

**Microcontroller and Embedded Programming Laboratory:**

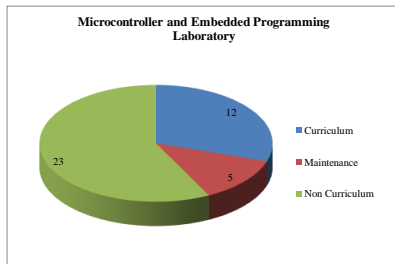
Laboratory In-charge : Ms. M.Lincy Luciana

Technical supporting staff : Mr.V.Aananthan



Figure 6.7 Snapshot of Microcontroller and Embedded Programming Laboratory  
Area of the laboratory: 13.1m X 8.7m = 113.97 sq.m

**Utilization chart**



### Major Equipment:

- 8085 Microprocessor Trainer kit,
- 8085 Interfacing boards.
- 8051 Microprocessor Trainer kit,
- 8051 Interfacing boards.

### Major Experiments:

- 8 bit arithmetic operations using basic 8085 Microprocessor
  - a) Addition b)Subtraction c)Multiplication d)Division
- To develop an interface of keypad with 8051 Microcontroller.
- To implement the design of DC Motor control using PWM method.
- Analysis of interfacing of graphical LCD using PIC Microcontroller.
- Real time clock interfacing with Arduino using I2C bus.

### Utilization of the laboratory:

- Microcontroller and Embedded Programming Laboratory for third year EEE students

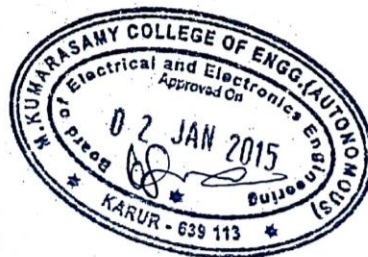
UEE11508P/  
UEE12508P MICROPROCESSORS AND MICROCONTROLLERS LABORATORY 0032

**AIM**

To understand programming using instruction sets of processors & To study various digital & linear controllers

**LIST OF EXPERIMENTS:**

1. 8085 assembly language programming exercises.
2. 8086 assembly language programming exercises.
3. 8051 assembly language programming exercises.
4. Interfacing of USART.
5. Interfacing of D/A and A/D converters.
6. Interface of key board and display using programmable controllers.
7. Interface of programmable timer.
8. Stepper motor control using Microprocessor/Microcontroller.
9. DC motor control using Microprocessor/ Microcontroller.
10. Traffic light controller using 8085.



M.KUMARASAMY COLLEGE OF ENGINEERING (Autonomous) – KARUR 639113

Department	ELECTRICAL AND ELECTRONICS ENGINEERING				R 2016	Semester	VI
Course Code	Course Name	Hours / Week			Credit	Total Hours	Maximum Marks
16EE612	MICROCONTROLLER AND EMBEDDED PROGRAMMING LABORATORY	L	T	P			
		0	0	2	1	30	100

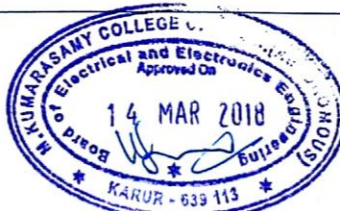
**Course Objective (s):** The purpose of learning this course is to

- Analyze the basic processor and controller functions
- Design the control program for various applications.
- Expose the students to do programming in PIC Microcontroller.
- Analyze the interfacing concepts in 8051 Microcontroller

**Course Outcomes:** At the end of this course, learners will be able to:

1. Illustrate the arithmetic operations that can be implemented using Microprocessors and Microcontroller.
2. Explore the interfacing methods that can be used in Microcontroller.
3. Build a program to interface application oriented control using 8051.
4. Determine the display and voltage control module using PIC Microcontroller.
5. Study and understand the functional block of 8051 Microcontroller and PIC Microcontroller

Exp No.	Name of Experiments
1	8 bit arithmetic operations using basic 8085 Microprocessor a) Addition b) Subtraction c) Multiplication d) Division
2	8/16 bit arithmetic operations using 8051 Microcontroller a) Addition b) Subtraction c) Multiplication d) Division
3	To design the implementation & interfacing of LCD using 8051.
4	To develop an interface of keypad with 8051 Microcontroller.
5	To generate 10 kHz square wave using 8051 Microcontroller.
6	To develop a Program for Transmission and Reception of data through serial port using 8051.
7	To implement the design of DC Motor control using PWM method.
8	To interface PWM based voltage regulator using PIC Microcontroller.
9	Analysis of interfacing of graphical LCD using PIC Microcontroller.
10	Real time clock interfacing with Aurdino using I <sup>2</sup> C bus.



**Proficient Faculty List**

<b>S.NO</b>	<b>FACULTY NAME</b>
1	Dr.J.Uma
2	Dr.M.C.John Wiselin
3	Mr.B.Rajesh Kumar
4	Ms.M.Lincy Luciana
5	Mr.G.N.Sachin Amreiss