POWERING INNOVATION. ENERGIZING TOMORROW.

GOVT. MODEL RESIDENTIAL POLYTECHNIC
SRI SAILAM – 518 102.

GMR POLYTECHNIC, SRISAILAM

ELECTRICAL & ELECTRONICS

DEPARTMENT MAGAZINE

2025 – 26

LEARN.
INNOVATE.
TRANSFORM.

INNOVATE
Ideas that inspire change.

DESIGN
Circuits today, solutions tomorrow.

AUTOMATE
Intelligence in every connection.

ENERGIZE
Sustainable energy for a better world.

CIRCUITS OUR PASSION,
INNOVATION OUR MISSION.

DEPARTMENT MAGAZINE

Department of Electrical & Electronics Engineering
Government Model Residential Polytechnic, Srisailam
2025-26

PROGRAM VISION

To develop Electrical & Electronics Engineering professionals competent to face the global challenges in a Edifying environment conducive to learn technical knowledge, skills blended with ethics and values, to Coordinate and serve to the society for betterment and comfortable living.

PROGRAM MISSION

M1 To provide a competitive learning environment, through a need based curriculum designed in collaboration with industry, conducive for high quality education emphasising on transfer of knowledge and skill development essential for the profession and the society as well.

M2 To nurture higher order leadership qualities and ethics and values in students to enable them to be leaders in their chosen professions while maintaining the highest level of ethics.

M3 To encourage the spirit of inquisition to promote innovation and entrepreneurship strengthened with life skills to sustain the stress.

M4 To foster effective interactions and networking with all the stake holders so as to work towards the growth and sustainability of the society and environment.

About the Department

The Department of Electrical & Electronics Engineering is committed to producing skilled diploma engineers with strong fundamentals in electrical systems, power electronics, and renewable energy. The department is equipped with well-established laboratories including Electrical Machines Lab, Power Electronics Lab, and PLC & SCADA Lab.

Principal's Message

It gives me immense pleasure to present this edition of the Electrical and Electronics Engineering Department Magazine. This publication stands as a reflection of the creativity, innovation, and technical excellence nurtured within our department.

Electrical and Electronics Engineering continues to be a driving force behind modern technological advancements, from sustainable energy solutions to intelligent automation systems. In this rapidly evolving landscape, it is essential for young engineers to not only acquire strong theoretical knowledge but also develop practical skills, critical thinking, and a spirit of innovation.

I am proud to note that our students and faculty members have consistently demonstrated dedication and enthusiasm through their academic achievements, research contributions, and participation in co-curricular and extracurricular activities. This magazine showcases some of these efforts, offering a platform for sharing knowledge, ideas, and experiences.

I commend the editorial team for their hard work in bringing out this publication. I also encourage all students to continue exploring, questioning, and innovating, as these qualities will shape them into competent and responsible engineers of the future.

Wishing the department continued success in all its endeavors.

Message from HOD

It gives me immense pleasure to present this edition of our Department Magazine, which reflects the academic spirit, creativity, and technical excellence of our students and faculty.

Our department has always been committed to nurturing young minds by providing a strong foundation in technical education along with practical exposure. We continuously strive to bridge the gap between theoretical knowledge and real-world applications through innovative teaching methods, workshops, industrial visits, and student-driven projects.

This magazine is a testament to the dedication and hard work of our students, who have contributed articles, project insights, and creative ideas. It also highlights the achievements, activities, and milestones of the department over the academic year. Such initiatives not only enhance technical knowledge but also encourage communication skills, teamwork, and innovation.

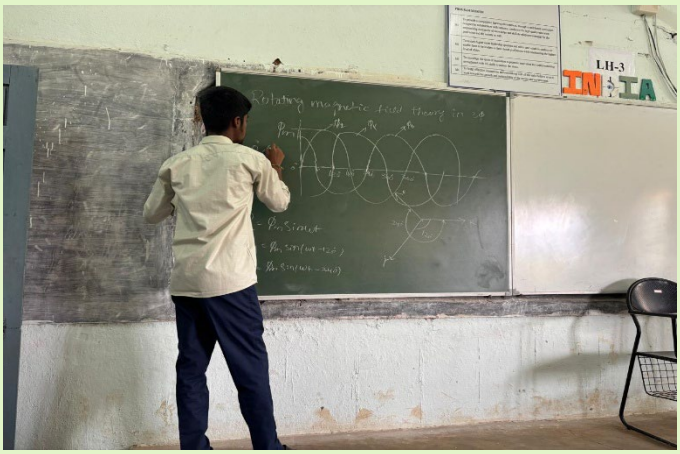
In today's rapidly evolving technological world, it is essential for students to stay updated, think critically, and adapt to new challenges. I encourage all students to make the best use of available resources and continue striving for excellence in their academic and professional pursuits.

I sincerely appreciate the efforts of the editorial team, faculty members, and students who have worked tirelessly to bring out this magazine successfully.

I wish this publication great success and hope it continues to inspire many more in the years to come.

Academic Activities:

Seminar given by II year and I year Students on Electrical Machines and Circuits



Our college organized an engaging seminar presented by I and II year students on the topics of Electrical Machines and Circuits. The event served as an excellent platform for students to enhance their technical knowledge and presentation skills.

During the seminar, students delivered informative presentations on key concepts such as transformers, motors, generators, circuit analysis, and fundamental electrical principles. The sessions were well-structured, with clear explanations supported by diagrams and examples, making the topics easy to understand.

The seminar encouraged active participation, with students confidently sharing their ideas and responding to questions from peers and faculty. It not only strengthened their understanding of core subjects but also helped them develop communication and analytical skills.

Overall, the seminar was a productive learning experience, fostering academic growth and boosting confidence among the students, while promoting a collaborative learning environment within the department.

Two day workshop on Energy Auditing by Sri. CH. Subbanna, Head of Electrical and Electronics Engineering Department, Government Polytechnic, Kavali.

Two-Day Workshop on Energy Auditing

Our college successfully organized a two-day workshop on Energy Auditing, conducted by Sri. CH. Subbanna, Head of the Department of Electrical and Electronics Engineering at Government Polytechnic, Kavali. The workshop aimed to provide students with in-depth knowledge of energy management and conservation techniques.

During the sessions, the resource person explained the fundamentals of energy auditing, including methods of analyzing energy consumption, identifying areas of energy loss, and implementing effective energy-saving measures. Practical examples and case studies were discussed to help students understand real-world applications.

Students actively participated in the workshop, engaging in discussions and gaining hands-on insights into energy efficiency practices. The program also highlighted the importance of sustainable energy use and the role of engineers in reducing energy wastage.

Overall, the workshop was highly informative and beneficial, equipping students with essential skills and knowledge in the field of energy auditing and encouraging them to contribute towards a more energy-efficient future.

Industrial Visit to 110KV substation Sunnipenta, Srisailam

Industrial Visit to 110KV Substation, Sunnipenta (Srisailam)

Our college organized an industrial visit to the 110KV Substation Sunnipenta, providing students with valuable practical exposure to power transmission and distribution systems. The visit was aimed at enhancing students' technical knowledge beyond the classroom.

During the visit, students were introduced to the functioning of a high-voltage substation, including transformers, circuit breakers, isolators, and control panels. The technical staff explained the process of voltage regulation, power distribution, and safety measures followed in the substation.

Students actively engaged with the experts, asking questions and gaining clarity on real-time operations and maintenance practices. The visit helped them understand the critical role substations play in ensuring a stable and efficient electricity supply.

Overall, the industrial visit was highly informative and enriched students' understanding of electrical infrastructure, inspiring them to explore future opportunities in the power and energy sector.

Industrial Visit to Srisailam Right Bank Power House

As part of our academic enrichment program, students of our college had the opportunity to visit the Srisailam Right Bank Power House. The industrial visit aimed to provide practical exposure to power generation processes and enhance students' understanding of real-world engineering applications.

During the visit, students observed the functioning of hydroelectric power generation, including water flow mechanisms, turbine operations, and electricity production. The technical staff at the facility guided the students through various sections of the power house, explaining key concepts and answering queries with clarity.

The visit proved to be highly informative, allowing students to bridge the gap between theoretical knowledge and practical implementation. It also helped them gain insights into the importance of renewable energy resources and sustainable power generation.

Overall, the industrial visit was an enriching and memorable experience, inspiring students to explore advanced concepts in their respective fields and motivating them towards future careers in the energy sector.

Assesment of Student in 6 months internship 220KV substation by Sri. P.Chandram Babu, Head of Electrical and Electronics Engineering Department(FAC)

An assessment session was conducted for students who successfully completed their six-month internship at a 220KV substation. The evaluation was carried out by

Sri. P. Chandram Babu, Head of the Department of Electrical and Electronics Engineering (FAC), to review the students' practical learning and performance.

Constructive feedback was provided to help students improve their skills and prepare for future professional challenges. The session also highlighted the importance of internships in bridging the gap between academic learning and industry requirements.

Overall, the assessment was a valuable exercise that recognized students' efforts and reinforced the significance of practical exposure in shaping competent and industry-ready engineers.

Co-Curricular & Extra-Curricular Activities

Clean and green programme conducted at the college campus and folk dance by students on the occasion of Aayuda pooja

Ayudha Pooja Celebrations and Clean & Green Initiative at Our College

Our college celebrated the auspicious occasion of Ayudha Pooja with great enthusiasm and cultural spirit. As part of the celebrations, students showcased a vibrant folk dance performance, reflecting the rich traditions and cultural heritage associated with the festival. The energetic performance created a lively atmosphere on campus and was widely appreciated by students and faculty alike.

In addition to the cultural activities, a Clean & Green Programme was organized to promote environmental awareness and social responsibility among students. Participants actively took part in cleaning the campus surroundings, collecting waste, and spreading the message of maintaining a clean and eco-friendly environment.

The combined celebration of tradition and responsibility highlighted the importance of preserving cultural values while contributing to a sustainable future. The event not only brought students together in celebration but also encouraged them to take meaningful steps toward community well-being.

Overall, the program was a perfect blend of festivity, teamwork, and social awareness, leaving a positive impact on everyone involved.

Awareness programme on fire accidents by the fire department Srisailam

Our college recently organized a Fire Safety Awareness Program aimed at educating students about emergency preparedness and the importance of fire prevention. The session was conducted by trained safety personnel, who provided practical insights into handling fire-related emergencies effectively.

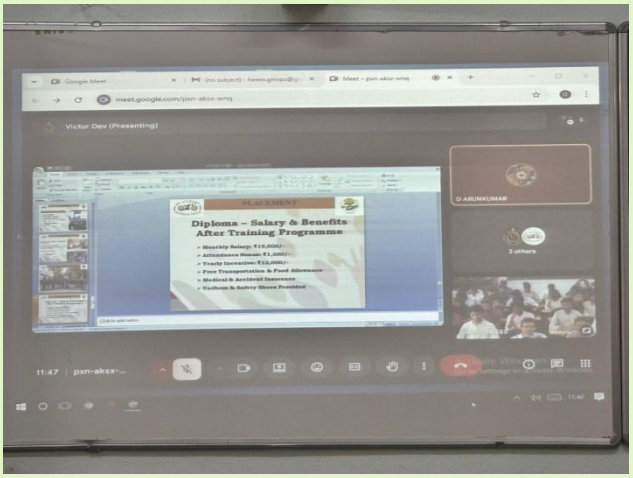
During the program, the officers demonstrated the correct use of fire extinguishers and explained different types of fires and the appropriate methods to control them. Students were actively engaged throughout the session, gaining hands-on understanding and learning essential safety techniques.

The initiative emphasized the importance of staying calm during emergencies, following safety protocols, and being responsible individuals in preventing potential hazards. Such programs play a vital role in equipping students with life-saving skills and creating a safer campus environment.

Overall, the event was informative and impactful, leaving students more aware, confident, and prepared to respond to fire emergencies.

Placement Cell Activities

Online placement drive conducted by Royal Enfield Company for the final year students



Our college had the privilege of hosting a placement drive by Royal Enfield, offering students an excellent opportunity to step into the professional world. The session began with a pre-placement talk, where company representatives introduced students to the organization's legacy, work culture, and career prospects.

Students actively participated in the session, gaining valuable insights into industry expectations, skill requirements, and growth opportunities within the company. The interactive presentation kept the audience engaged, encouraging them to ask questions and better understand the recruitment process.

The placement drive served as a platform for aspiring candidates to showcase their abilities and prepare themselves for future career challenges. It also highlighted the college's commitment to connecting students with reputed organizations and enhancing their employability.

Overall, the event was informative and inspiring, motivating students to pursue their goals with confidence and determination.

Job Achievers' Day Celebration at Our College

Our college proudly celebrated Job Achievers Day to recognize and honor the accomplishments of students who secured placements in reputed organizations. The event was organized in the presence of faculty members and department heads, making it a memorable occasion for all.

During the program, selected students were felicitated and awarded certificates of achievement as a mark of appreciation for their hard work and dedication. The gathering highlighted the success stories of the achievers, inspiring fellow students to strive for excellence in their careers.

Faculty members addressed the students, emphasizing the importance of perseverance, skill development, and continuous learning in achieving professional success. The event also served as a platform to motivate aspiring students to prepare themselves for future placement opportunities.

Overall, the Job Achievers Day celebration was a proud moment for the institution, showcasing the success of its students and reinforcing the college's commitment to academic excellence and career development.

Technical Projects:

Smart Speaking Glove for Speechless and Physically Challenged People

Abstract

The inability of deaf and mute individuals to communicate effectively with the general public creates a major social barrier. While sign language is widely used within their community, it is not easily understood by others. This project proposes a **Smart Speaking Glove**, a gesture-based communication system designed to bridge this gap.

The glove integrates **flex sensors** to detect finger movements, which are interpreted by an embedded microcontroller (ATmega328). The recognized gestures are converted into corresponding text displayed on an LCD and further translated into audible speech using a voice playback module. This system enables seamless and real-time communication between speech-impaired individuals and normal users, enhancing accessibility and independence

Objectives

- Develop a low-cost communication device
- Convert gestures into text and voice
- Improve interaction for speech-impaired individuals

Introduction

Sign language is widely used by deaf and mute individuals but is not understood by everyone. This system bridges that gap using sensors and embedded systems.

Proposed System

The system uses flex sensors to detect finger movement. A microcontroller processes signals and outputs text on an LCD and voice through a speaker.

Components Used

Arduino Uno, Flex Sensors, LCD Display, Voice Module (APR33A3), Speaker, Power Supply

Working Principle

Gesture → Sensor Detection → Microcontroller Processing → Text Display → Voice Output

Advantages

- Easy communication
- Portable
- Real-time output
- Cost-effective

Conclusion

The Smart Speaking Glove enhances communication for speech-impaired individuals and demonstrates the power of embedded systems in assistive technology.

Temple Crowd Control with Automatic Temperature Detection for COVID Safety

Technical Magazine Article

Abstract

The need for effective crowd management and health monitoring has become increasingly important in public places such as temples, shopping malls, and offices. Ensuring controlled entry and maintaining safety standards are essential to prevent overcrowding and potential health risks. This project presents an **automated temple crowd control system integrated with contactless temperature detection**, designed to enhance safety and reduce human intervention.

The proposed system utilizes infrared (IR) sensors to detect the entry and exit of individuals and maintain a real-time count of people inside the premises. A temperature sensor is used to measure the body temperature of each person at the entrance without physical contact. If the measured temperature exceeds a predefined threshold, the system denies entry and triggers an alert. Additionally, the system ensures that the number of people inside the temple does not exceed the permissible limit, thereby maintaining safe occupancy levels.

A microcontroller-based control unit processes sensor inputs and controls the operation of entry mechanisms such as automated doors or barriers. The system also displays relevant information, including the current occupancy count and entry status, on an LCD screen. Audio or visual alerts can be generated to notify users about overcrowding or abnormal temperature conditions.

This automated solution minimizes manual effort, improves operational efficiency, and ensures systematic crowd regulation. It is cost-effective, reliable, and adaptable for various public environments. The system can also be extended with IoT capabilities for remote monitoring and data analysis, making it suitable for modern smart infrastructure applications.

Objectives

- Automatic crowd monitoring
- Contactless temperature detection
- Safe entry control
- Reduced manual effort

Introduction

Maintaining social distancing and monitoring health became critical during COVID-19. This system automates entry control and temperature screening in public places.

System Overview

The system detects entry and exit using IR sensors and monitors temperature using a sensor. Based on these inputs, it controls access and maintains crowd limits.

Components Used

Microcontroller, LM35 Temperature Sensor, IR Sensors, LCD Display, Motor, Voice Module, Power Supply

Working Principle

Person detected → Temperature measured → Decision made → Entry allowed/denied → Count updated

Advantages

- Ensures safety
- Automated system
- Real-time monitoring
- Cost-effective

Conclusion

This project provides a reliable and efficient solution for managing crowds and ensuring safety in public environments.

Automatic Fault Detection and Location in Overhead Lines Using IoT

Technical Magazine Article

Abstract

The rapid growth in electricity consumption has significantly increased the complexity and load on power transmission and distribution systems. As a result, faults in overhead lines have become more frequent, leading to power interruptions, equipment damage, and economic losses. Studies indicate that a major portion of service interruptions in power systems originates from faults in distribution networks.

Traditional fault detection techniques rely heavily on manual inspection and basic fault indicators, which are often inefficient and time-consuming. These methods not only delay fault localization but also increase downtime and operational costs. In modern power systems, there is a growing need for **intelligent, automated, and real-time fault detection mechanisms**.

With the advancement of the **Internet of Things (IoT)** and embedded systems, it is now possible to design smart monitoring systems that can continuously track system parameters, detect abnormalities, and communicate critical information instantly. This project leverages IoT technology to develop an automated fault detection and location system that enhances reliability, reduces response time, and supports the evolution of smart grid infrastructure.

Introduction

Electricity demand growth has increased faults in distribution systems. Traditional methods are slow and inefficient. This system uses IoT and embedded systems for real-time monitoring and faster fault detection.

Working Principle

Sensors monitor voltage/current → Microcontroller detects abnormality → Fault location calculated → Data transmitted via IoT → GPS provides exact location → Alerts generated.

Fault Location Formula

$D = (Zf / Zl) \times L$

Advantages

- Fast detection
- Accurate fault location
- Real-time monitoring
- Reduced manpower

Conclusion

The proposed system improves reliability, reduces downtime, and supports smart grid development.

Energy converts sunlight into electrical energy using photovoltaic cells. It is eco-friendly, renewable, and widely used in modern power systems.

Faculty training programmes


Certificate No. 2026-27-ED-72-328/29282

National Institute of Technical Teachers Training and Research, Chennai

Institution Deemed to be University under Distinct Category, A Centrally Funded Technical Institute
Ministry of Education, Government of India, Taramani, Chennai - 600 113, India.

Certificate of Participation

This is to certify that

V. NIRANJAN

Lecturer in Electrical and Electronics Engineering
Government Model Residential Polytechnic, Srisailam
Nandyal, Andhra Pradesh

221124751

Participated In the Professional Development Programme (PDP) on
(A PDP Attended by Faculty Member is Equivalent to a Faculty Development Programme (FDP))
' ICT in Teaching and Learning '
Conducted by Institute from 05/01/2026 to 09/01/2026 (Notional Learning Hrs: 30)
at NITTTR Extension Centre Vijayawada
Duly Sponsored by the Organisation / Self

09/01/2026 Course Coordinator — Director


Certificate No. 2025-26-EE-08-145/25583

National Institute of Technical Teachers Training and Research, Chennai

Institution Deemed to be University under Distinct Category, A Centrally Funded Technical Institute
Ministry of Education, Government of India, Taramani, Chennai - 600 113, India.

Certificate of Participation

This is to certify that

V. NIRANJAN

Lecturer in Electrical and Electronics Engineering
Government Model Residential Polytechnic, Srisailam
Nandyal, Andhra Pradesh

221124751

Participated In the Professional Development Programme (PDP) on
(A PDP Attended by Faculty Member is Equivalent to a Faculty Development Programme (FDP))
' Developing EEE applications using AR VR and MR '
Conducted by Institute from 28/07/2025 to 01/08/2025 (Notional Learning Hrs: 30)
at NITTTR Chennai
Duly Sponsored by the Organisation / Self

01/08/2025 Course Coordinator — Director


Certificate No. 2025-26-CD-29-219/27014

National Institute of Technical Teachers Training and Research, Chennai

Institution Deemed to be University under Distinct Category, A Centrally Funded Technical Institute
Ministry of Education, Government of India, Taramani, Chennai - 600 113, India.

Certificate of Participation

This is to certify that

K SRIDHAR

Lecturer in Electrical and Electronics Engineering
Government Model Residential Polytechnic, Srisailam
Nandyal, Andhra Pradesh

2411221222

Participated In the Professional Development Programme (PDP) on
(A PDP Attended by Faculty Member is Equivalent to a Faculty Development Programme (FDP))
pplication of Generative AI for Question Paper Setting Integrating with Bloom's Taxonomy Level
Conducted by Institute from 22/09/2025 to 26/09/2025 (Notional Learning Hrs: 30)
at NITTTR Chennai
Duly Sponsored by the Organisation / Self

26/09/2025 Course Coordinator — Director


Certificate No. 2026-27-EE-24-363/30150

National Institute of Technical Teachers Training and Research, Chennai

Institution Deemed to be University under Distinct Category, A Centrally Funded Technical Institute
Ministry of Education, Government of India, Taramani, Chennai - 600 113, India.

Certificate of Participation

This is to certify that

K SRIDHAR

Lecturer in Electrical and Electronics Engineering
Government Model Residential Polytechnic, Srisailam
Nandyal, Andhra Pradesh

2411221222

Participated In the Professional Development Programme (PDP) on
(A PDP Attended by Faculty Member is Equivalent to a Faculty Development Programme (FDP))
' Autonomous Vehicle Training Systems '
Conducted by Institute from 09/02/2026 to 13/02/2026 (Notional Learning Hrs: 30)
at NITTTR Chennai
Duly Sponsored by the Organisation / Self

13/02/2026 Course Coordinator — Director

Our faculty members have actively participated in various training programmes, workshops, and faculty development initiatives throughout the year. These programmes have provided valuable exposure to the latest advancements in their respective fields, along with modern teaching methodologies and innovative practices.

Through their participation, our faculty have enhanced their professional skills, strengthened their subject knowledge, and explored new approaches to make learning more interactive and effective. This commitment to continuous development reflects the institution's dedication to academic excellence.

The knowledge and insights gained from these training programmes are being effectively incorporated into classroom teaching, ultimately benefiting our students by offering them a more enriched and up-to-date learning experience.

Editorial Board