



Koneru Lakshmaiah Education Foundation

(Category -1, Deemed to be University estd. u/s. 3 of the UGC Act, 1956)

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Report of the AP-S COPE STEM Workshop

Conducted on: 16 March 2025 (01:30 PM – 04:00 PM)

Venue: Z.P. High School, Revendrapadu, Andhra Pradesh, India.

Volunteering AP-SSBC: IEEE MTT-S/AP-S/EMC-S Joint Chapter, IEEE Hyderabad Section

In association with: IEEE AP-S Student Branch, KL University.



Scope of the COPE Workshop:

IEEE AP-S COPE (Committee on Promoting Equality) initiative focuses on promoting STEM education among school students, especially in rural and underrepresented communities. The workshop aimed to provide students with exposure to **basic electronics, embedded systems, and real-world technological applications** through interactive learning and project demonstrations.

The initiative also emphasized encouraging innovation, curiosity, and awareness about engineering and technology.

Objectives of the Workshop

- To introduce fundamental STEM and electronics concepts
- To demonstrate real-time electronics and embedded system projects
- To encourage curiosity and innovation among students
- To motivate students towards careers in engineering and technology
- To promote IEEE humanitarian outreach activities.

Program Schedule

S. No.	Time Slot	Activity	Description
1	01:30 PM – 01:40 PM	Welcome & Introduction	The workshop began with a welcome address, followed by an introduction to IEEE, the IEEE Hyderabad Section, and the AP-S COPE initiative. Students were briefed about the purpose of the workshop and the importance of STEM education in real life.
2	01:40 PM – 02:10 PM	Introduction to STEM & Electronics	Students were introduced to basic STEM concepts and fundamental electronics principles. Simple explanations and real-life examples were used to help students understand how technology is applied in everyday life.
3	02:10 PM – 02:50 PM	Project Demonstration	Various electronics projects were demonstrated, including a radar system using ultrasonic sensors, a weather monitoring system, and an RFID-based attendance system. These demonstrations helped students visualize practical applications of engineering concepts.
4	02:50 PM – 03:10 PM	Interactive Session	An interactive session was conducted where students actively participated by asking questions and responding to queries. This session enhanced student engagement, clarified doubts, and encouraged curiosity.
5	03:10 PM – 03:30 PM	Project Handover	The demonstrated projects were handed over to the students to encourage students to explore the projects further and develop skills.
6	03:30 PM – 04:00 PM	Distribution & Closing	Pen kits were distributed to students as a token of encouragement. The workshop concluded with a vote of thanks, acknowledging the support of faculty, organizers, and volunteers.

Workshop Activities

Introduction to IEEE and Workshop Objectives

The workshop commenced with an introduction to IEEE, IEEE Hyderabad Section, and the IEEE AP-S COPE initiative. Students were briefed about the importance of technology in daily life and how engineering contributes to solving real-world problems.

During the session, students were introduced to **basic electronics and embedded systems concepts** through simple explanations and real-life examples. The highlight of the workshop was the **demonstration of innovative electronics projects**, which helped students understand practical applications of STEM concepts.

The following projects were demonstrated:

- **Radar System using Ultrasonic Sensor, Servo Motor, and ESP8266:**
This project illustrated object detection using ultrasonic waves. The servo motor enabled scanning motion similar to a radar system, helping students understand sensing, automation, and real-time monitoring.
- **Weather Monitoring System using MQ-135 Sensor, DHT11 Sensor, I2C LCD, and ESP32:**
This system demonstrated real-time monitoring of environmental parameters such as temperature, humidity, and air quality. Students gained insights into IoT-based environmental sensing systems.
- **Smart Attendance System using RFID and Arduino UNO:**
This project showcased automated attendance tracking using RFID technology. It helped students understand identification systems and microcontroller-based applications.

To enhance hands-on learning, these **projects were handed over to the students**, allowing them to interact with the systems directly and encouraging experimentation and innovation.

An interactive session was conducted where students actively participated by asking questions and sharing their thoughts. This improved their confidence and interest in STEM fields.

As part of the outreach initiative, **pen kits were distributed to the students** to support their education and motivate continuous learning.







Participation Details

Faculty Co-ordinatore: Dr. Venkata Kishore Kothapudi (93127996)

IEEE Volunteers

S.No	Name of the student	Name of the Professional society	Type of Membership	Membership enrolment details
1	Mr. Adapa Abhithesh	IEEE	Undergraduate Student	101834710
2	Mr. Yoga Dasaradi	IEEE	Undergraduate Student	100826864
3	Ms. Divya Sree	IEEE	Undergraduate Student	101868444
4	Mr. Durga Sathish Gollavilli	IEEE	Undergraduate Student	102029053
5	Mr. Subhan Basha	IEEE	Undergraduate Student	101968239
6	Mr. Bala Satya Phaneendra Naidu Billa	IEEE	Undergraduate Student	101844907
7	Mr. Harsha Dintakurthi	IEEE	Undergraduate Student	102180085
8	Mr. Guru Gowtham Chitturi	IEEE	Undergraduate Student	102029490
9	MADHU NIKETH MAGANTI	IEEE	Undergraduate Student	102037589
10	Mangalagiri LOKESH	IEEE	Undergraduate Student	102029455
11	Mr. Sri Ram Kumar Rayana	IEEE	Undergraduate Student	101838090
12	Mr. Kurra Sri Sai Taran	IEEE	Undergraduate Student	101838103
13	KOKKERA VISHNU VARDHAN	IEEE	Undergraduate Student	102029484
14	MEDABOINA KRISHNA	IEEE	Undergraduate Student	102037565
15	VEMULA RITHESH	IEEE	Undergraduate Student	102037553
16	MS. AISHWAIYA ERUKULLA	IEEE	Undergraduate Student	102035059

Student Attendance

Total Students Participated: 214

Class	Students
7th	109
8th	65
9th	40
Total	214