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, 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

Patents

- Dr. T. S. Kishore, Professor / EEE, has developed a system and method for real-time performance assessment of commercially available solar photovoltaic (SPV) panels. This invention has been patented and published with the application number 202341051105 A under the jurisdiction of Intellectual Property India. The patent was published on the 22nd of December 2023.

Technical Paper Publication in Conferences

- R. Jalli, P. P. Kumar, R. S. S Nuvvula, N. H. Haroon, B. Srinivasarao and A. Siddiqui, "Data Science Applications in Renewable Energy: Leveraging Big Data for Sustainable Solutions," 2023 12th International Conference on Renewable Energy Research and Applications (ICRERA), Oshawa, ON, Canada, 2023, pp. 465-471, doi: 10.1109/ICRERA59003.2023.10269385.
- Ravikumar, N. V. A., Ramakrishna SS Nuvvula, Polamarasetty P. Kumar, Noor Hanoon Haroon, Umakant Dinkar Butkar, and Alighazi Siddiqui, "Integration of Electric Vehicles, Renewable Energy Sources, and IoT for Sustainable Transportation and Energy Management: A Comprehensive Review and Future Prospects" In 2023 12th International Conference on Renewable Energy Research and Applications (ICRERA), pp. 505-511. IEEE, 2023. doi: 10.1109/ICRERA59003.2023.10269421
- M. Rambabu, R. S. S Nuvvula, P. P. Kumar, K. Mounich, M. E. Loor-Cevallos and M. Gupta, "Integrating Renewable Energy and Computer Science: Innovations and Challenges in a Sustainable Future," 2023 12th International Conference on Renewable Energy Research and Applications (ICRERA), Oshawa, ON, Canada, 2023, pp. 472-479, doi: 10.1109/ICRERA59003.2023.10269392.
- M. V. Kumar, R. S. S. Nuvvula, P. P. Kumar, N. H. Haroon, I. W. Suryasa and U. Priya, "A Review On Demand Side Management System And Its Computer Control Methods," 2023 12th International Conference on Renewable Energy Research and Applications (ICRERA), Oshawa, ON, Canada, 2023, pp. 480-486, doi: 10.1109/ICRERA59003.2023.10269347.

Book chapter

- K. Karthick, Aruna S K and Ravivarman S, Book chapter No. 10 titled 'Machine Learning Based Prediction of Social Media Performance Metrics Using Facebook Data' Ajay, Rani, S., Sarita, & Bhatia, S. (Eds.). (2023). Security and Risk Analysis for Intelligent Cloud Computing: Methods, Applications, and Preventions (1st ed.). CRC Press. https://doi.org/10.1201/9781003329947 (Chapter: 10.1201/9781003329947-10)

Papers Published in Journals

- Vijaya Krishna Rayi, Bisoi, R., Mishra, S. P., & Dash, P. K. (2023). "Improved deep mixed kernel randomized network for wind speed prediction", Clean Energy, vol.7, no.5, pp. 1006–1031. (SCI-E Q1 & Scopus Indexed, I F: 2.3, doi:10.1093/ce/zkad042)
- Sk. A. Shezan, Md. Fatin Ishraque, GM Shafiullah, Innocent Kamwa, Liton Chandra Paul, SM Muyeen, Ramakrishna NSS, Mohammed Zeehan Saleheen,

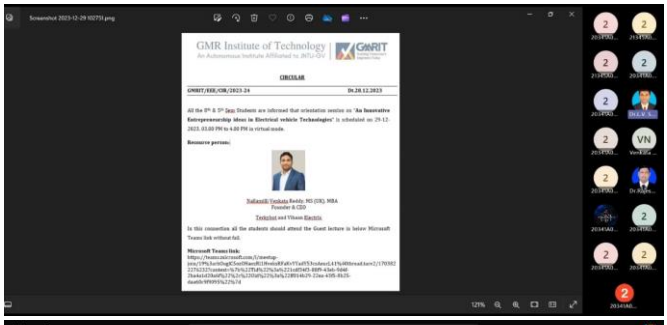
Polamarasetty P. Kumar, "Optimization and control of solar-wind islanded hybrid microgrid by using heuristic and deterministic optimization algorithms and fuzzy logic controller", Energy Reports, Vol.10, 2023, pp.3272-3288, ISSN 2352-4847, (Indexed By SCIE, Q1, IF: 5.2, https://doi.org/10.1016/j.egyr.2023.10.016

- J.Srinu Naick, G. Chandra Sekhar, K.V.R.B. Prasad, K. Hari Krishna. Transformerless , "ANN-Controlled STATCOM-Based Power Quality Improvement for Three Phase DC-AC Boost Inverter in Grid-Connected Solar Photovoltaic Systems", SSRG International Journal of Electrical and Electronics Engineering Vol.10, no.11, pp.76-88, November 2023 ISSN: 2348-8379/ (Scopus Indexed,Q4,https://doi.org/10.14445/23488379/IJEEE-V10I11P108).
- Gatla V.R., Injeti S.K., Kotte S., Polamarasetty P.K., Nuvvula R.S.S., Vardhan A.S.S., Singh M., Khan B, "An Effective Approach for Extracting the Parameters of Solar PV Models Using the Chaotic War Strategy Optimization Algorithm With Modified Newton Raphson Method," IEEE Journal of the Electron Devices Society, (SCIE Scopus Indexed,Q2, I F: 2.3, doi: 10.1109/JEDS.2023.3340445).

Guest Lecture / Events Organized

- Guest Lecture Conducted on "Preparation for Civil Service Examinations" by Mr. V.Bjargav, Assistant Commissioner-State Tax, is alumni of EEE (2011-15 batch), GMRIT. Date 27.11.2023. for 5th Semester Students.
- National Energy Conservation Day was celebrated by the EEE Department of GMRIT on 14.12.2024.

- Guest lecture on "An Innovative Entrepreneurship ideas in Electrical vehicle Technologies" by Mr Nallamilli Venkata Reddy, MS (UK), Founder & CEO,Teckybot and Vihaan Electrix, organized by EEE Department on 29-12-2023.



Guest Lectures / Seminars Delivered at Other Institutions

- Dr. Sthita Prajna Mishra delivered guest lectures at Synergy Institute of Technology in Bhubaneshwar, Orissa, on the 24th and 25th of November 2023, covering the topics "Fundamentals of ANN Model and Programming in Matlab" and "Hands-on Practice for Neural Network Model and its Implementation in Various Renewable Energy," respectively.
- Dr. J.S.V. Siva Kumar delivered a lecture on "Power Electronics and its Applications" on the 14th of November 2023 at Sri Ganapathi Engineering College, Vishakapatnam.
- S. P. Mishra provided a guest lecture for the collaborative teaching program course 'EP0652: Power Generation & Energy Utilization" on the topic "Wind Energy Power Plant" at the School of Electrical Engineering, College of Engineering, Universiti Teknologi MARA, Malaysia, on the 3rd of November 2023.
- Dr. S.P. Mishra delivered a guest lecture on "FDP on MATLAB and its Applications in AI & ML" at Krupajal Engineering College, Bhubaneswar, on the 11th of December 2023.
- Dr. S.P. Mishra delivered a guest lecture for the national-level workshop on "IoT Usage in the Electrical Power Industry" at Gandhi Institute for Education and Technology, Bhubaneswar, on the 27th of December 2023.

Professional Development Activities by Faculty Members

- Dr. N. V. A. Ravikumar completed the online course titled 'The Joy of Computing Using Python,' which had a duration of 12 weeks on the NPTEL platform.
- Dr. T. S. Kishore completed the online course titled 'IBM Machine Learning,' which had a duration of 12 weeks and was offered by Coursera.

Achievement and awards

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