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**Mr. P. RAMANJANEYULU,**

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**Mr. T. SAI SREENIVAS PRASAD,**

Assistant Professor, Department of EEE, SRET

**Mr. N. RAVINDRA BABU,**

Assistant Professor, Department of EEE, SRET

**Mr. V. MALLIKARJUNA RAO,**

Assistant Professor, Department of EEE, SRET

**Mr. B. ANIL KUMAR,**

Assistant Professor, Department of EEE, SRET

**Ms. M. SANGEETHA,**

Assistant Professor, Department of EEE, SRET

**Session wise Tentative Schedule:**

Day 1 20.01.2025 Monday	Day 2 21.01.2025 Tuesday	Day 3 22.01.2025 Wednesday	Day 4 23.01.2025 Thursday	Day 5 24.01.2025 Friday	Day 6 25.01.2025 Saturday
6:00PM to 6:30PM Inauguration	Session 3: 6:00PM to 7:30PM	Session 5: 6:00PM to 7:30PM	Session 7: 6:00PM to 7:30PM	Session 9: 6:00PM to 7:30PM	Session 11: 2:00PM to 3:30PM
Session 1: 6:30PM to 8:00PM					Topic: Electric Vehicles & its control features Name of the Expert: Mr. Mohammed Hanneef Papphai Shaik, Lead controls engineer, Jaguar Landrover, UK
Topic: Electric Vehicle charging station allocation – carious techniques Name of the Expert: Dr. S N Deepa Designation & Organization: NIT Calicut	Topic: Evolution of AI in Fog and cloud robotics Name of the Expert: Dr. P. S. Sai Krishna, Associate Professor, IIT Tirupati	Topic: Design of Electric Vehicles Name of the Expert: Mr. N. Chaitanya Kumar Reddy Manager, 2WP-EV, Bosch, Aduodi, Bengaluru	Topic: V2G and G2V Technology in a Micro grid Name of the Expert: Dr. Geno Peter Associate Professor and Deputy Director-CRISD, University of Technology Sarawak, Malaysia	Topic: Digital Twin Technology in Electric Vehicles Name of the Expert: Dr Chockalingam Aravind Vaithilingam Associate Professor School of Engineering, Taylor's University Lakeside Campus, Malaysia	Session 12: 3:30PM to 5:00PM Topic: Electrical Bicycle with self-charging capacity Name of the Expert: Dr. Kumar Reddy Cheepati Associate Professor of EEE, KSRM College of Engineering (Autonomous), Kadapa
Session 2: 8:00PM to 9:30PM	Session 4: 7:30PM to 9:00PM	Session 6: 7:30PM to 9:00PM	Session 8: 7:30PM to 9:00PM	Session 10: 7:30PM to 9:00PM	Session 12: 5:00PM to 6:30PM
Topic: Smart Grid Technologies: Challenges and Opportunities Name of the Expert: Dr. Vijay kumar Krishnasamy Professor, IIITDM Kancheepuram	Topic: Battery Management in electric Vehicles Name of the Expert: Dr. S. Albert Alexander, Professor, VIT Vellore	Topic: Deep learning defined power electronic systems Name of the Expert: Dr. Sreedhar Madichetty, Associate Professor, Ecole Centrale School of Engineering, Mahindra University	Topic: Solar PV Array Emulators Name of the Expert: Sumakesh Mishra Founder, Silov Solutions Pvt Ltd., Technology Business Incubation Unit (TBIU), New Delhi	Topic: Advancements in Lead acid battery Name of the Expert: Dr. Rajashree Samantray Assistant Manager-New Material Development, Technology Division, Amararaja Energy & Mobility, Karakambadi, Tirupati	Topic: Power System Automation Name of the Expert: B. Jagadeesh Deputy Executive Engineer, Meter & Relay Testing, APTRANSCO, Chittoor 6:30PM to 7:30PM Online test & feedback 7:30PM to 8:00PM Valedictory Session

**Important Dates:**

Important Dates will inform to the participants after the approval from AICTE Training and Learning (ATAL) Academy

**Note:** No Registration fee for participants

**Registration Link:**

<https://atalacademy.aicte-india.org/signup>



An AICTE Training and Learning (ATAL)

Academy Sponsored

Online 6 Days Faculty Development Program

(FDP) on

**INTEGRATION OF ARTIFICIAL INTELLIGENCE TECHNIQUES TO ELECTRIC VEHICLE AND SMART GRID**

**Organized by Department of Electrical and Electronics Engineering**

**20<sup>th</sup> to 25<sup>th</sup> January 2025**



**SREE RAMA ENGINEERING COLLEGE**

(AUTONOMOUS)

Approved by AICTE, New Delhi –  
Affiliated to JNTUA, Ananthapuramu  
**Accredited by NAAC with 'A' Grade**  
Rami Reddy Nagar, Karakambadi road,  
Tirupati-517507

### **About the College:**

Sri Mannem Rami Reddy garu, the founder of Sree Rama Educational Society started SREE RAMA ENGINEERING COLLEGE (SRET) with an aim to impart quality education to the student community of backward region of Rayalaseema in the year 2008. His outstanding personality, acumen and magnificent vision have made him a benevolent patron of the institutions. We are very much pleased to introduce ourselves as one of the upcoming Engineering Colleges aspiring to provide high standards of technical education. SRET fosters a vision of educational transformation in keeping pace with the times. It emphasizes a symbiotic relationship among the students, faculty, academic curriculum and industries. The institution offers a holistic approach to technical education, personality development and soft skills.

Sree Rama Engineering College was started with an annual intake of 240 students in 4 branches. At present, the college offers 6 B.Tech programmes and 4 M.Tech. Programmes. The institute offers MBA programme as well. This educational institution aims to provide an academically exhilarating environment allowing the students to enjoy a first class education and social experience. Our college has accredited by NAAC with 'A' grade. The college has conferred with autonomous status by University Grants Commission (UGC) for a period of Ten years from 2024-25 to 2033-34.

### **About the EEE Department:**

The Electrical and Electronics Engineering Department was established in the year 2008. The department is running with well-qualified dedicated and experienced faculty. The faculty guides the students through the annals of this discipline which is multi-faceted covering various fields, to name a few, Electrical Machines, Power Systems, Electrical Measurements, Power Electronics, and Control systems. The present intake of students for B.Tech. Program is 45. The department is equipped with eight well-established labs that give hands-on practical knowledge in the subjects. The laboratories are well equipped and sufficiently staffed for the applications of the theories to satisfy the curiosity of the students. The department consists of Electrical Mechanics Lab, Networks Lab and Control Systems Lab & Power Electronics & Power Systems Lab. The department initiates all student chapter activities of the Institution of Electrical and Electronics Engineers – IEEE, which is a global authority on the standardization of all aspects of Electrical and Electronics Engineering.

### **Department Vision:**

To be the premier center of excellence in Electrical and Electronics Engineering and to produce globally competent engineers with values and ethics.

### **Department Mission:**

- M1. Provide professional skills in operating and design Electrical and electronic equipment.
- M2. Bringing awareness among the students with emerging technologies to meet the dynamic needs of the society
- M3. Develop collaborative research, internship, and entrepreneurial skills through Industry interaction in faculty and students
- M4. Encourage multi-disciplinary activities through research and lifelong learning

### **About the FDP:**

Integrating artificial intelligence techniques into electric vehicles and smart grids can revolutionize energy management. AI can optimize charging schedules, predict energy demand, and enhance grid stability by dynamically adjusting power flow. This synergy enables efficient use of renewable energy, reduces costs, and mitigates environmental impact. Artificial intelligence techniques are crucial in electric vehicles (EVs) and smart grids for several reasons:

- AI optimizes EV charging schedules, grid operations, and energy distribution, maximizing efficiency and minimizing costs for both consumers and utilities.
- By predicting energy demand, balancing loads, and managing renewable energy integration, AI enhances grid stability, reducing the risk of blackouts and ensuring reliable electricity supply.
- AI enables dynamic energy management in EVs, allowing them to adapt charging patterns based on factors like grid demand, energy prices, and vehicle usage, optimizing energy utilization.
- By facilitating the integration of renewable energy sources and promoting energy-efficient practices, AI contributes to reducing greenhouse gas emissions and combating climate change.
- AI processes vast amounts of data from smart meters, sensors, and other sources to provide insights into energy consumption patterns, grid performance, and infrastructure health, enabling informed decision-making.
- AI helps detect and respond to grid disturbances, natural disasters, and cyber threats, enhancing the resilience of energy infrastructure and ensuring continuity of service.
- AI drives innovation in EV technology, grid automation, and energy storage, fostering the development of new solutions to address evolving energy challenges and opportunities.

Overall, artificial intelligence techniques play a pivotal role in shaping the future of transportation and energy systems, making them more intelligent, efficient, and sustainable.

### **Objectives of FDP:**

The objectives of a faculty development program on the integration of artificial intelligence techniques in electric vehicles and smart grids could include is to:

- Equip faculty members with a foundational understanding of artificial intelligence concepts, including machine learning, deep learning, and neural networks.
- Explore the various applications of AI in electric vehicles, such as battery management, predictive maintenance, autonomous driving, and energy optimization.
- Examine the role of AI in smart grid technologies, including demand response, renewable energy integration, grid stability, and energy management.

- Foster collaboration between faculty members from diverse disciplines, such as electrical engineering, computer science, and environmental science, to facilitate interdisciplinary research and teaching approaches.
- Assist faculty members in integrating AI-related topics into existing curriculum and developing new courses or modules focused on AI in electric vehicles and smart grids.
- Stimulate faculty-led research and innovation in AI-enabled electric vehicles and smart grid technologies, encouraging the development of novel algorithms, systems, and methodologies.
- Facilitate interactions between faculty members and industry partners to identify research needs, collaborate on projects, and explore opportunities for technology transfer and commercialization.
- Provide training on effective pedagogical strategies and instructional methods for teaching AI concepts and applications, including hands-on exercises, case studies, and real-world projects.

### **Outcome of the FDP:**

- Enhanced understanding of the principles and applications of artificial intelligence in the context of electric vehicles and smart grids.
- Proficiency in applying AI techniques for optimizing energy efficiency, performance, and reliability in EVs and Smart Grid systems.
- Improved ability to design and implement AI-driven solutions for EV battery management, smart charging, and grid management.
- Increased awareness of cybersecurity challenges and ethical considerations associated with AI integration in EVs and Smart Grids.
- Empowerment to conduct research and development activities in the field of AI-enabled EVs and Smart Grid technologies.
- Strengthened collaboration and networking among faculty members and industry experts for knowledge sharing and interdisciplinary research.
- Alignment of curriculum and teaching methodologies with the latest advancements in AI and its integration in electric vehicles and smart grid systems.
- Contribution to the advancement of sustainable transportation and energy infrastructure through innovative AI-driven solutions.
- Preparation of faculty members to educate and mentor students in the emerging field of AI-enabled electric vehicles and smart grids.

Establishment of partnerships and collaborations with industry stakeholders for technology transfer and commercialization of AI solutions in the electric vehicle and smart grid domains.

### **Targeted Participants:**

The faculty members of the AICTE approved institutions, research scholars, PG scholars, and participants from Government, Industry Bureaucrats / Technicians / Professionals / School Teachers and Staff of Host institutions.

### **Merit Certificates to Participants:**

A test will be conducted by the Program Evaluation Committee (PEC) at the end of the program and the e-certificates will be issued to those participants who have attended all the sessions of the program and have qualified in the test.