DEPARTMENT OF ECE

NEWSLETTER
JULY-AUG 2022

FACULTY MEMBERS:

Dr. V. Jagan Naveen
Professor & HOD

Dr. B. Anil Kumar
Assistant Professor

Mr. M Bala Krishna
Assistant Professor

STUDENT MEMBERS:

Ms. M. Hari Chandana
3rd ECE B

Ms. V. Harika
3rd ECE C

Mr. N. Pavan Kumar
3rd ECE B

Ms. R. Gnanaprasuna
3rd ECE C

GMR Institute of Technology is situated at Rajam, a small industrial town about 100 KMs from the 'city of destiny', Visakhapatnam in Andhra Pradesh. The campus of the institute is spread over sprawling 117 acres of land. The lush sylvan and idyllic surroundings at the heart of the agricultural belt, offer an ideal setting for higher studies. The institute is affiliated to the Jawaharlal Nehru Technological University, Kakinada and is approved by AICTE New Delhi. The institute has been accredited NAAC – 'A' grade of UGC. The institution is also having ISO 9001:2008 Quality Systems. The department of ECE has been accredited by National Board of accreditation (NBA).

GMRIT offers 4-year B.Tech. Programs in seven core disciplines, 2-year M. Tech programs in six specializations.

The approved annual intake of the institute is 1038 students. The institution received the grant extension of autonomous status for a period of ten years w.e.f 2018-19 to 2027-2028.

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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 span 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.

Electronics & Communication Engineering

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.

PROGRAMME SPECIFIC OUTCOMES (PSO's)

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 Organization
- ❖ 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

2. FACULTY PUBLICATIONS & ACHIEVEMENTS

Papers Published in Journals

➤ **Dr. D. Srinivasa Rao**, Ch.Rajasekhar, **Dr. GBSR Naidu**, published a research article on 'A Study on statistical distribution and regression analysis of novel coronavirus in India' in Journal of medical pharmaceutical and allied sciences, on 04/07/2022, Vol. 11, no. 3, pp. 4888-4894, Medic, ISSN:2320-7418. **(Scopus Indexed)**

➤ **Dr. Prabhakar, T**., Srujan Raju, K., Reddy Madhavi, K., published a research article on 'Support Vector Machine Classification of Remote Sensing Images with the Wavelet-based Statistical Features,' in Fifth International Conference on Smart Computing and Informatics (SCI 2021) held on 17-09-2021 organized by Department of Computer Science and Engineering, Vasavi College of Engineering, Hyderabad, Telangana, India.

➤ **Dr. Yogesh Misra**, Ashish Kumar Srivastava, Aamir Junaid Ahmad, Ajay Singh Yadav, Subrahmanyam Voore, Ghalib H. Alshammri, and Henry Kwame Atiglah, published a research article on 'Secure Information Collection and Energy Efficiency in Heterogeneous Sensor Networks Using Machine Learning with the Internet of Things' in Hindawi Wireless Communications and Mobile Computing, published on 16-07-2022, Special issue, pp.1-13, ISSN: 1530-8677, **(SCI Indexed)**, IF-2.146.

➤ **Dr Yogesh Misra**, Kommuri Krishnaveni and Dr. R. Arun Sekar, published a research article on 'Implementation of NLOS based FPGA for distance estimation of Elderly using Indoor Wireless Sensor Networks', in Materials Today proceeding, published on 20-1-2022, Vol. 57, No. 5, pp. 2299-2306, ISSN: 2214-7853 **(Scopus Indexed)**.

➤ **Dr. T. Geetamma**, D.Yuvaraj, S. Jaganathan, Sheela, published a research article on 'Robust copyright protection scheme for digital images using DCT and compressed sensing techniques,' in AIP Conference Proceedings on 19-5-2022, Vol. 2393, No. 1, pp.020091-1 to 020091-6, published by AIP Publishing, ISSN: 1551-7616, **(Scopus Indexed)**, IF-0.402.

- **Dr. TVS DIVAKAR, Dr. G. ANANTHARAO**, published a paper on 'DUAL BAND MICROSTRIP ANTENNA for WEARABLE APPLICATIONS at 3.75 GHz and 10.6 GHz,' OPTOELECTRONICS LASER, on 01-08-2022, Vol. 41, No. 7, pp. 765-770, ISSN: 1005-0086, **(Scopus Indexed)**

- **Jami Venkata Suman**, Kusma Kumari Cheepurupalli, Haiter Lenin Allasi, published on 'Design of Polymer-Based Trigate Nanoscale FinFET for the Implementation of Two-Stage Operational Amplifier', in International Journal of Polymer Science, Hindawi, Vol. 2022, No. 1, pp.1-12, ISSN: 1687-9430, IF-2.973, **(SCIE and Scopus Indexed)**

- **Dr. T. Prabhakar** et al., published a research article on 'Gray wolf-student psychology optimization-based deep long short-term memory for survival prediction using cancer gene-expression data,' in Concurrency and Computation: Practice and Experience, Wiley, published on 29-07-2022, ISSN: 1532-0634, IF-1.831 **(SCI Indexed)**

- Arun Sekar Rajasekaran, **Kalyanchakravarthi P**, Partha Sarathi Subudhi, published a research article on 'Anomaly Detection of Smart Grid Equipment Using Machine Learning Applications,' in Distributed Generation & Alternative Energy Journal, River Publishers, on 01-07-2022, Vol. 37, No. 5, pp.1721-1738, ISSN: 2156-6550, **(Scopus Indexed)**

3. SEMINARS/CONFERENCES/WORKSHOPS AND WORKSHOPS ATTENDED/CONDUCTED

Workshops/FDPs

- **Sri. B.M.S Sreenivasa Rao**, attended an 11-Days FDP on 'Development of Machine Learning Techniques for solving Real World Problems' Sponsored by Ministry of Electronics and Information Technology (MeitY) GoI, organised by E&ICT Academy, NIT Warangal and Sathyabama Institute of Science and Technology, Chennai from 18-05-2022 to 28-05-2022.

- **Dr. D. Suresh**, attended an 5-Days FDP on 'AI/ML Teaching methodologies', organised by CEMCA, APITA from 20-06-2022 to 24-06-2022.

- **Dr. T. Geetamma**, attended an 5-Days FDP on 'AI/ML Teaching methodologies', organised by APITA, CEMCA and CSE department of GMRIT from 20-06-2022 to 24-06-2022.

- ➢ **Dr. D Suresh**, has attended a 12-Days FDP on 'Induction for newly recruited teachers,' organized by National Institute of Technical Teachers Training & Research, Rajam, from 11-07-2022 to 22-07-2022

- ➢ **Smt. P. Revathi**, attended a 10-Days FDP on 'Induction for newly recruited teachers,' organized by NITTTR Chennai & GMR Institute of Technology from 11-07-2022 to 22-07-2022.

- ➢ **Dr. J V Suman**, attended a 5-Day FDP on 'Research opportunities in emerging areas of Electronics and Communication Engineering' from 18-7-2022 to 22-7-2022 organized by KPR Institute of Engineering and Technology, Arasur, Coimbatore, India

- ➢ **Dr. A. Siva Sangari**, attended a Five days International FDP on 'Research Opportunities in Emerging areas of Electronics and Communication Engineering' from 18-07-2022 to 22-07-2022, organized by KPR Institute of Engineering and Technology, Coimbatore.

- ➢ **Dr. Yogesh Misra**, attended a 5-Day FDP on 'Research Opportunities in Emerging Area of Electronics and Communication Engineering,' organized by KPR Institute of Engineering and Technology, Coimbatore, from 18-07-2022 to 22-07-2022.

- ➢ **Dr. T. Prabhakar**, attended a One Week Online Faculty Development Programme on "21st CENTURY SKILLS FOR TEACHING & LEARNING (CSTL-2022)" from 16-08-2022 to 20-08-2022, organized by GMR INSTITUTE OF TECHNOLOGY, RAJAM.

- ➢ **Dr. A. Siva Sangari**, attended a One Week Online Faculty Development Programme on "21st CENTURY SKILLS FOR TEACHING & LEARNING (CSTL-2022)" from 16-08-2022 to 20-08-2022, organized by GMR INSTITUTE OF TECHNOLOGY, RAJAM.

Conferences

- ➢ **Dr. Prabhakar, T**., Srujan Raju, K., Reddy Madhavi, K presented a research article on 'Support Vector Machine Classification of Remote Sensing Images with the Wavelet-based Statistical Features,' in Fifth International Conference on Smart Computing and Informatics (SCI 2021) held on 17-09-2021 organized by Department of Computer Science and Engineering, Vasavi College of Engineering, Hyderabad, Telangana, India.

Online Courses

➢ **Dr. Yogesh Misra** has completed an 8-Week duration Online Course on 'Digital Electronics' offered by *Udemy* platform, completed on 27-6-2022.

4. OTHERS

Project Proposals Submitted by Faculty for Funding

➢ **Dr. J V Suman,** submitted a Research Project proposal on 'Design and Development of Artificial Intelligence based Denoising Technique for Radar Target Detection,' on 19-07-2022 to *Small Immediate Need Grants (SING)* funding Agency, with expected project budget of Rs. 8,96,500/- and waiting for result.