DEPARTMENT OF ECE
NEWSLETTER
NOV-DEC 2023

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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.
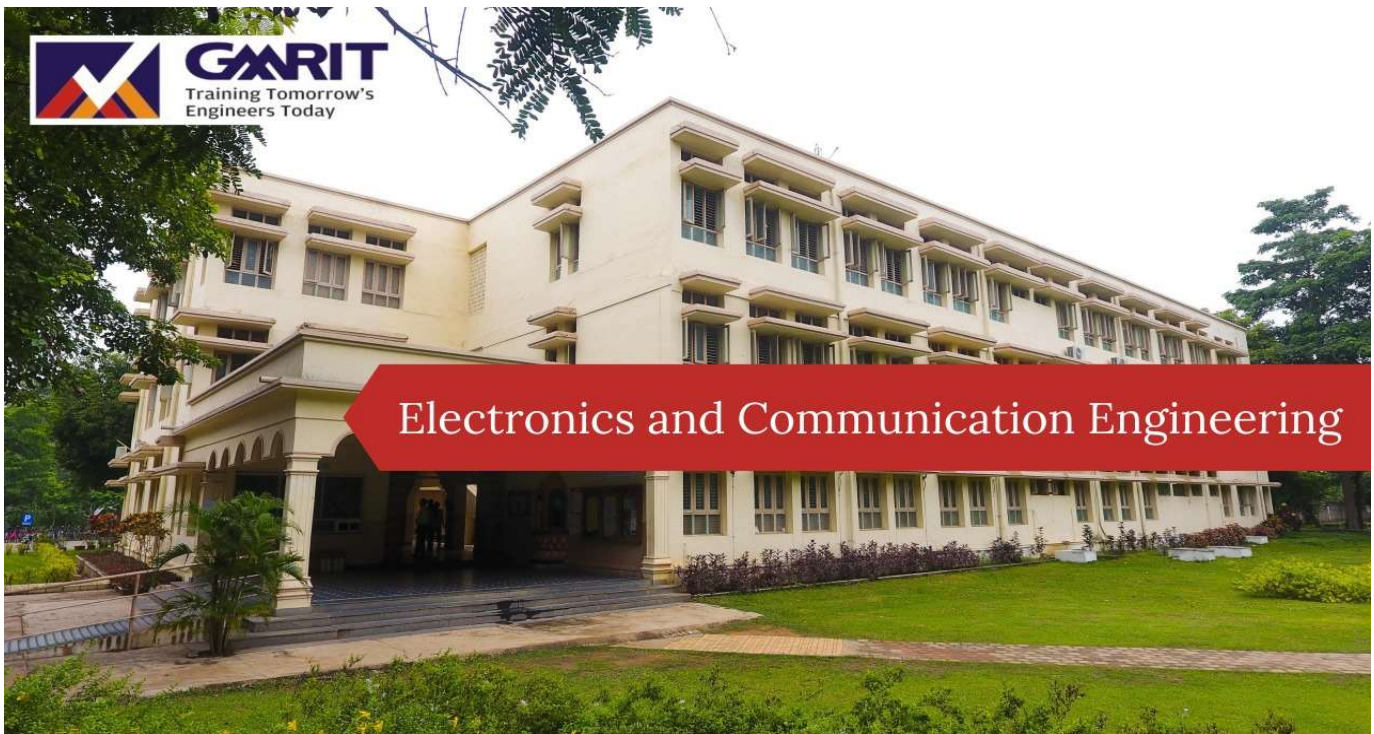
1.2. VISION

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:

- ➤ **GLOBTALK:** conducted on 03/11/2023
- ➤ The "GLOBTALK" event, organized by the Indian Society for Technical Education (ISTE) student chapter on November 3, 2023, was a unique and engaging technical competition.
- ➤ In this event, participating teams were assigned specific countries, and their task was to present comprehensive insights on various aspects of the assigned nation. These aspects included tourism, the IT industry, population statistics, and more.
- ➤ What set this event apart was its emphasis on teamwork and holistic evaluation. The winners were determined based on how well the teams collaborated and delivered their presentations as a cohesive unit, rather than individual performance. Key evaluation criteria included the team's delivery style, body language, communication skills, and confidence exhibited during their presentations.
- ➤ **Participants**: Event was conducted by 36 participants.
- ➤ The event was interactive and lively. The event was conducted successfully.
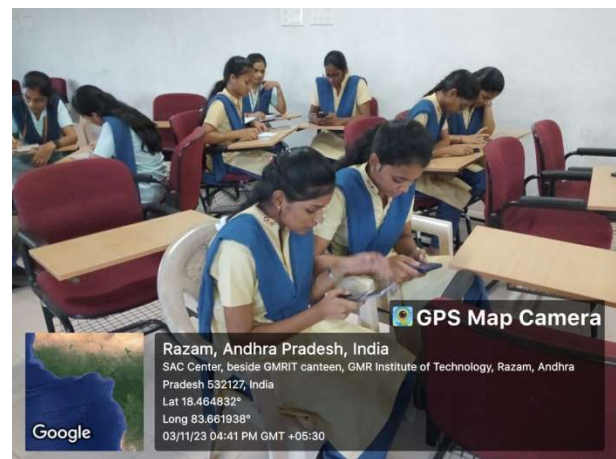
- ➤ **WORD PIRATES:** conducted on 24/11/2023
- ➤ The "WORD PIRATES" event, organized by the Indian Society for Technical Education (ISTE) student chapter on November 24, 2023, was a unique and engaging technical competition. In this event, featured two engaging rounds. In the initial challenge, participants unraveled jumbled words, showcasing linguistic prowess.
- ➤ The second round presented blank puzzles accompanied by dynamic presentations with clues, testing both vocabulary and problem-solving skills. Winners were determined by the total number of correctly answered words, recognizing participants' linguistic agility.
- ➤ Prizes were awarded to top performers. WordPirates, a blend of wordplay and puzzles, provided a captivating experience, promising future challenges in the realm of intellect and entertainment.
- ➤ **Participants**: Event was conducted by 33 participants.
- ➤ The event was interactive and lively. The event was conducted successfully.
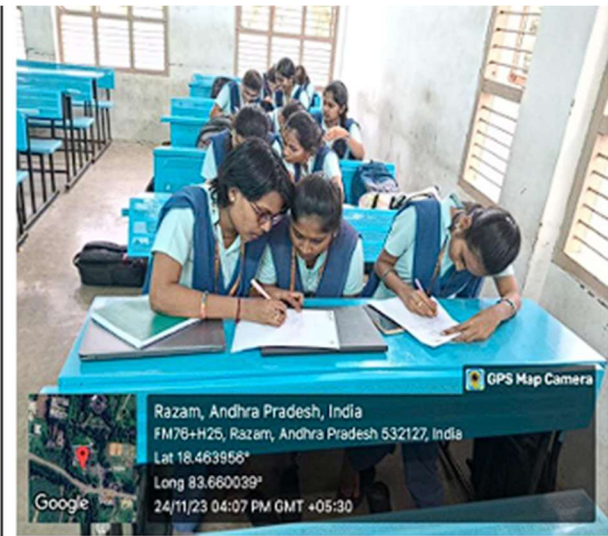
- ➤ **ENGINEERING AI TECH:** conducted on 01/12/2023
- ➤ The "Engineering AI Tech" event, organized by the Indian Society for Technical Education (ISTE) student chapter on December 01, 2023, was a unique and engaging writing competition. This event featured participants showcasing their knowledge and insights on the impact of artificial intelligence on engineering practices.
- ➤ Participants were tasked with writing essays that explored various aspects of AI's influence on engineering, including advancements, challenges, and future prospects. The competition aimed to recognize and reward participants' analytical and writing skills.
- ➤ Prizes were awarded to the top performers, acknowledging their exceptional understanding and articulation of the subject. "Engineering AI Tech" provided a platform for intellectual engagement and promised future challenges in the realm of AI and engineering.
- ➤ **Participants**: Event was conducted by 46 participants.
- ➤ The event was interactive and lively. The event was conducted successfully.

IETE EVENTS:

- ➢ **ELECTROVOCAB HUNT:** conducted on 20/11/2023
- ➢ This Creative Quest features 2 rounds that challenge participant's creativity. In Round 1, teams brainstormed unique ideas based on a theme given and presented their creative concepts to the audience. In Round 2, teams used art supplies to collaboratively create artworks representing their ideas from Round 1, showcasing their teamwork. 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 **35 participants**.
- ➢ The event was engaging and vibrant, successfully achieving its objectives.

IE(I) EVENTS:

- ➢ **Vikram's victory**: Conducted on 03-11-2023
- ➢ This event aims to celebrate the remarkable achievement of India's successful launch of Vikram. It highlights the dedication and expertise of our scientists and engineers, and inspires future generations to pursue excellence in science and technology.
- ➢ Participants are given a newspaper article about Vikram's launch to read aloud. Judges will provide specific technical terms related to the launch, which participants must write on the board. Performance will be evaluated based on accuracy (correct pronunciation and intonation of technical terms), fluency (speed and smoothness of reading), and time (completing the reading within a set timeframe).
- ➢ **Participants**: Event was conducted by 61 participants.
- ➢ This event was conducted successfully.

- ➢ **WEBINAR ON CONSTITUTION**: Conducted on 24-11-2023
- ➢ On the occasion of Constitution Day, this is a small event which aims to celebrate the significance and contemporary relevance of the Indian Constitution and to promote awareness among future generations. This event is all about understanding the Constitution and its key aspects: Participants will be given a section of the Constitution to read aloud. Judges will ask questions about specific articles and amendments, which participants must explain. Judges will evaluate their performance based on accuracy (correct interpretation and explanation of constitutional provisions), fluency (clarity and smoothness of reading and explanation), and time (completing the reading and explanation within a set timeframe).
- ➢ **Participants**: Event was conducted by 61 participants.
- ➢ This event was conducted successfully.

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JOURNAL PAPERS

- Rao, MV Nageswara, et al. "Design and development of efficient SRAM cell based on FinFET for low power memory applications." Journal of Electrical and Computer Engineering 2023.1 (2023): 7069746.
- Babu, Badisa Anil, et al. "An arduino-controlled reconfigurable intelligent surface with angular stability for 5G mmWave applications." *Progress In Electromagnetics Research Letters* 114 (2023): 69-74.
- Dr. D Suresh, A., et al. "An efficient key agreement and anonymous privacy preserving scheme for vehicular ad-hoc networks with handover authentication." *Concurrency and Computation: Practice and Experience* 36.7 (2024): e7979.
- Suman, Jami Venkata, et al. "Self-Clocked Shift Registers Utilizing 90 nm CMOS: Design, Analysis and Insights."

CONFERENCE PAPERS

- Badisa, Anil Babu, Taraka Phani Madhav Boddapati, and Krishnasamy T. Selvan. "An AlGaAs Diode-based Reconfigurable Intelligent Surface for mmWave Communication." *2023 IEEE Microwaves, Antennas, and Propagation Conference (MAPCON)*. IEEE, 2023.

BOOKS

- Dr J. Venkata Suman "Digital Signal Processing" in INDO-CONTINENTAL ACADEMIC PUBLISHERS.

PROJECTS

- Dr.T.Prabhakar, Dr.A.Sivasangari a project done on "Artificial intelligence-based detection for Parkinson's Disease" in presence of State University Research Excellence (SERB SURE).

FACULTY DEVELOPMENT PROGRAMME

- This is to certify that Dr. A. Siva Sangari is attended a workshop in Introduction to Machine Learning for 40 days in NPTEL.
- This is to certify that Dr J. Venkata Suman is attended a workshop in Ability Enhancement Course-IoT Lab for 5 days at AGMR CET, Varur Hubli.

ONLINE COURSES

- Dr. A. Siva Sangari completed a course in Introduction to Machine Learning in SWAYAM .
- Sri. P.V. Murali Krishana completed a course in Getting started with azure devops boards in Coursera.
- Dr. D Suresh completed a course in Introduction to machine learning in NPTEL.
- Sri. B.M.S Sreenivasa Rao completed a course in Python for Data Science, AI & Development in Coursera.

PATENTS

- In pursuance of and subject to the provision of Registered Designs Act 1949, the design of which a representation or specimen is attached, had been registered as of the date of registration shown above in the name of Sri. P.V. Murali krishana in respect of the application of such design to: Applications of artificial intelligence in agriculture weather management :version 2023.
- In pursuance of and subject to the provision of Registered Designs Act 1949, the design of which a representation or specimen is attached, had been registered as of the date of registration shown above in the name Sri. B.M.S Sreenivasa Rao in respect of the application of such design to: ARTIFICIAL INTELLIGENCE AND IOT BASED AUTOMATIC FRUIT QUALITY DETECTION USING HYPERSPECTRAL CAMERA, IMAGE PROCESSING AND DEEP LEARNING ALGORITHMS :version 2023: COMPUTER SCIENCE.
- In pursuance of and subject to the provision of Registered Designs Act 1949, the design of which a representation or specimen is attached, had been registered as of the date of registration shown above in the name of Dr. M.V. Nageswara Rao in respect of the application of such design to: Advance Robotics Equipment for Industrial application Version: 14-2023 Class: Comptroller - General of patents ,Designed Trade Marks ,UK.
- In pursuance of and subject to the provision of Registered Designs Act 1949, the design of which a representation or specimen is attached, had been registered as of the date of registration shown above in the name of Dr. P. Ravi Kumar in respect of the application of such design to: ARTIFICIAL INTELLIGENCE BASED TRAFFIC MONITORING AND CAR CRASH DETECTION USING AND MULTIMODAL DATA FROM DASHBOARD CAMERAS AND DEEP LEARNING ALGORITHMs:version 2023.
- In pursuance of and subject to the provision of Registered Designs Act 1949, the design of which a representation or specimen is attached, had been registered as of the date of registration shown above in the name of Dr J. Venkata Suman in respect of the application of such design to: SOUND AMPLIFIER AND REFLECTOR FOR SMART PHONES:version 2023: India Design Patent.