



Autonomous College, Permanently Affiliated to Visvesvaraya Technological University, Belagavi
Approved by AICTE & UGC, Accredited by NAAC with 'A' Grade, Accredited by NBA



A Report

Faculty Development Program at AICTE IDEA Lab in association with Department of Mechanical Engineering

A Six day – Faculty Development Program was successfully organized at New Horizon College of Engineering under the initiative of the AICTE IDEA Lab and the Department of Research and Development.

Chief Mentor : Dr. Manjunatha, Principal

Faculty Coordinator : Dr. Revathi V, Dean R&D

Faculty Co Coordinator : Dr. A. Sujin Jose, Associate Professor- R&D/Mech

Program Coordinator : Dr. A. Sujin Jose, Associate Professor- R&D/Mech

Dr. Gopal, Associate Professor- Mech

Date : 20 July 2026 to 25 July 2026

Participants : Faculty members and Lab Instructors of New Horizon College Of Engineering

Trainers : Pragatish and Logesh senior product Engineers of Enthu Technology Solutions India PVT LTD.

Objectives

- Introduce lab instructors and faculty to the fundamentals of Internet of Things (IoT) and Embedded Systems, including sensors, microcontrollers, communication, and automation.
- Train lab instructors and faculty in using IoT and embedded system components for developing and implementing innovative prototypes.
- Provide hands-on experience in designing, programming, interfacing, testing, and troubleshooting IoT and embedded system-based projects.

Overview

- The program aimed to familiarize faculty and lab instructors with the fundamentals and applications of Internet of Things (IoT) and Embedded Systems, enabling them to integrate these technologies into teaching, learning, and innovative project development. Through interactive sessions, practical demonstrations, and hands-on activities, participants were introduced to microcontrollers, sensors, actuators, communication modules, and IoT-based applications.
- The trainers provided practical training on the design, programming, interfacing, and operation of IoT and embedded system components. Participants gained hands-on experience in developing and testing basic IoT and embedded system prototypes. The primary aim was to equip faculty and lab instructors with the necessary technical skills and knowledge to effectively utilize IoT and embedded system technologies for student projects, prototyping, and innovation activities in the AICTE IDEA Lab.

Day 1: 20/07/2026

Trainers: Pragatish and Logesh

Venue : IDEA Lab

The session began with an introduction to the Internet of Things (IoT), focusing on its basic concepts and applications in developing smart and connected systems. The trainer explained how IoT enables devices to collect and exchange data through the internet, allowing systems to monitor, communicate, and respond to real-world conditions.

Participants were introduced to the role of sensors in IoT, which act as the primary components for collecting data from the surrounding environment. Different types of sensors, such as temperature, humidity, light, motion, proximity, and gas sensors, were discussed along with their basic working principles and applications.

Through demonstrations and interactive activities, participants gained an understanding of how sensors are used to sense physical parameters, generate data, and provide inputs to IoT systems for monitoring and automation applications.



Faculty Development Programme

FDP on Internet of Things (IoT) and Embedded Systems

📅 20th to 25th July 2026

📍 AICTE IDEA Lab

👥 NHCE Faculty Members

Trainers from
**Enthu Technology Solutions India Pvt. Ltd.
Coimbatore**

Dr. Gopal K
Coordinator - ME

Dr. Lipsa Dash
Coordinator - SDC

Dr. D V Sreekanth
HoD - ME

Dr. Sujin Jose
Co-Coordinator,
AICTE IDEA Lab

Dr. Revathi V
Coordinator, AICTE IDEA Lab
Dean - R&D

Dr. Manjunatha
Chief Mentor, AICTE IDEA Lab
Principal

Organised By
Department of R&D | Department of Mechanical Engineering | Skill Development Centre

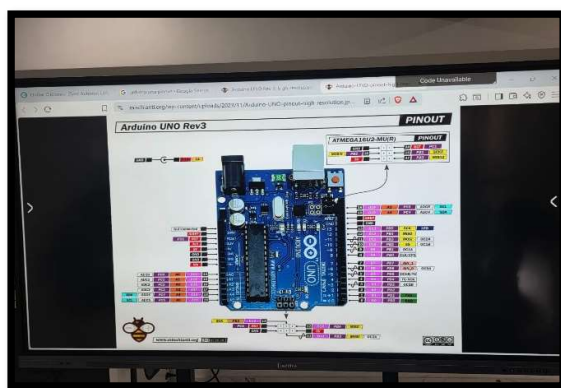
Day 2: 21/07/2026

Trainers: Pragatish and Logesh

Venue : IDEA Lab

On the second day, the session began with detailed theoretical training on Arduino and sensor interfacing for IoT applications. The trainer introduced participants to the Arduino development board, its major components, input and output pins, power supply, and programming environment. The working principles and applications of different sensors, including temperature, humidity, light, motion, proximity, and ultrasonic sensors, were also explained. Participants were guided on how sensors collect information from the surrounding environment and provide data to the Arduino for further processing.

Following the theoretical training, participants engaged in hands-on practical sessions to gain experience in connecting and interfacing different sensors with the Arduino board. They learned to write, upload, and execute basic Arduino programs and observed real-time sensor readings through the serial monitor. Practical exercises were conducted to understand sensor responses and control basic outputs based on the collected data. The hands-on activities helped faculty and lab instructors develop practical skills in Arduino programming, sensor interfacing, data acquisition, and the development of basic IoT prototypes.



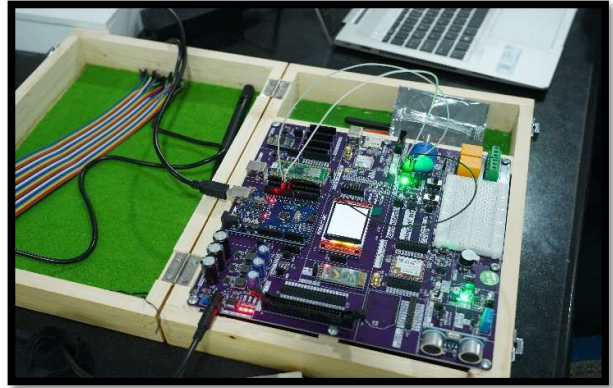
Day 3: 22/07/2026

Trainers: Pragatish and Logesh

Venue : IDEA Lab

On the third day, the session focused on an introduction to Embedded Systems, their basic concepts, applications, and importance in modern technology. The trainer explained embedded systems as specialized computing systems designed to perform specific functions within a larger device or application. Participants were introduced to the basic elements of an embedded system, including microcontrollers, processors, memory, input/output devices, sensors, actuators, power supply, and communication interfaces.

The session also covered the applications and usage of embedded systems in various fields such as automotive systems, industrial automation, consumer electronics, healthcare, smart appliances, robotics, and IoT-based devices. The trainer explained the basic requirements for developing an embedded system, including suitable hardware components, programming software, power management, communication interfaces, and system-specific sensors and actuators. Through demonstrations and discussions, faculty and lab instructors gained an understanding of how embedded systems are designed and used to develop efficient, reliable, and application-specific solutions.



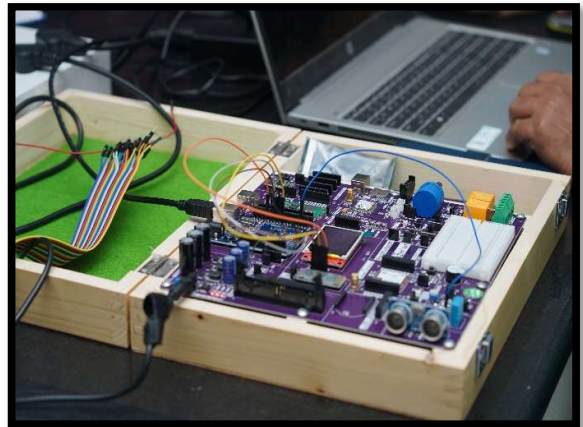
Day 4: 23/07/2026

Trainers: Pragatish and Logesh

Venue : IDEA Lab

On the fourth day, the session focused on practical training in Embedded Systems, building upon the concepts introduced in the previous session. The trainer provided detailed guidance on the selection and use of microcontrollers, input and output devices, sensors, actuators, communication modules, and power supply components required for embedded system development. Participants were introduced to basic programming concepts, hardware interfacing, and the process of developing an embedded system for a specific application.

The training included demonstrations on circuit connections, programming, sensor interfacing, and controlling output devices using embedded system development boards. Participants were guided through the process of writing, uploading, and testing programs while understanding the interaction between hardware and software. Through these training activities, faculty and lab instructors gained practical knowledge of embedded system development and its application in automation, monitoring, control, and IoT-based projects.



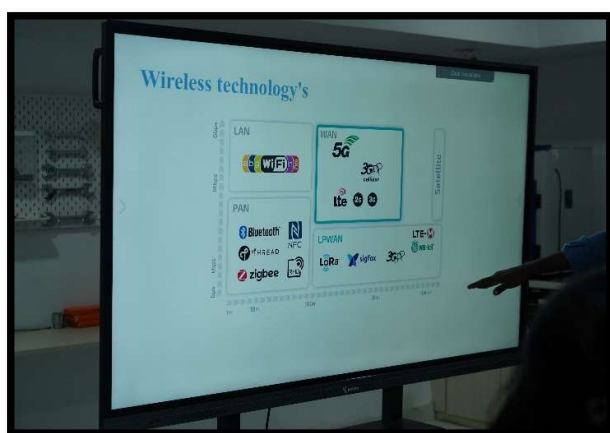
Day 5: 24/07/2026

Trainers: Pragatish and Logesh

Venue : IDEA Lab

On the fourth day, the session focused on long-range communication using embedded systems and cloud-based IoT platforms. The trainer explained the concept of long-range data transmission and its importance in applications where devices need to communicate over greater distances. Participants were introduced to embedded system-based communication modules and their integration with sensors for collecting and transmitting data.

The training then focused on the use of cloud platforms for IoT applications, where participants learned how sensor data can be transmitted, stored, monitored, and visualized remotely. The trainer demonstrated the process of connecting an embedded system to a cloud platform, sending real-time sensor data, and accessing the data through a web-based dashboard. Through hands-on activities, faculty and lab instructors gained practical experience in developing long-range monitoring applications and understanding the role of cloud platforms in building connected IoT systems.



Day 6: 25/07/2026

Trainers: Pragatish and Logesh

Venue : IDEA Lab

On the sixth day, faculty and lab instructors focused on applying the knowledge and skills gained during the previous training sessions. Participants worked on different IoT and Embedded Systems experiments, combining Arduino, sensors, communication modules, and cloud platforms to develop basic working prototypes. They independently explored different ideas, tested various sensor configurations, programmed the systems, and observed the results in real time.

The session provided participants with an opportunity to experiment, troubleshoot, and improve their prototypes based on the concepts learned during the training. Faculty and lab instructors actively discussed their observations, identified technical challenges, and worked on suitable solutions. The hands-on experimentation helped participants strengthen their practical understanding and gain confidence in applying IoT and embedded system technologies for academic projects, laboratory activities, and student innovation.



Outcomes

- Enhanced understanding of Internet of Things (IoT) and Embedded Systems and their applications in real-world scenarios.
- Participants gained experience in sensor interfacing, data acquisition, programming, and development of basic IoT prototypes.
- Developed an understanding of long-range communication and cloud-based IoT platforms for remote monitoring and data visualization.
- Faculty and lab instructors gained practical experience in designing, testing, troubleshooting, and implementing IoT and embedded system experiments.
- Improved technical skills and confidence in applying IoT and Embedded Systems technologies for academic projects, laboratory activities, and student innovation.

Conclusion

The Faculty Development Program on Internet of Things (IoT) and Embedded Systems provided an informative and hands-on learning experience for faculty members and lab instructors. The sessions successfully combined theoretical concepts with practical training, enabling participants to understand IoT fundamentals, Arduino programming, sensor interfacing, embedded systems, long-range communication, and cloud-based platforms. The practical experiments and activities allowed participants to apply their learning, develop basic prototypes, and gain confidence in troubleshooting and implementing IoT-based solutions. Such programs play an important role in strengthening technical skills, promoting innovation, and bridging the gap between academic learning and practical applications, thereby supporting the development of IoT-based projects and innovative solutions within the institution.