Electrical & Electronics Engineering Department-Newsletter

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About GMRIT

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 Gurajada, and approved by AICTE New Delhi. It has been accredited with NAAC - 'A' grade by UGC. The Department of EEE has been accredited by the National Board of Accreditation (NBA) in Tier-I for the academic years 2025-26 to 2027-28.

GMRIT offers 4-year B.Tech. programs in eight core disciplines and 2-year M. Tech programs in five specializations. 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 preferred department of learning for students and teachers alike, with a commitment towards Academics & Research, serving the students in an atmosphere of innovation, critical thinking and making them Industry ready.

Mission

M1. To provide adaptable education in a collaborative and innovative environment in skilling the graduates to solve real world problems in the field of Electrical & Electronics Engineering

M2. To prepare the students as critical thinking professionals with multidisciplinary research orientation and Innovation

M3. To instill ethical values and nurture the graduates who will be able to contribute to the society

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)
- 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 Circuit Analysis
- 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

Journal Publications

- Upendra Kumar Potnuru, Lakshmana Rao Kalabarige, Manohar Mishra, Thirumala Rao Gurugubelli, Salman S Alharthi, Mohan Rao Tamtam, Ravindranadh Koutavarapu, "Optimizing dielectric properties of corannulene nanomaterial for enhanced performance of next-generation electric vehicle batteries: A Machine learning and Nelder-Mead optimization approach", Results in Physics, Vol.76,2025, ISSN

2211-3797, (Indexed by SCIE and Scopus, Impact Factor. 4.4, Q1, DOI: https://doi.org/10.1016/j.rinp.2025.108404)

- Aserkar, Anushree A, Chanthirasekaran, K., Anitha, P., Goyal, Gaurav, Kothuru, Vivek, Kishore, G. Indira, "Adaptive Smart Grid Fault Detection and Prevention in Urban IoT Networks Using AI and Neuro-Blockchain Integration", Journal of Electrical Engineering & Technology, vol. 2025. ISSN: 1975-0102 (Indexed by SCIE, Impact Factor:1.6, Q3, DOI: https://doi.org/10.1007/s42835-025-02412-1)
- S.K., Anumula, Sathish Krishna; D.D., Lakshmi, Devanga Dharani; N., Jayalakshmi, N.; M.J., Rani, M. Jhansi; R.H., Talawar, Ravi H.; R.K., Jalli, Ravi Kumar, "Robot-Assisted Surgery: Advances in Electrical and Computer Engineering", Int. J. Environ. Sci., vol. 11, no. 12s, pp. 77–83, Jun. 2025, (Indexed by Scopus, Impact Factor:3, DOI link: https://doi.org/ 10.64252/z89be313.)
- Reddy, K. A., Manikandan, R., Ravivarman, S., Nurmatovich, H. A., Madaminov, B., & Karthick, K. (2025). Intelligent Control of BLDC Motors Using Adaptive PID and ANN Techniques. International Journal of Basic and Applied Sciences, vol.14, vol.4, pp.242-249. (Indexed by Scopus, Impact Factor:0.93, Q1, DOI: https://doi.org/10.14419/92vkkc31)
- Guntu Nooka Raju, Rebba Sasidhar, P Vamsi Sagar, Shaik Nannu Saheb, N.V.A. Ravi Kumar, Vasupalli Manoj, "Security Vulnerabilities and AI-Driven Intrusion Detection in 5G Network Slicing Architectures," SSRG International Journal of Electrical and Electronics Engineering, vol. 12, no. 8, pp. 269-279, 2025. (Indexed by Scopus, DOI: https://doi.org/10.14445/23488379/IJEEE-V12I8P123)
- JSV Siva Kumar, Hemanthakumar Chappa, Electricity Generation Designs from Ocean Vertical Wave Motions: A Review, SSRG International Journal of Electrical and Electronics Engineering, Vol. No: 12, Issue No.: 6, publication June-25, pp.104-117 (Indexed by SCOPUS, Impact Factor:0.129, Q4, DOI link:10.14445/23488379/IJEEE-V12I6P108)
- J. S. V. Siva Kumar, MahmadMustafa, Sk. M. Unnisha Begum, Badugu Suresh and Rajanand Patnaik Narasipuram,A Digital Twin Driven IoT Architecture for Enhanced xEV Performance Monitoring, Energy Engineering: Journal of the Association of Energy Engineering, Vol.No:_122_ , Issue No.:_10_ , publication September-25, pp.3891-3904 (Indexed by SCOPUS, Impact Factor:0.129, Q4, DOI link:10.32604/ee.2025.070052)
- Kishore, G. I., Venkatesh, M., & Ayyarao, T. S. L. V., "Enhancing robust control of DC-DC converters: adaptive super twisting control based on barrier function", International Journal of Electronics, pp.1–18. (Indexed by SCIE, Impact

Factor:1.1, Q4, DOI: https://doi.org/10.1080/00207217.2025.2565832)

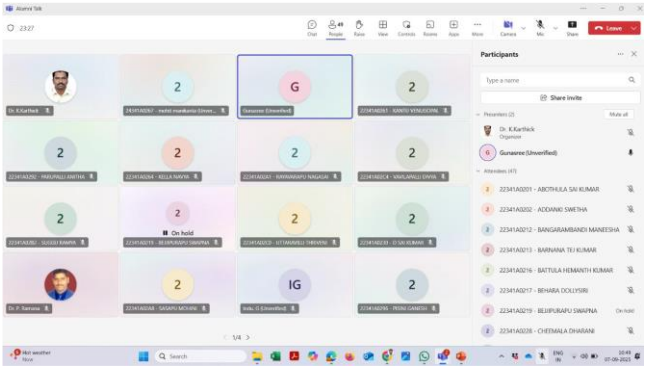
- Suresh Babu, G.; Saikiran, A.; Ravi Kumar, K.; Bharat Kumar, C.; Raghutu, R.; PraveenKumar, S.; Annapureddy, D.R.; Krishna Pradeep, G.V.; Devaraj Naik, B., "Thermal Performance of Erythritol-Based Biochar Composites for Medium-Temperature Energy Storage Applications", Energy Storage, vol.7, no.7, 2025. (Indexed by SCIE, Impact Factor:3.6, Q3, DOI: https://doi.org/10.1002/est2.70276)
- Ranga, J.; Jalli, R.K.; Muthusamy, S.K.; Sundaresan, V.; Ramesh, S.; Palanisamy, R.; Arulprakasam, S., "Multi-Objective Integrated Approach for Distributed Generation Placement and Sizing to Enhance Performance of Radial Power Distribution System", Advances in Electrical and Electronic Engineering, vol.23, no.3, pp. 189-203, 2025. (Indexed by SCIE, Impact Factor:0.5, Q4, DOI: https://doi.org/10.15598/aeee.v23i3.250105)

Professional Development Activities by Faculty Members

- Dr. G. Chandra Sekhar served as an External Examiner for a Ph.D. Viva Voce at KIIT (Deemed to be University), Bhubaneswar, on September 24, 2025.
- Dr. L. V. Suresh Kumar served as a session chair at the IEEE IES technically co-sponsored "Third International Conference on Cyber Physical Systems, Power Electronics and Electric Vehicles (ICPEEV 2025)," held from September 25–27, 2025, at Mahindra University, Hyderabad.

Guest Lecture / Events Organized

- The Department of Electrical and Electronics Engineering, in association with the IEEE Transportation Electrification Council (TEC) Student Branch Chapter, organized an alumni talk on "Alumni Insights on JSW Steel Recruitment (Online)" on 7 September 2025 through MS Teams. The resource person for the session was Ms. Addanki Gunasree, an alumna of the department and Graduate Engineer Trainee, Strategy & Planning (Central Planning Team), JSW Steel, Dolvi Works, Maharashtra. Ms. Gunasree provided an overview of JSW Steel and explained the campus recruitment process, including online assessment, group discussion, technical interview and HR interview stages. She highlighted the technical and soft skills expected from fresh graduates, preparation strategies for written tests, and tips for presenting resumes effectively.



- The Department of Electrical and Electronics Engineering, in association with the IEEE Transportation Electrification Council (TEC) Student Branch Chapter, conducted a student-led hands-on workshop titled "BotDrive: MicroRover Live Workshop" on 24 September 2025 at the Power Electronics Lab. The workshop was facilitated by IEEE student coordinators Ms. Indu, Ms. Poojitha, Mr. Yashwanth Sai Kumar, Ms. Sameera, Mr. Mohith Manikanta and Ms. Lahari.

  The session introduced participants to the fundamentals of mobile robot design using a MicroRover platform. The facilitators explained the hardware architecture of the robot, including chassis, DC motors, motor driver modules, sensors and power supply. They demonstrated controller interfacing and basic motion control of the robot for tasks such as forward/reverse motion and turning. Students were divided into small teams and were given the opportunity to assemble, wire and test the MicroRover under the guidance of the facilitators. The hands-on activities helped participants understand practical aspects such as motor control, sensor integration and debugging of simple faults.

- The Department of EEE, under the ISTE Student Chapter, organized a central technical event titled "Robo Race Challenge" on 11 September 2025 from 2:30 PM to 4:30 PM in the Power Electronics Lab as part of Engineers Day – 2025 celebrations.

  The event was coordinated and conducted by 3rd-year and 2nd-year student coordinators A.

Gayathri, A. Ganesh Kumar, T. M. Srinivas Rao, V. Harika, N. Sivamani, K. Sai Manikanta, M. Dharshini and K. Varshitha.

A total of 37 students from multiple departments participated in the competition, forming 9 teams with team sizes ranging from 2 to 5 members. Each team designed and brought its own wheeled robot (bot), which was manually operated by a designated driver for the entire event. The objective was to complete a closed-loop obstacle track in the minimum net time, combining speed with control, stability and safety. The contest was conducted in two rounds.

Winners – Team Lasha

Leader:

Yenduva Ajay (24341A02D2) [II EEE B]

Members:

Lachubhukta Ajay Kumar (24341A0270) [II EEE B]

Lukalapu Siva (24341A0273) [II EEE B]

Vavilapalli Surya Hemanth Kumar (24341A02C7) [II EEE B]

Yadla Laxmana Rao (24341A02C9) [II EEE B]

Runners-up – Team Kanyaraasi

Leader*:*

Pondara Manikanta Patro (24341A0298) [II EEE B]

Members:

Reddi Ravikumar (24341A04G1) [II ECE C]

Raghumandla Sudheer (24341A04F2) [II ECE C]

Seerapu Krishna Sai Koushik (24341A12A0) [II IT B]

S Prasannakumar (24341A4547) [II AIDS A]

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ANDHAVARAPU GAYATHRI (23341A0205)

TARIGOPPULA MANIKANTA SRINIVASA RAO (23341A02B9)

VEMAKOTI HARIKA (23341A02C5)

BORA LAKSHMI PRASAD (23341A0222)

GOSALA INDU (23341A0245)

VANAPALLI POOJITHA (23341A02C2)

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KOTNANA MOHIT MANIKANTA (24341A0267)

PATTA LAHARI (24341A0294)