

GOVERNMENT COLLEGE OF ENGINEERING, DHARMAPURI – 636 704
DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGG
REPORT ON WORKSHOP CONDUCTED

Workshop Title: Workshop on “Advanced Embedded Systems and IoT Design”.

Duration of Training: Three Days (29-12-2025 to 31-12-2025)

Resource Person: Mr.S. Karthikeyan Director and Mr. B.Arun VijayaKumar ,
eDigiM Research Pvt Ltd, Chennai.

Convenor: Dr.N.Ameena Bibi, HOD/ECE

Co-ordinator Name: Dr.M. Vijayakumar, Assistant Professor/ ECE

No of Students participated: 42

Amount Spent: Rs.42,000 (Approx)

Objective:

To provide participants with practical insights into the fundamentals of IoT and embedded systems. Through hands-on activities, attendees will learn how to design, develop, and deploy IoT solutions using embedded systems. The workshop aims to enhance participants understanding of sensor integration, data processing, and connectivity protocols crucial for IoT applications. Additionally, participants will gain proficiency in programming microcontrollers and utilizing IoT platforms for real-world implementations. Ultimately, the workshop seeks to empower participants with the skills and knowledge necessary to innovate and create IoT-enabled devices and systems.

Program Overview:

A three days workshop on Embedded Systems and IoT Design has been conducted on 29th December 2025 to 31st December 2025 at Department of Electronics and Communication Engineering, Government College of Engineering, Dharmapuri.

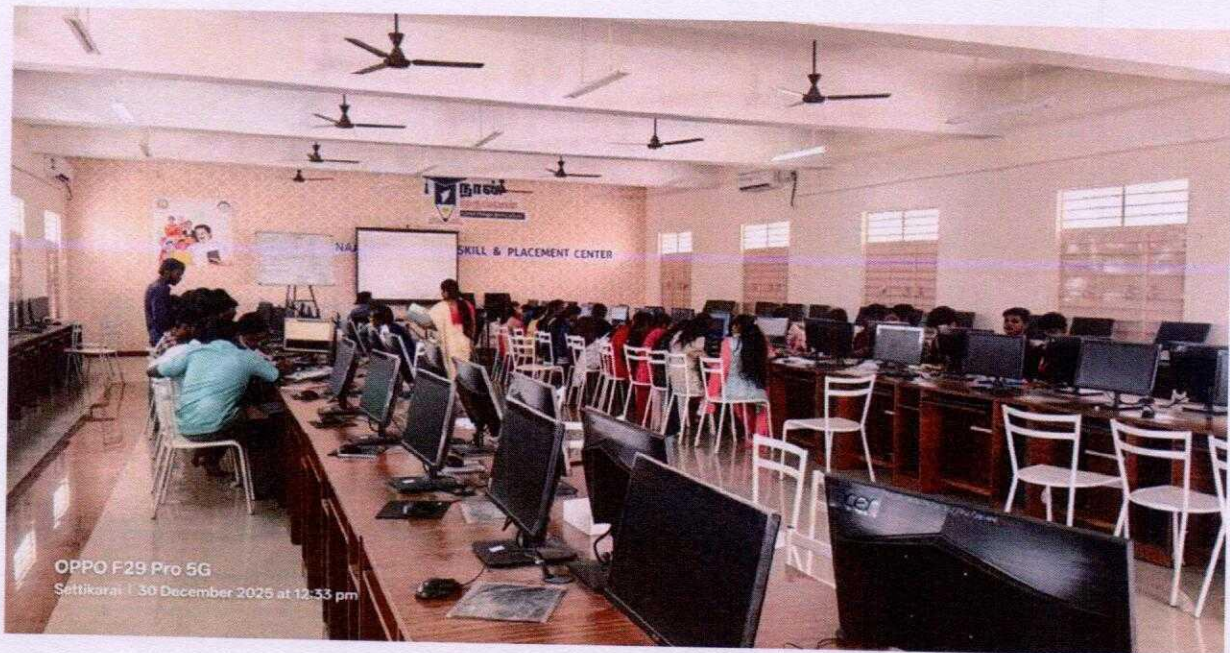
During this training Third year students (59) and Faculties able to know about the Embedded systems & IoT Designing and Hands on Training was provided.



The Resource person covered the topics in **Day 1**: Program such as Structure of a real time Embedded system, Task Assignment and Scheduling, Multiple Tasks and Multiple Processes, Parameters to control led using Microcontroller, Microprocessor and ADC Techniques and tasks using Arduino and Esp32. Hardware design Example and Coding-Single Led lights up, Toggle led, Traffic light led controller. The entire session was interactive session and the Resource person answered many queries raised by the students.

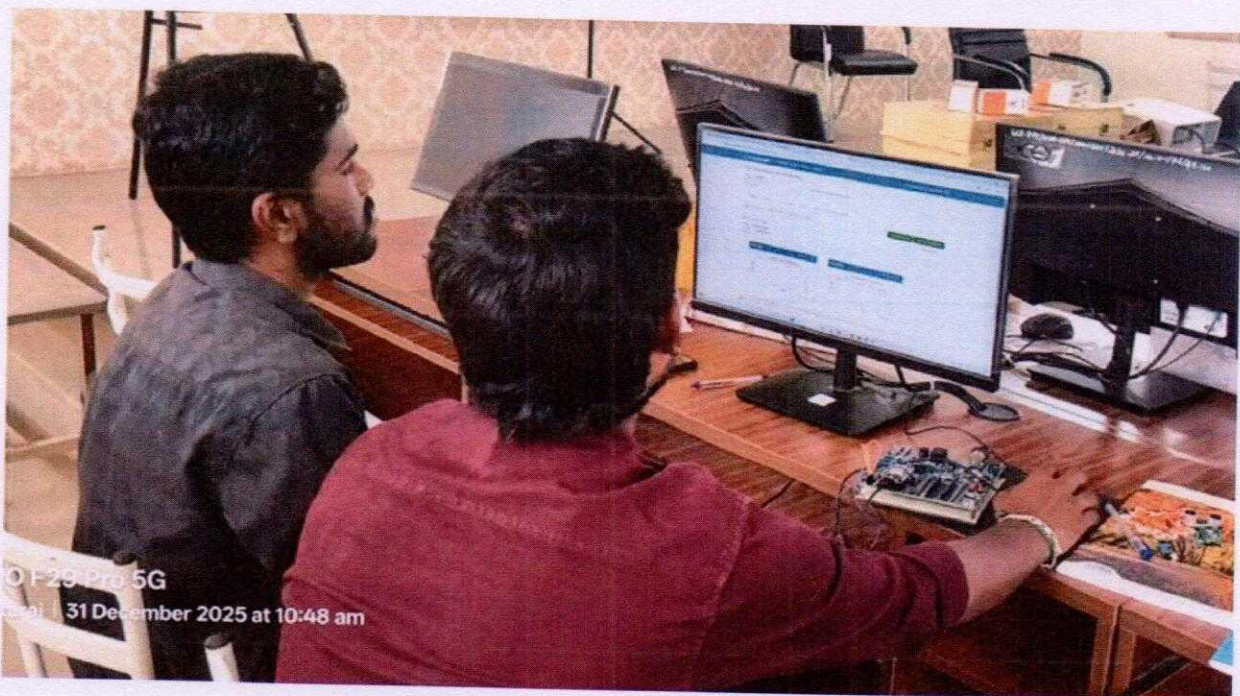
Day 2:

Program the resource person covers the topic such a Pulse width Modulation -duty. Cycle of speed, coding using Potentiometer, LDR, Types of sensors and its coding-IR sensors, ultrasonic sensors and tasks for capacitive touch and resistive touch and highest and lowest range of SAR.



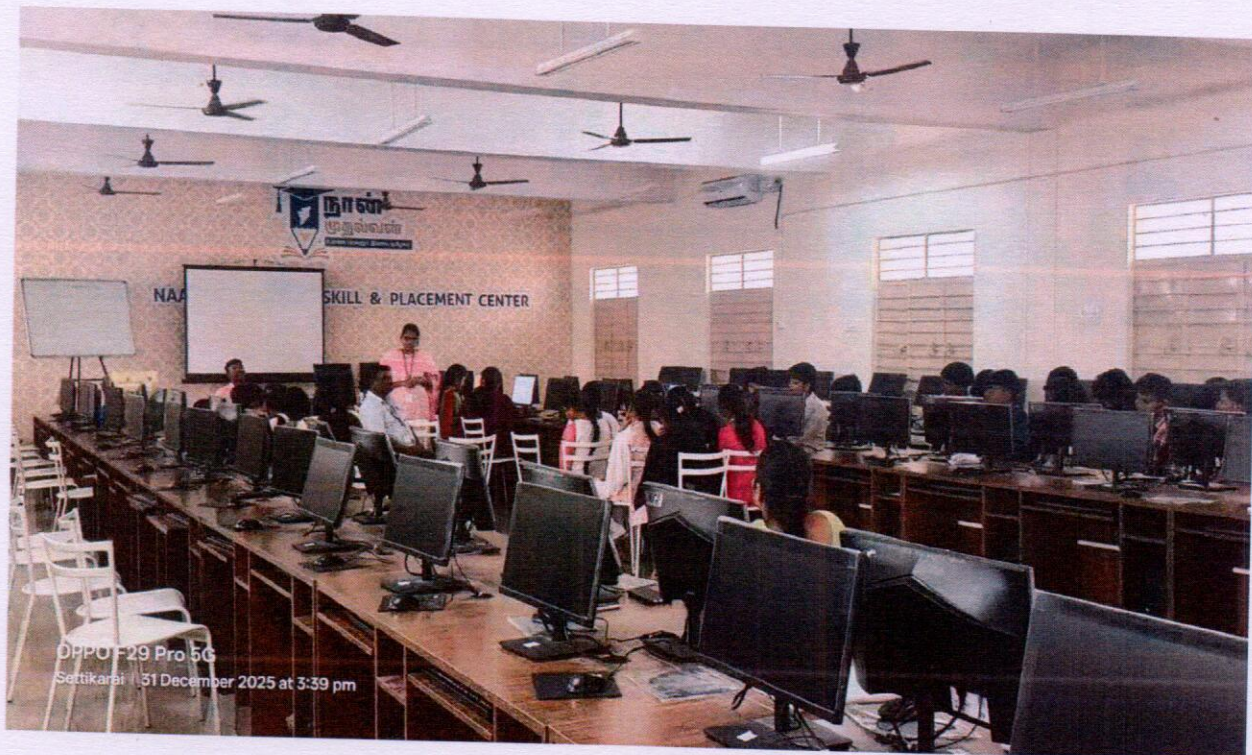
Day 3:

Program began with the student's hands on Training on. Through this day students had in depth knowledge of IOT and Use of Raspberry pi and its installation, Serial communication and its types, I2C OLED display, Stepper motor, servomotor, segment display.



The workshop provided an understanding of the basic usage of Arduino for developing low-cost embedded projects. It explained the application of Arduino in IoT-based systems. Participants learned how to send data to the internet and communicate with cloud platforms. The session included discussions on sensors, relay modules, audio detectors, and microphones, along with their practical applications. It demonstrated how to control devices remotely through cloud connectivity.

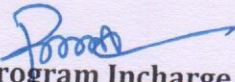
The workshop guided participants in developing mini IoT projects such as a garbage segregator and bin level indicator, color-based product sorting system, image-processing-based fire detection system, vehicle number plate detection system, and a smart lock system. It also covered the physical and logical design of IoT systems and explored their applications in the medical field.

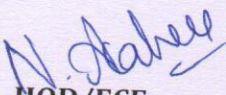


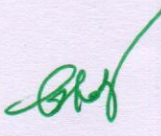
Conclusion:

The workshop concluded with a vote of thanks delivered by Dr.M. Vijayakumar, Assistant Professor/ECE. Feedback collected from participants indicated a high level of satisfaction with the technical content, delivery, and hands-on approach of the sessions.

Overall, the workshop significantly enriched the participants' knowledge and practical skills in Embedded Systems and IoT (Internet of Things) design and development, aligning with the current trends and evolving requirements of the embedded technology, automation, and smart systems industries. The program was successfully conducted with the active support of the **Principal, Head of the Department, and faculty members of the ECE Department, Government College of Engineering, Dharmapuri.**


Program Incharge


HOD/ECE


Principal