

Laboratory Name: Embedded Systems and Robotics Laboratory **Venue:** 1402

Laboratory In-Charge: Dr. M.Manimaraboopathy

Qualification: M.E., Ph.D.,

TECHNICAL MANPOWER

Laboratory Assistant: Mr. S.John Alex

Qualification: D.E.C.E

DESCRIPTION ABOUT THE LABORATORY

The lab is equipped with high configured systems, Microprocessor, microcontroller kits such as 8051, Arduino, ARM-based boards), interfacing modules, sensors, and robotic platform.

OBJECTIVES

The objective of the Embedded Systems and Robotics Laboratory is to provide students with practical exposure to the design and development of embedded and robotic systems using the available hardware and software resources. It aims to develop skills in programming, interfacing sensors and actuators, and implementing real-time applications. The laboratory also focuses on bridging the gap between theoretical concepts and practical implementation, encouraging innovation and project-based learning, and preparing students to meet industry requirements through hands-on experience with modern tools and technologies.

LIST OF MAJOR EQUIPMENT

HARDWARE

S.No.	Equipment Name	Quantity
1	Dell VOSTRO 3669 Desktop (7 th Generation i5 INTEL Core, 8GB RAM)	31
2	HP Pro Tower 280 G9 PCI Desktop PC (INTEL CORE i7 COMPUTER)	20
3	ESA MCB 51-2	50
4	8051 Based embedded development board module LGS 51 DVK AND Elevator interface module LGS51,DVK,musical tone interface module LGS51 DVK	30
5	MYRIO hardware to interface with PITSCO	2
6	ARM CORTEX M4	10
7.	8086 MP kits	42
8.	ARDUINO MEGA 2560	20
9.	8051 MC Kits	24

LABORATORY SPACE AND STUDENT

Area of the Laboratory : 160 sq.m

No. of students per session : 60

Batch Size : 3 students / batch

Weekly Utilization Status :38 hours / week

COST OF THE LABORATORY

Total cost of equipment : Rs. 68,89,726/-

COURSE TO CATER

1. Microprocessor and Microcontroller Lab
2. Embedded and Robotics Lab
3. Embedded and OS Device Drivers
4. Embedded C Programming
5. RTOS QNX

HARDWARE

- 1.8086 MP kits
- 2.Node MCU 8266.
3. 8279,8251,Stepper,DC Motor,Elvator,ADC,DAC Interfacing kit.
- 4.8051 Microcontroller.
- 5.ARM cortex M4.
6. Raspberry Pi.
7. Arduino .
8. I5 and I7 Computers

SOFTWARE AND OS

1. Keil MDK
2. Arduino IDE
3. UBUNTU OS)
4. ANSYS(LICENCED)
5. LT spice
6. MP Lab IDE
7. Proteus

ADDITIONAL FACILITY

Raspberry Pi 3B
Spark V Robots
MyRIO-1990



Arm Cortex M4



Stepper motor interface with MCB-51



Working with MyRio