Electrical & Electronics Engineering Department-Newsletter

About GMRIT

GMR Institute of Technology is situated in Rajam, a small industrial town approximately 100 kilometers away from the 'city of destiny,' Visakhapatnam in Andhra Pradesh. The institute's campus spans over a sprawling 117 acres of land. The lush, sylvan, and idyllic surroundings in the heart of the agricultural belt provide an ideal setting for higher studies. The institute is affiliated with Jawaharlal Nehru Technological University, Kakinada, and approved by AICTE New Delhi. It has been accredited with NAAC - 'A' grade by UGC. The institution also holds ISO 9001:2008 Quality Systems certification. The Department of EEE has been accredited by the National Board of Accreditation (NBA) in Tier-I for the academic years 2022-23 to 2024-25.

GMRIT offers 4-year B.Tech. programs in nine core disciplines and 2-year M. Tech programs in six specializations. The approved annual intake of the institute for the academic year 2022-23 is 1122 students. The institution has received a grant extension of autonomous status for a period of ten years, starting from 2018-19 to 2027-2028.

About EEE Department

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.

Mission

To provide high-quality education in Electrical & Electronics Engineering to prepare the graduates for a rewarding career in Electrical & Electronics 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

Overview

The Department of Electrical & Electronics Engineering was established in 1997. The department offers four-year B.Tech and two-year M.Tech programs. It has a rich tradition and well-qualified faculty, along with widely recognized laboratories. The department aims to provide a strong foundation in Electrical and Electronics Engineering fundamentals, emphasizing mathematical and scientific principles. Additionally, the course focuses on developing skills in the application of design processes for innovative engineering solutions. The annual intake of students in this department is 120.

Facilities & Infrastructure

- ➢ Sophisticated Laboratories include:
  - Electrical Machines Lab
  - Electrical Engineering Lab
  - Electrical Measurements Lab
  - Power Systems Lab
  - Power Electronics Lab
  - Electrical Systems Simulation
  - Power Electronics and Drives Lab (PG)
- ➢ An efficient administrative office that operates as per ISO-9001 standards
- ➢ A well-stocked department library
- ➢ To enable the students and provide opportunities, to understand in the industrial eco-systems and work on latest technological developments in the industries, MoUs are signed with various industrial organizations
- ➢ Committed and dedicated faculty

Major Courses Offered

- ➢ Electrical Machines
- ➢ Electrical Circuits
- ➢ Measurements and Instrumentation
- ➢ Semiconductor Devices & Circuits
- ➢ Linear and Digital integrated circuits
- ➢ Electromagnetic Field Theory
- ➢ Control Systems
- ➢ Power Generation, Transmission and Distribution
- ➢ Power System Protection
- ➢ Green Energy Technologies
- ➢ Power Electronics
- ➢ Electrical Vehicle Technologies
- ➢ Signals and Systems Theory
- ➢ Electrical Drives
- ➢ Power System Analysis and Control
- ➢ Engineering Economics and Project management

Academic Achievements

Books Published

- ➢ Ramana Pilla and Chitambara Rao, "Electronic Devices and Circuits", S Chand Publishing House, June 2023 (ISSN No. 9789355017628)
- ➢ G Chandra Sekhar, D Ravi Kishore and B Kavya Santoshi "Network Analysis & Synthesis", Deccan International Academic Publising House, July 2022 (ISSN No. 9789395191128)

Papers Published in Journals

➢ Babji Bommana,J. S. V. Siva Kumar, Ramakrishna S. S. Nuvvula , Polamarasetty P. Kumar, Baseem Khan , Suresh Muthusamy , and Ravikiran Inapakurthi, "AComprehensive Examination of the Protocols,Technologies, and Safety Requirements for Electric Vehicle Charging Infrastructure", Hindawi Journal of Advanced Transportation, Volume 2023, Article ID 7500151, pp.1-26, June 2023, (Indexed by SCIE, IF:2.34, Q2, https://doi.org/10.1155/2023/7500151)

➢ Ayyarao, T.S.L.V., Kishore, G.I., "Dynamic Behaviour And Microstructure Evolution Of Zro2 Particle Reinforced Aluminium Alloy Ceramics Matrix Composites", Journal of soft computing, pp.1-22, June 2023, (Indexed by SCIE, IF:4.1, Q2, https://doi.org/10.1007/s00500-023-08630-x)

➢ Shaik, M., Gaonkar, D.N., Nuvvula, R.S.S., Kumar, P.P., Khan, B., "Probabilistic Optimal Active and Reactive Power Dispatch including Load and Wind Uncertainties considering Correlation", International Transactions on Electrical Energy Systems, Article ID. 2759073, June 2023, (Indexed by SCI, IF: 2.639, Q2, https://doi.org/10.1155/2023/2759073)

➢ M. V. Nageswara Rao, Mamidipaka Hema, Ramakrishna Raghutu, Ramakrishna S. S. Nuvvula, Polamarasetty P. Kumar,Ilhami Colak,and Baseem Khan, "Design and Development of Efficient SRAM Cell Based on FinFET for Low Power Memory Applications", Hindawi Journal of Electrical and Computer Engineering Volume 2023, Article ID 7069746, June 2023 (Indexed by SCOPUS, IF:2.4, Q2, https://doi.org/10.1155/2023/7069746)

➢ Kumar Pakki Bharani Chandra, Devendra Potnuru, Danalakshmi Durairaj, Premkumar Manoharan, Hassan Haes Alhelou, "Nonlinear state estimator design and implementation for speed control of a BLDC motor drive using square-root extended H∞ filter",IET Power Electronics, Published online, July 2023 (Indexed by SCIE, Q1, DOI: 10.1049/pel2.12545)

➢ Ponkumar G, Jayaprakash S, Karthick Kanagarathinam. "Advanced Machine Learning Techniques for Accurate Very-Short-Term Wind Power Forecasting in Wind Energy Systems Using Historical Data Analysis". Energies. 2023; 16(14):5459. (SCI-E Q3 & Scopus Indexed, Q1, Impact Factor 2022: 3.2, https://doi.org/10.3390/en16145459)

➢ Gokulan Ravindiran, Gasim Hayder, Karthick Kanagarathinam, Avinash Alagumalai, Christian Sonne, "Air quality prediction by machine learning models: A predictive study on the indian coastal city of Vishakhapatnam", Chemosphere, 2023, 139518, ISSN 0045-6535, (SCI-E Q1 & Scopus Indexed, Q1, Impact Factor: 8.943, https://doi.org/10.1016/j.chemosphere.2023.139518)

➢ Kumar, P.P., Rahman, A., Nuvvula, R.S.S., Colak, I., Muyeen, S.M., Shezan, S.A., Shafiullah, G.M.,

Ishraque, M.F., Hossain,   , "Using Energy Conservation-Based Demand-Side Management to Optimize an Off-Grid Integrated Renewable Energy System", Sustainability, vol.15, No.13, 2023. (Indexed by SCIE, I.F:3.9,Q2, https://doi.org/10.3390/su151310137)

Workshop / FDP Attended by Faculty Members

➢ Dr. G Indira Kishore attended an FDP program titled 'Realization of Community Microgrid Using Opal-RT' at VIT Chennai, from July 31, 2023, to August 4, 2023.

Workshops / Events / Guest Lecture Organized

➢ Guest Lecture titled "Startup Impact on the External Landscape" by Mr. Kalki Nadh founder of startup (INTECHXINTERIO and WE3 Constuctions & Interiors) organized by EEE Department on 26th August 2023.

➢ The promotion of Department-Level Startup Projects was organized by the EEE Department on August 19, 2023.

➢ The 'An Exploration of Startup Ideas Among Students' event was organized by the EEE Department of GMRIT, Rajam, on the 25th of August 2023.

Newspaper Spotlights

➢ GMRIT Alumni Mr. V. Bhargav (EEE) Selected as Group 1 Officer