# MAR BASELIOS CHRISTIAN COLLEGE OF ENGINEERING AND TECHNOLOGY, PEERMADE

## DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

# REPORT ON

# IoT WORKSHOP

EEE Department in association with NSS Unit 180 conducted organized a Computer IoT Workshop aimed at introducing students to the basics of computing and the Internet of Things (IoT) On 11/05/2024. The workshop provided hands-on exposure to fundamental concepts, tools, and real-world applications, helping students understand how IoT is shaping the future of technology. It served as a valuable learning experience, especially for beginners, and sparked curiosity among participants to explore further in the field of tech and innovationOBJECTIVE OF THE PROGRAM

### OBJECTIVES OF THE WORKSHOP

- To introduce the concept and applications of the Internet of Things (IoT) in engineering.
- To provide hands-on experience in developing IoT-based systems using microcontrollers and sensors.
- To familiarize students with data acquisition, cloud integration, and remote monitoring techniques.
- To promote innovative thinking and practical problem-solving using modern tools and technologies.

### WORKSHOP CONTENT

- Basics of IoT and its significance in modern electrical systems.
- Introduction to sensors, actuators, and microcontrollers (Arduino/NodeMCU).
- Setting up IoT platforms like Blynk, ThingSpeak, or Firebase.
- Real-time data monitoring and control through Wi-Fi-enabled devices.
- Mini-projects: Home automation, smart energy monitoring, temperature/humidity logging.

### OUTCOMES OF THE WORKSHOP

- Students understood the architecture of IoT systems and components.
- Gained practical skills in sensor integration, coding, and data communication.
- Developed prototypes of basic smart systems relevant to electrical engineering.
- Enhanced teamwork and problem-solving capabilities through collaborative tasks
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### PO,PSO JUSTIFICATION

| PO2 | Problem Analysis | They analyze technical problems to identify appropriate sensors, communication protocols, and controllers. |
|-----|------------------|----------------------------------------------------------|
| PO3 | Design/Development Solutions | of Participants design smart solutions integrating sensors, microcontrollers (e.g., Arduino/ESP), and cloud platforms. |

| PO4 | Conduct Investigations | Involves experimentation, simulation, and debugging of IoT circuits and communication modules. |
| PO5 | Modern Tool Usage | Hands-on sessions involve tools such as Arduino IDE, NodeMCU, Blynk, and cloud platforms like ThingSpeak. |
| PO9 | Individual and Team Work | Encourages collaboration through group-based problem-solving and project building. |
| PO10 | Communication | Participants document their work, present results, and explain designs to peers and instructors. |
| PO12 | Life-long Learning | Introduces students to an emerging area, motivating continued learning in automation and Industry 4.0. |

PSO/Title        Justification

PSO1 – Design, analyze, and test components using modern tools    Students use sensors, embedded systems, and software to build real-time monitoring/control circuits.

PSO2 – Specify and implement control, analog/digital processing systems IoT systems inherently involve signal acquisition, digital communication, and control processes.

PHOTOS
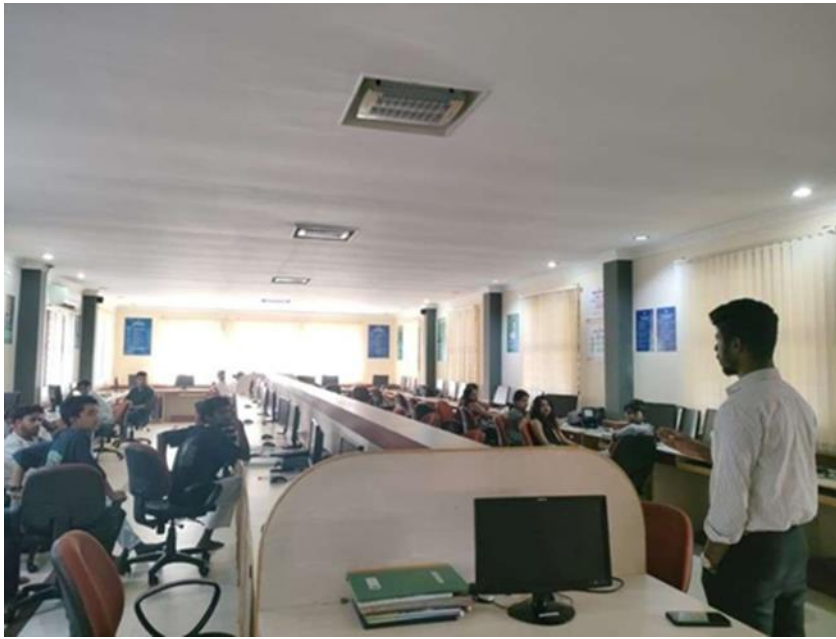
CONCLUSION

 The IoT Workshop proved to be a valuable learning experience for EEE students. It bridged the gap between theory and practical application by equipping students with skills in embedded systems, networking, and smart technologies—key components of modern electrical engineering practice.