



A Report on A Six-days Skill Development Training Program on "EMBEDDED SYSTEM"
Organized by SKILL DEVELOPMENT CELL
In Association with Department of Electronics & Communication Engineering
From 19.02.2024 to 24.02.2024



Organized & submitted by: Dr. V.B. Thurai Raaj, Assistant Professor in EEE & SPOC- APSSDC t-SDI, Madanapalle Institute of Technology & Science
Resource Person: Mr. Mahidhar Banka, Executive -Technical, APSSDC, Vijayawada.
Co-coordinator: Mr. V. Nagaraja, Assistant Professor, Dept. of ECE MITS.
Venue: Siemens Computer Lab (EB:019)
Total Participants: 54-Students and 2-Faculties.
Report Received on 05.03.2024.

Mode of Conduct: Offline

The APSSDC- Skill Development Cell, Madanapalle Institute of Technology and Science, Andhra Pradesh, Madanapalle in association with the Department of Electronics & Communication Engineering, MITS has organized a **six-day skill development program** from 19.02.2024 to 24.02.2024 on **"Embedded System"** In this program, 54 participants participated and made the event grant success.

A summary of the skill development program is as follows:

Dr. P. Ramanathan, Professor & Vice Principal of academics, MITS, and Dr. S. Rajasekaran, Professor & Head of the Dept., Dept. of Electronics & Communication Engineering, welcomed the resource person. Dr. S. Rajasekaran, HOD / Electronics & Communication Engineering, gave a brief introduction to the six-day skill development program. Dr. P. Ramanathan, Professor and Vice Principal-Academics, inaugurated the program with his motivational speech. Dr. V B Thurai Raaj, Assistant Professor in EEE & SPOC-APSSDC t-SDI, introduced the resource person and he handed over the session to the resource person. The 54 students from the second year and two faculty members from the Department of Electronics & Communication Engineering participated in this six-day hands-on training program.

Day-1 (19.02.2024)

Morning session: History and need of Embedded system, Basic components of Embedded system, Programming Language Classification of Embedded System.

Afternoon session: Introduction of Embedded C: Introduction of Embedded C: Introduction to Embedded, Difference between C and Embedded, Programming style, Basic Structure of C program

Day-2 (20.02.2024)

Morning session: Control structures and loops Decision making with if statement. If ...else statement Switch statement, and GOTO statement, FOR statement.

Afternoon session: Introduction to software: software for ARM Corte, Kiel Compiler for ARM 9,8051 microcontroller, Arduino series, Proteus for interfacing of Microcontroller and discrete components simulation.

Day-3 (21.02.2024)

Morning session: Interfacing of LED: Interfacing of LEDs, Interfacing circuit Description of LEDs, Programming of LEDS Interfacing.

Afternoon session: Interfacing of Seven Segment Display: Introduction to 7 Segment Display, Types of 7 Segment Display, Interfacing Circuit Description of 7 Segment Display, Programming of 7 Segment Display Interfacing.

Day-4 (22.02.2024)

Morning session: Interfacing to 16x2 LCD, commands of 16x2 LCD, interfacing circuit Description of 16x2 LCD, Programming of 16X2 LCD

Afternoon session: Timers and counters programming: Introduction to Timers and counters, Difference between Timer and counter, Description of SFR associated with timers and counters, Programming of Timers and counters

Day-5 (23.02.2024)

Morning session: Interfacing of Motors: Introduction to motors, types of motors used in Embedded systems, Programming and controlling of motors in Embedded systems.

Afternoon session: Interfacing of wireless modules' Interfacing Website, Zigbee interfacing website, Bluetooth interfacing website, wifi module interfacing.

Day-6 (24.02.2024)

Morning session: Interfacing of ADC: introduction to ADC, programming of ADC.

Afternoon session: Sensor Interfacing: introduction to sensing devices, Interfacing of IR sensors, Interfacing of temperature SENSOR ADC.

Outcomes: Students can be able to

1. Understanding of the history and significance of embedded systems in various applications.
2. Familiarity with the basic components of embedded systems and their functions.
3. Knowledge of different programming languages used in embedded systems and their classification.
4. Proficiency in Embedded C programming, including understanding the differences from standard C and mastering basic structures.
5. Competence in control structures and loops, including decision-making statements and loops like if-else, switch, and for.
6. Introduction to essential software tools like ARM Cortex, Kiel Compiler, and Proteus for microcontroller programming and simulation.
7. Hands-on experience in interfacing LEDs, 7-segment displays, LCDs, and programming them.
8. Understanding of timers and counters, including their programming and usage in embedded systems.
9. Proficiency in interfacing motors and wireless modules such as Zigbee, Bluetooth, and Wi-Fi for communication.
10. Mastery in interfacing ADCs and various sensors like IR sensors and temperature sensors, along with their programming.

I would like to thank the management and our principal, Dr. C. Yuvaraj, for providing the authorization needed to conduct this program together. I thank you for the timely provision of the requirements and the help provided by Dr. C. Kamal Basha, Professor and Vice Principal-Administration. I express my gratitude to Professor Dr. S. Rajasekaran, HOD/ECE, for his unwavering mentoring in all areas. Finally, I would like to express my gratitude to Dr. S. Rajasekaran, HOD/ECE for the opportunity to run this program.