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DEPARTMENT OF ECE

NEWSLETTER

MAR-APR 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.

TABLE OF CONTENTS

1. DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

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. STUDENT ACTIVITIES

Workshops attended by Students

- BONI MOUNIKA 18341A0422, A Swathi 18341A0403, Ch Tarakeswari 18341A0426, ABVS Gayathri 19345A0406, “An efficient and secure anonymous authentication scheme for V2G Networks” ICDCS 2022 (Karunya Conference) on April 21st, 2022.

- K Swathi 18341A0471, M Sai Venkata Krishna Reddy 18341A04A0, K Rakesh 18341A0472, P Pavan Kumar 18341A04A8, M Hemanth Kumar 18341A0494

  “An efficient Key agreement and anonymous mutual authentication protocols for secure communication in VANET'S “ICESIC 2022 (VELTECH), April 22nd, 2022.

3. FACULTY PUBLICATIONS & ACHIEVEMENTS

Papers Published in Journals

- **Jami Venkata Suman**, G.M.Anitha Priyadarshini and Mamidipaka Hema "FPGA Implementation of Improved 32-Bit Wallace Multiplier International Virtual Conference on Machine Learning" Applications in Applied Sciences and Mathematics (IVCMASM 2022) 3/30/2022 SRM Easwari Engineering College Ramapuram, Chennai.
- **P Kalyan chakravarthi**, D Y Varaprasad, T V Janadhana Rao,A. Suresh, "Virtual technology for smart education", International Journal of Health Sciences, vol. 6, no. 2, pp. 5457-5465 (Indexed by Scopus, IF : 1.75, Q4, https://doi.org/10.53730/ijhs.v6nS2.6367)
- **Suresh Dannana**, "Blood group detection using ML classifier", International Journal of Health Sciences, vol. 6, no. 1, pp. 4395-4408 (Indexed by Scopus, IF: 1.75, Q4, https://doi.org/10.53730/ijhs.v6nS1.5830)
- **Govinda Rao Locharla**; Sheela. V. K; S. Lakshmi; Tripti Tiwari, "Review of deep learning based methods for sleep apnea detection", International Journal of Health Sciences, vol. 6, no. 2, pp. 6556-6565 (Indexed by Scopus, IF: 1.75, Q4, https://sciencescholar.us/journal/index.php/ijhs/article/view/6556)
- Virodhi Dakshayani, **Govinda Rao Locharla**, Paweł Pławiak, Venkataramana Datti and Chiranjeevi Karri "Design of a Gabor Filter-Based Image Denoising Hardware Model" vol. 11, no. 7, pp. 1-16 (Indexed by SCI, IF : 2.1, Q3, https://www.mdpi.com/2079-9292/11/7/1063)
- A REVIEW PAPER ON ADIABATIC LOGIC BASED VARIOUS FULL ADDERS Macharla Bhargavi, Barnali Malakar, **Jami Venkata Suman**, Journal of the Maharaja Sayajirao University of Baroda 4/25/2022 561(III) 31-37 Maharaja Sayajirao University of Baroda, 0025-0422 UGC CARE GROUP-1

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

Workshops

- **Dr. T. Prabhakar** attended workshop AICTE-ISTE approved Orientation/Refresher Programme on "Recent Trends in Wireless Communication and IoT" 7-days duration from 08-12-2021 to 14-12-2021 at Oriental Institute of Science and Technology, Bhopal, Madhya Pradesh.
- RESEARCH APPLICATIONS IN MACHINE LEARNING-2022 3/28/2022 to 4/1/2022 GMRIT, Dept. of IT, Rajam.
- AICTE-ISTE Orientation/ Refresher Programme on "5G Technology"Guru Nanak Institute of Technology 2/21/2022 to 2/26/2022. Guru Nanak Institute of Technology, Nagpur, Maharashtra

Conferences

- **P Kalyan Chakravarthi**, D.Yuvaraj, V Venkataramanan, “IoT-based smart energy meter for smart grids”, 6th IEEE International Conference on Devices, Circuits and Systems (ICDCS'22), Karunya Institute of Technology and Sciences, Coimbatore, Tamilnadu, India, 22nd April,2022.

Online Courses

- **Sri. P. Kalyan Chakravarthi** “C for Everyone: Programming Fundamentals” course University of California, Santa Cruz 4/19/2022. (8 Weeks)
- **Dr. D Suresh** “python for data science” NPTEL, IIT-M 4/20/2022. (4 Weeks)
- **Dr. P. Ravi Kumar** “Programming for everybody (Getting started with Python)” courser University of Michigan 3/30/2022. (7 Weeks)
- **Dr. A. Siva Sangari** “Python for Data Science” NPTEL IIT Madras 3/27/2022. (4 Weeks)
- **Dr. L. Govinda Rao** “Arduino Programming Interface” GMR Institute of Technology

4/24/2022. (4Weeks)

https://www.udemy.com/certificate/UC-6fd0aa463204-4b53-a514-0a3447ccd307/?utm_medium=email&utm_campaign=email&utm_source=sendgrid.com

- **Dr. A. Sudhakar** "Python for Data Science" NPTEL, 4/2/2022. (4 Weeks)
- **Dr. T. Prabhakar** "Module 1: Orientation Towards Technical Education and Curriculum Aspects"

  http://nittt.nta.ac.in/ NITTT 4/10/2022. (8 Weeks).

5. OTHERS

Project Proposals Submitted by Faculty for Funding

- **Dr. Suresh Dannana, Dr. Ch. Babji Prasad** "Multiuser Relay with Dynamic Power Allocation Using Deep Learning for Next Generation Communication" SERB Rs. 3012593 on 4/13/2022. (Submitted and waiting for Result).
- **Dr. A Sudhakar, Dr. TVS Divakar** "Experimental investigations to design flexible Microstrip antenna for biomedical applications" CRG Rs.5067920 on 4/22/2022 (In Progress).
- **Dr. JAMI VENKATA SUMAN, Dr. Ch. Babji Prasad** "Design and Development of Wireless Sensor Network with Cognitive Radio Functionalities for Disaster Management" SERB-CRG Rs. 4986212 on 4/12/2022 In Progress.