

NEWSLETTER

DEPARTMENT OF
ELECTRICAL & ELECTRONICS ENGINEERING

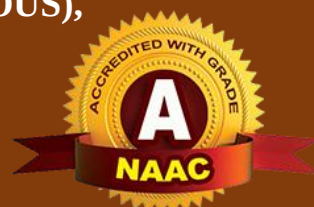
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JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY ANANTAPUR
COLLEGE OF ENGINEERING (AUTONOMOUS),
ANANTHAPURAMU – 515002,
ANDHRA PRADESH, INDIA



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About the Department



The Department of Electrical Engineering was established in 1946 offering B.Tech course (Electrical and Electronics Engineering) with an intake of 30 students, which was enhanced to 50 in the year 1995 and subsequently to 60 in the year 2009. In 1946 the college was established at Guindy, Chennai and was shifted to Anantapur in 1948. The Electrical Engineering Department offers various M.Tech programs. M.Tech, with specialization in “Electrical Power Systems” was started in the year 1971 with an intake of 25. “Power and Industrial Drives” was started in the year 2001 with an intake of 25. “Control Systems” started in the year 2001 with an intake of 25 and “Reliability Engineering” started in the year 2009 which is an interdisciplinary area with an intake of 18. The Department is having research facilities for Ph.D Programme in Electrical Engineering Discipline.

Institutional Vision

- Committed to expanding the horizon and inspiring young minds towards academic excellence.
- Aims at scaling new heights through advanced research and innovative techniques to keep pace with the ever-changing needs of industry and society at large.

Institutional Mission

- To identify and implement, proven, prevention-oriented, forward-looking solutions to critical, scientific and technological problems.
- To make technology a principal instrument of economic development of the country and to improve the quality of life of the people through technological education, innovation, research, training and consultancy.

Department Vision

- Committed to expanding the horizon and inspiring young minds towards academic excellence.
- Aims at scaling new heights in Electrical and Electronics Engineering through advanced research and innovative technologies to keep pace with the changing needs of industry and society at large.

Department Mission

- To identify and implement, proven, prevention oriented, forward looking solutions to critical, scientific and technological problems in Electrical and Electronics Engineering.
- To make technology a principal instrument of economic development of the country and to improve the quality of life of the people through technological education, innovation, research, training and consultancy.

PROGRAM OUTCOMES

- PO 1: **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- PO 2: **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- PO 3: **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- PO 4: **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- PO 5: **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- PO 6: **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- PO 7: **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- PO 8: **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- PO 9: **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- PO 10: **Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- PO 11: **Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- PO 12: **Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

PROGRAM EDUCATIONAL OBJECTIVES

- PEO 1: To excel in professional career and/or higher education by acquiring knowledge in mathematics and Basic sciences, Basic Electrical Sciences, Power Systems, Power Electronics and Electrical Drives.
- PEO 2: To identify the problems in society and design electrical systems appropriate to its solutions using latest technologies that are technically sound, economically feasible and socially acceptable.
- PEO 3: To exhibit professionalism, ethical attitude, communication skills, team work in their profession and adapt to current trends in technology by engaging in continuous professional development.

PROGRAM SPECIFIC OUTCOMES

- PSO 1: The student can apply fundamental knowledge gained during the various courses of the program to analyse and solve the complex problems of Electrical Machines, Control Systems, Instrumentation System, Power Systems and Power Electronic systems.
- PSO 2: The student can design electrical, electronics and allied interdisciplinary projects to meet the demands of industry and to provide solutions to the current real time problems.
- PSO 3: The student can utilize the knowledge regarding recent techniques and sustainable technologies for developing the projects related to Control Engineering, Smart Grid, Power Quality and Advanced Power System protection to engage in lifelong learning

Guest Lectures

Guest Lecture on

“Introduction to Virtual Labs: Revolutionizing Remote Learning”

on 17-08-2024

Date: 17th August 2024 (Saturday)

Time: 2:00 PM to 3:30 PM

Organized by: IEEE Ananthapuramu Subsection

In Collaboration with: IIIT Hyderabad, and IEEE LMA Group.

Resource Person: Dr. V. Sankar

Number of Participants: 56 students from II, III & IV B.Tech, 9 Faculty Members and 2 Research Scholars

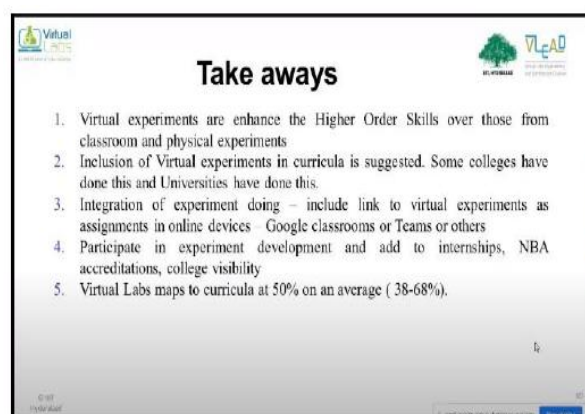
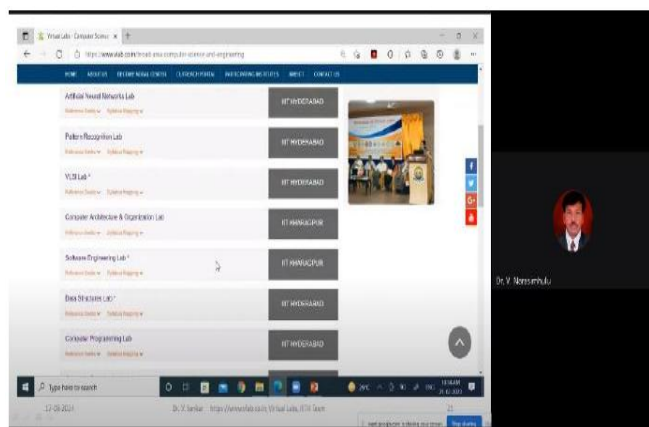
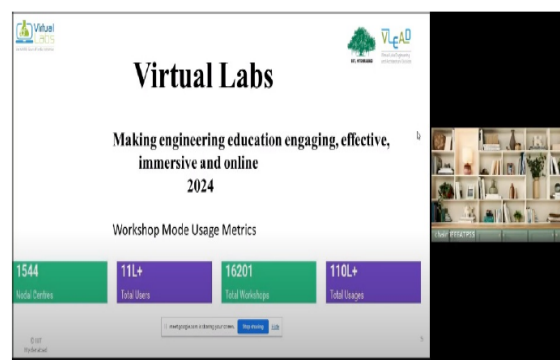
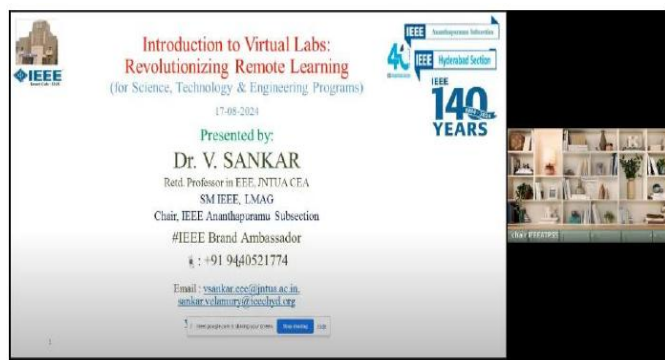
On 17th August 2024, IEEE Ananthapuramu Subsection, in collaboration with IIIT Hyderabad, and IEEE LMA Group, organized a highly informative and engaging webinar/Guest Lecture titled "**Introduction to Virtual Labs: Revolutionizing Remote Learning**". The session, conducted from 2:00 PM to 3:30 PM, was designed to explore the potential of virtual labs in transforming the way education is delivered remotely.

The session was graced by the presence of the esteemed resource person, **Dr. V. Sankar**, an expert in educational technologies and remote learning from IEEE Ananthapuramu Subsection. Dr. Sankar presented a detailed and insightful overview of virtual labs, emphasizing their role in enhancing practical learning experiences for students in a digital environment. He explained how virtual labs provide students with access to hands-on experimentation, simulations, and real-time problem-solving exercises, making education more interactive and effective, especially in fields like engineering, science, and technology.

The key points covered during the session included:

1. **Introduction to Virtual Labs:** An overview of virtual lab technologies and platforms available for remote learning.
2. **Advantages of Virtual Labs:** Benefits such as accessibility, cost-effectiveness, and scalability in comparison to physical labs.
3. **Real-World Applications:** Demonstration of real-life applications of virtual labs in higher education institutions and research.
4. **Implementation Challenges:** Discussion on the technical and infrastructural challenges involved in implementing virtual labs.
5. **Future Prospects:** Insights into the future of remote learning through the integration of virtual labs into mainstream education.

The session concluded with an engaging **Q&A session**, where Dr. V. Sankar addressed questions from the audience regarding the practical deployment of virtual labs and their relevance in various educational contexts. Overall, the event was a resounding success, providing valuable knowledge on the role of virtual labs in revolutionizing remote learning. The participants expressed their appreciation for the detailed insights and the potential impact of virtual labs on the future of education.



Guest Lecture

“Usage of Renewable Energy Sources – Opportunities with Specific Reference to Solar and Wind Energy”

on 28-08-2024

The Department of Electrical and Electronics Engineering at JNTUA College of Engineering, Ananthapuramu, organized a guest lecture on **“Usage of Renewable Energy Sources – Opportunities with Specific Reference to Solar and Wind Energy”** for II, III and IV-year B.Tech students. The session was delivered by **Mr. R. Sunil Kumar, General Manager at AWM Green Energies Pvt. Ltd., Hyderabad**, an expert in renewable energy solutions. The lecture aimed to educate students on the growing opportunities in the renewable energy sector and the latest advancements in solar and wind energy technologies.

During the session, Mr. Sunil Kumar highlighted the importance of transitioning to renewable energy to address environmental concerns and energy security challenges. He provided insights into the working principles, design considerations, and efficiency improvements in solar photovoltaic (PV) systems and wind turbines. The speaker also discussed recent technological advancements, such as bifacial solar panels, battery storage solutions, and offshore wind farms, which are revolutionizing the industry.

The lecture also focused on career prospects in the renewable energy sector, emphasizing the increasing demand for skilled professionals in solar and wind energy project development, maintenance, grid integration, and policy-making. Mr. Sunil Kumar explained the significance of government policies, subsidies, and international collaborations in promoting renewable energy adoption. He encouraged students to enhance their knowledge in solar PV design, wind farm simulation tools, and energy management systems to improve their employability in the green energy sector.

The session concluded with an engaging Q&A session, where students actively participated by asking questions about practical challenges in solar and wind energy implementation, grid stability issues, and future trends in renewable power generation. Faculty members and students expressed their appreciation for Mr. R. Sunil Kumar’s valuable insights, which provided a comprehensive understanding of the opportunities in the renewable energy sector. The lecture inspired students to explore research, internships, and career paths in sustainable energy solutions.



Guest Lecture on
“Industry-Institute Interaction on VLSI Design Trend in India”
on 17-09-2024

The Department of Electrical and Electronics Engineering at JNTUA College of Engineering, Ananthapuramu, organized a guest lecture on **“Industry-Institute Interaction on VLSI Design Trends in India”** on **17th September 2024**. The session was delivered by **Mr. DVR Murthy, Vice President at MOSCHIP Ltd., Hyderabad, and a distinguished technologist in the semiconductor industry**. The lecture aimed to bridge the gap between academic learning and industry expectations in the field of Very Large Scale Integration (VLSI) design, a crucial domain in modern electronics.

During the lecture, Mr. DVR Murthy provided a comprehensive overview of the evolving landscape of VLSI design in India, highlighting the growing demand for chip design engineers, fabrication advancements, and India's role in the global semiconductor industry. He discussed the latest trends, including System-on-Chip (SoC) design, FinFET technology, low-power VLSI design, and AI-driven chip architectures. He also emphasized the importance of hardware security, embedded systems, and the impact of the "Make in India" initiative on semiconductor manufacturing.

The session also focused on career opportunities and skill requirements in the VLSI industry. Mr. Murthy encouraged students to develop strong fundamentals in digital electronics, CMOS technology, Verilog, and hardware description languages (HDLs). He also stressed the importance of gaining hands-on experience with Electronic Design Automation (EDA) tools, FPGA prototyping, and ASIC design methodologies. Furthermore, he guided students on internship opportunities, certifications, and the significance of research collaborations between academia and industry.

The lecture concluded with an interactive Q&A session, where students inquired about challenges in semiconductor fabrication, scope for startups in VLSI, and the impact of AI and IoT on chip design. Faculty members and students expressed their appreciation for Mr. DVR Murthy's insightful session, which provided valuable exposure to current industry practices and emerging trends in semiconductor technology. The event successfully inspired students to explore career paths in VLSI design and semiconductor innovation, reinforcing the need for strong industry-academia collaboration.



10th Death Anniversary of Prof. S. Tiruvengalam

On September 2, 2024, the faculty and students of the Department solemnly observed the death anniversary of the esteemed Prof. S. Tiruvengalam. A revered academician and mentor, Prof. S. Tiruvengalam made significant contributions to the Department, leaving behind a legacy of excellence and inspiration. To honor his memory, a heartfelt tribute was paid by laying a garland on his photograph. Faculty members, students, and staff gathered to express their respect and gratitude for his invaluable contributions.



Faculty members, students, and staff gathered to express their respect to Prof. S. Tiruvengalam

Swachh Andhra Pradesh

The Students, Faculty and Staff has participated in Swachh Andhra Pradesh Mission in alignment with the Swachh Bharat Mission launched by the Government of Andhra Pradesh to fulfill Mahatma Gandhi's vision of 'Swachh Bharat' by eliminating open defecation, eradicating manual scavenging and solid cum liquid waste management activities to maintain cleanliness and hygiene in urban spaces.



Students, Faculty and Staff has participated in Swachh Andhra Pradesh Mission

FACULTY ACTIVITIES

Papers Published:

- Narapureddy Chandana and **R Kiranmayi**, “**Fractional Order IMC-TDD Controller for Integrating Process using Firefly Optimization Algorithm**”, Journal of Systems Engineering and Electronics, Vol. 34, Issue 4, Aug., 2024, pp. no. 84 – 91. DOI:20.14118.jsee.2024.V34I4.1558
- B Kalapni, **M Rathaiah** and **R Kiranmayi**, “**An Improved Performance Fractional Order Controller For Cascade Control System Design**”, Journal of Systems Engineering and Electronics, Vol. 34, Issue 4, Aug., 2024, pp. no. 116 – 121. DOI:20.14118.jsee.2024.V34I4.1562
- Kumpati Nandini, **Dr. M. Rathaiah** and **Dr. R. Kiranmayi**, “**Fractional Order PID Controller for Large Time Delay Integrating Processes Based on PSO Algorithm**”, Journal of Systems Engineering and Electronics, Vol. 34, Issue 4, Aug., 2024, pp. no. 92 – 99. DOI:20.14118.jsee.2024.V34I4.1559
- Pagidela Yamuna and **N. Visali**, “**Optimal Coordination of Hybrid AC/DC Microgrids based on IEEE-12 Bus System: An Analytical Approach**”, International Journal of Electrical and Electronics Research (IJEER), Vol. 12, Sept. 2024, pp. no. 7- 11. <https://doi.org/10.37391/ijeer.12et-evs02>
- Venkataramana Guntreddi, Vasupalli Manoj, **M. Ramasekhara Reddy**, Narendra Kumar Yegireddy, Aakula Swathi and Ramakrishna Raghu, “**Storage Solutions for Sustainable Future: Integrating Batteries, Supercapacitors, and Thermal Storage**”, E3S Web of Conferences, Vol. 547, July 2024. <https://doi.org/10.1051/e3sconf/202454703016>
- **S. Anusha** and **K. Nagabhushanam**, “**Designing of Multifunctional EV Charger Based on Solar Pv Array**”, ShodhKosh: Journal of Visual and Performing Arts, Vol. 5, Issue 7, July 2024. <https://doi.org/10.29121/shodhkosh.v5.i7.2024.4307>
- **S. Anusha** and **K. Nagabhushanam**, “**Designing of Multifunctional EV Charger Based on Solar PV Array**”, ShodhKosh: Journal of Visual and Performing Arts, Vol. 5, Issue 7, July 2024.

Conferences/Workshops / FDP's Attended:

- **Dr. M. Rathaiah** has attended an International Conference on “**Computational Intelligence for Green and Sustainable Technologies**”, at Siddhartha Academy of higher Education during 18th – 19th July, 2024.
- **Dr. M. Rathaiah** has attended a 6 day Faculty Development Program on “**EV Technology: Battery Modeling, Sensors, BMS, Motors, E-Bus Charging**”, during 12th – 17th Aug., 2024 at Vidya Vikas Institute of Engineering and Technology, Mysuru.
- **Dr. M. Rathaiah** has attended a 6 day Faculty Development Program on “**Outcome based education and advanced research in Electrical Engineering**”, during 12th – 17th Aug., 2024 at Haldia Institute of Technology.

- **Smt. Y. Manasa** has attended a 6 day Faculty Development Program on “**Electric Vehicle Technology**”, during 26th – 31st Aug., 2024 organized by AICTE Training and Learning (ATAL) Academy and P.V.K.K. Institute of Technology, Ananthapuramu.
- **Smt. K. Firdose Kowser Ahamadia** has attended a 5 day Faculty Development Program on “**Next-Gen Smart Grid Technologies with Power Electronics Innovations**”, during 15th – 20th July, 2024 at Malla Reddy Engineering College for Women, Hyderabad.

Others:

- **Smt. Y. Manasa** has successfully completed an Edx course on “**Machine Learning at the Edge: A Practical Introduction from Arm**”, on July 2024.

EDITORIAL TEAM

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2. B. Keerthana
3. S. Shafi
4. S. Akhila
5. J. Guru Sainatha
6. M. Mounika

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