❖ Analog & Digital Communication Lab
- ❖ Integrated Circuit & Pulse Digital Circuits Lab
- ❖ Electronic Device Circuits Lab
- ❖ Microwave & Optical Communication Lab
- ❖ Microprocessor & Micro Controller Lab
- ❖ ECAD Lab
- ❖ Basic Electronics Lab
- ❖ Digital Signal Processing Lab

1.7. MAJOR COURSES

- ❖ Digital Signal Processing
- ❖ Radar Engineering
- ❖ Computer Organisation
- ❖ Electronic Devices and Circuits
- ❖ Analog and Digital Circuits
- ❖ Microwaves

- ❖ VLSI
- ❖ Satellite Communication
- ❖ Cellular Mobile Communication
- ❖ Optical Communication
- ❖ Management Science
- ❖ Pulse & Digital Circuits and Integrated Circuits
- ❖ Electromagnetic Waves
- ❖ Antennas
- ❖ Microprocessors
- ❖ Digital Image Processing
- ❖ Embedded Systems Design and IoT
- ❖ RTL coding Techniques
- ❖ ASIC verification using system Verilog
- ❖ Electronics for Agriculture

PROFESSIONAL SOCIETY ACTIVITIES

ISTE EVENTS:

➢ **ELECTRO-BING-HUNTER:** conducted on 06/02/2024
➢ The Electro-Bing-Hunter event, organized by the Indian Society for Technical Education (ISTE) student chapter, features two engaging rounds that challenge participants' general and technical knowledge. In Round 1, Participants will answer questions related to a specific theme, showcasing their knowledge and quick thinking. In Round 2 Participants will receive a blank bingo paper with randomly chosen numbers. Throughout the round, they will answer intriguing questions based on the numbers selected on their bingo paper, aiming to complete five lines (horizontal or vertical).This event promises an exciting blend of strategy, quick thinking, and teamwork. The event was held at ECE Block ECE SEMINAR HALL, with a total no of participants day wise given below.
➢ **Participants**: Event was conducted by 88 participants.
➢ The event was interactive and lively. The event was conducted successfully.

- ➢ **ELECTRO - TRADERS:** conducted on 27/02/2024
- ➢ The Electro - Traders is an engaging event which is one round event. This event combines strategy and knowledge in a fun format. Participants will receive a set of coins to bid on questions presented during the session, showcasing their quick thinking and knowledge. For each correct answer, they will earn a reward of 2x their initial bid, emphasizing teamwork as they strategize on how to allocate their coins effectively to maximize profits. This thrilling event promises a competitive blend of strategy and knowledge as participants aim to outbid to achieve victory. The event was held at ECE Block ECE SEMINAR HALL, with a total no of participants day wise given below.
- ➢ **Participants**: Event was conducted by 69 participants.
- ➢ The event was interactive and lively. The event was conducted successfully.
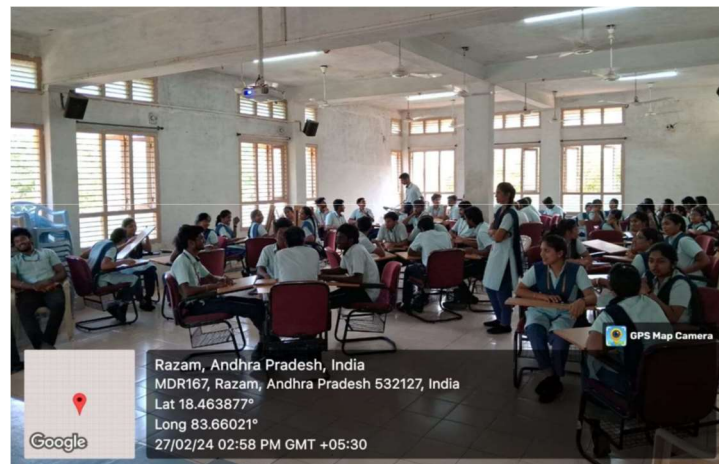
- **ELECTRALOGIC EXPO:** conducted on 30/07/2024
- This Creative Quest features 2 rounds that challenge participant's general and technical knowledge. In Round 1, Teams will participate in a dynamic Q&A session. Each team will answer questions related to a specific theme, showcasing their knowledge and quick thinking. In Round 2,This round will consist of a quiz designed to further challenge the teams. Participants will answer a series of quiz questions that test their understanding of concepts discussed in Round 1, showcasing their teamwork and collective knowledge. The event was held at ECE Block, ECE SEMINAR HALL, with a total no of participants day wise given below.
- **Participants**: The event was attended by **66 participants**.
- The event was engaging and vibrant, successfully achieving its objectives.
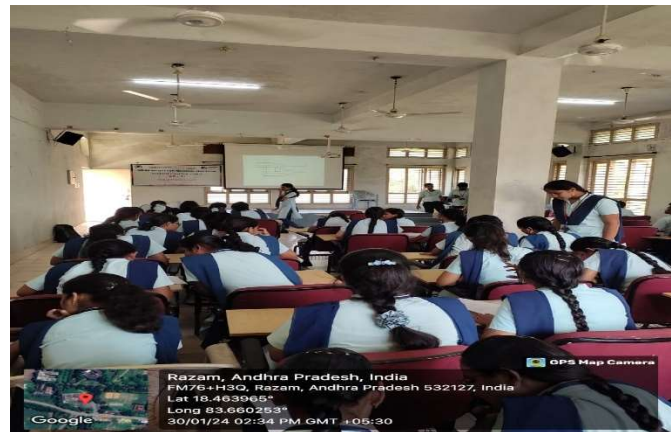
- **E-TOGGLERS:** conducted on 20/02/2024
- This Exciting Event features 3 rounds that emphasizes oral communication, teamwork, and critical thinking. In Round 1, Teams will deliver an oral presentation. Each team will present on a specific theme, demonstrating their general and technical knowledge. In Round 2, This round will consist of a group discussion within individual teams. Teams will discuss and analyze the topics covered in their presentations from Round 1. In Round 3, This round will consist of a structured debate between teams. Teams will engage in a debate on topics related to the themes discussed in Round 1 and 2, Showcasing their teamwork and collective knowledge. The event was held at ECE Block, ECE SEMINAR HALL, with a total no of participants day wise given below.
- **Participants**: The event was attended by **36 participants**.
- The event's engaging and vibrant atmosphere contributed to successful achievement of the event.
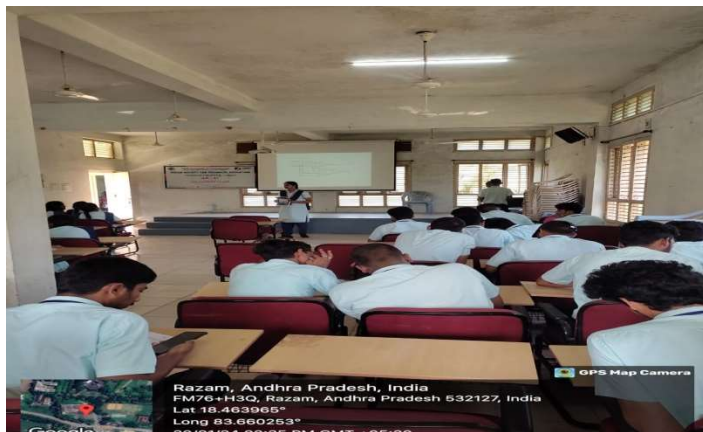
IE(I) EVENTS:

- **QUIZZARDS OF OZ**: Conducted on 13/02/24
- On the occasion of **National Science Day**, this event aims to celebrate scientific knowledge and promote awareness of science among future generations.
- The event features a **General Knowledge Quiz** focused on science concepts:
- Participants will engage in a quiz where they answer questions related to various scientific topics, showcasing their understanding and knowledge.
- Judges will evaluate participants based on their responses, assessing both accuracy and depth of knowledge.:
- Accuracy: Correctness of answers provided.
- Knowledge Depth: Understanding of scientific concepts and principles.

- Engagement: Participants' ability to actively participate and demonstrate enthusiasm throughout the quiz.
- **Participants**: Event was conducted by 45 participants.
- This event was conducted successfully

JOURNAL PAPERS

- Dr. Yogesh mishra,kumar, sumit, et al. "failure log analytics for reducing electrical machine downtime using deep learning." wseas transactions on information science and applications 20 (2023): 444-452.
- Dr. G. Nooka Raju ,et al. "Skin Tumour Detection Using Deep Convolution Neural Networks under Rapidly Varying Illuminating Conditions" of volume 15,issue 12(2024).
- Naidu, M. S. R., B. Anilkumar, and Dasari Yugandhar. "An exact segmentation of affected part in breast cancer using spider monkey optimization and recurrent neural network." *Multimedia Tools and Applications* (2024): 1-19.
- Dr. Mohd Rizwan Uddin Shaikh, TS, Manivannan, et al. "Optimization of DE-QG TFET using novel CIP and DCT techniques." (2024).
- Dr. A. Sudhakar, "Improved Biometric Authentication Using Blockchain Based Biometric Authentication Model", volume 12,issue no.75(2024).
- Kumar, S. ., S. . Ranjan, J. . Kanjalkar, Y. . Misra, B. Bhupati, and M. . Dublish. "Meta-Heuristic Black Widow Optimization Algorithm for Solving M Connected Coverage in Internet of Things". *International Journal of Intelligent Systems and Applications in Engineering*, vol. 12, no. 12s, Jan. 2024, pp. 248-54,
- Anilkumar, B., et al. "Design an image-based sentiment analysis system using a deep convolutional neural network and hyperparameter optimization." *Multimedia Tools and Applications* (2024): 1-20.
- Babji, Prasad & Geethamma, T. & Prabhakar, T.. (2023). Wireless Technologies on the road to effective Disaster Management: A survey. Disaster Advances. 17. 62-72. 10.25303/171da062072.

CONFERENCE PAPER

- Tirunagari, Anilkumar, et al. "Design and Analysis of Microstrip Dipole Antenna Stacked on a PV Panel for Dual-Energy Harvesting." *2023 IEEE Wireless Antenna and Microwave Symposium (WAMS)*. IEEE, 2023.
- Dr.A.Sivasangari ,"Smart Traffic Management using AV's and LIDAR" 3rd National Conference FUNDAMENTALS OF RENEWABLE ENVIRONMENT SAFETY & HEALTH 2023.
- Kalyanchakravarthi P "AI based Reliable and secure data transfer in Wireless Networks" , 1st International Conference on Emerging Technologies in Engineering and Management Sciences – 2023.
- Tirunagari, Anilkumar, et al. "Design and Analysis of Pascal Triangle Shaped Chip-less RFID Tag Antenna." *2023 IEEE Wireless Antenna and Microwave Symposium (WAMS)*. IEEE, 2023.

FACULTY DEVELOPMENT PROGRAMME

- This is to Certify that Dr.A. SIVASANGARI, Associate Professor GMR INSTITUTE OF TECHNOLOGY Participated in Five Day Online FDP on "Recent Advances in Nano Electronics and its Applications" organised by the Department of Electronics and Communication Engineering, Aditya Engineering College(A), Surampalem, in association with IETE from 2nd-6th January 2024.
- This is to Certify that Dr.BABJI PRASAD CHAPA, Associate Professor GMR INSTITUTE OF TECHNOLOGY Participated in Five Day Online FDP on "Recent Advances in Nano Electronics and its Applications" organised by the Department of Electronics and Communication Engineering, Aditya Engineering College(A), Surampalem, in association with IETE from 2nd-6th January 2024.
- This is to Certify that Dr.T PRABHAKAR, Professor GMR INSTITUTE OF TECHNOLOGY Participated in Five Day Online FDP on "Recent Advances in Nano Electronics and its Applications" organised by the Department of Electronics and Communication Engineering, Aditya Engineering College(A), Surampalem, in association with IETE from 2nd-6th January 2024.

PATENTS

- USB Type-C Interface Overview and Power Delivery Microchip University by Dr. T. Anil Kumar