

# Electrical & Electronics Engineering Department-Newsletter

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## About GMRIT

[www.gmrit.edu.in](http://www.gmrit.edu.in)

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

## Research and Academic Achievements

### Funded Projects

- Dr. L V Suresh Kumar (PI), Dr.T S L V Ayyarao (Co-PI), Associate Professors, Dept. of EEE, received a funded project worth Rs.7,90,000/- from the sponsoring agency iHUB DivyaSampark-(A joint initiative of the Government of India Department of Science & Technology (DST) and IIT-Roorkee) in September 2023.

## Patents

- Dr. M. Venkatesh from the EEE department has published a patent titled "System and Method for Optimizing the Range of an Electronic Article Surveillance System." The application number is 202311065375. It falls under the jurisdiction of Intellectual Property India, and the publication date is 20-10-2023.
- Dr. P. Ramana, from the EEE department, has published a patent titled "Selection of Optimal Location and Capacity of EV Charging Station." The application number is 202341055303. It is under the jurisdiction of Intellectual Property India, and the publication date is 01-09-2023.
- Mr. J. Ravi Kumar, a faculty member from the EEE department, has published a patent titled "Efficient Wind Turbine Blade Design Using Aeroelastic Tailoring." The application number is 202341060733. It is governed by the jurisdiction of Intellectual Property India, and the publication date is 13-10-2023.

## Technical Paper Publication in Conferences

- Mishra, S.P., Sudheshna, G., Senapati, R., Priyanka, D., Lokeswar Rao, K., Adilakshmi, K., Ch, M., "A case studies on various Charging Methodology in Evs", 2023 International Conference in Advances in Power, Signal, and Information Technology, APSIT 2023 (DOI:10.1109/APSIT58554.2023.10201676)

- Mishra, S.P., Padhi, P.P., Sudheshna, G., Priyanka, D., Lokeswar Rao, K., Adilakshmi, K., Ch, M., "EV's Battery Thermal Management analysis using various cooling techniques- A Case study", 2023 International Conference in Advances in Power, Signal, and Information Technology, APSIT 2023 (DOI: 10.1109/APSIT58554.2023.10201743)

## Books Published

- Dr. K.Chitambar Rao, Dr. Ramana Pilla & Dr. G.T. Chandar Sekhar, "Industrial Electronics", by Shree Publishing House, Visakhapatnam, India, October 2022, ISBN No: 9789391117917

## Papers Published in Journals

- AlFaraidy, Faris A., Kishore Srinivasa Teegala, and Gaurav Dwivedi. 2023. "Selection of a Sustainable Structural Floor System for an Office Building Using the Analytic Hierarchy Process and the Multi-Attribute Utility Theory" Sustainability 15, no. 17: 13087. (Indexed in SCIE, I.F:3.9, Q2, <https://doi.org/10.3390/su151713087>)
- Gokulan Ravindiran, Sivarethnamohan Rajamanickam, Karthick Kanagarathinam, Gasim Hayder, Gorti Janardhan, Priya Arunkumar, Sivakumar Arunachalam, Abeer A. AlObaid, Ismail Warad, Senthil Kumar Muniasamy, "Impact of air pollutants on climate change and prediction of air quality index using machine learning models", Environmental Research, Volume 239, Part 1,

2023, 117354, ISSN 0013-9351, (SCI-E Scopus I & indexed, Q1, Impact Factor 2023: 8.3, <https://doi.org/10.1016/j.envres.2023.117354>)

- Karthick Kanagarathinam, Aruna SK, Ravivarman S, Safran M, Alfarhood S, Alrajhi W, "Enhancing Sustainable Urban Energy Management through Short-Term Wind Power Forecasting Using LSTM Neural Network", Sustainability. 2023; 15(18):13424. (SCI-E Q2 & Scopus Indexed, IF 2023: 3.9, <https://doi.org/10.3390/su151813424>)
- Sk. A. Shezan, Md. Fatin Ishraque, GM Shafiullah, Innocent Kamwa, Liton Chandra Paul, SM Muyeen, Ramakrishna NSS, Mohammed Zeehan Saleheen, Polamarasetty P. Kumar, "Optimization and control of solar-wind islanded hybrid microgrid by using heuristic and deterministic optimization algorithms and fuzzy logic controller", Energy Reports, vol.10, pp. 3272-3288, 2023, ISSN 2352-4847, (SCI-E Q2 & Scopus Indexed, I F: 4.937, <https://doi.org/10.1016/j.egy.2023.10.016>)

### Achievement and awards

- Mr K Sravan Kumar, (JNTU NO.22345A0201) participated an Event Title "IDEATHON EVENT" on 3rd & 4th November 2023 at GITAM University, Vishakapatnam.

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### Workshop / FDP Attended by Faculty Members

- Dr R Rajesh Kumar Patnayak attended a International FDP Program on "Introduction to Artificial Intelligence" from 9-14 October 2023 at G. PULLA REDDY ENGINEERING COLLEGE, KURNOOL