

Faculty of Electrical Engineering
B.E. Electrical and Electronics Engineering
(R 2021) Semester – IV

MAJOR EQUIPMENT

Course Code: EE3413 Course Title: MICROPROCESSOR AND MICROCONTROLLER LABORATORY Subject Incharge: S.Poomani		
Sl. No.	Description of Equipment	Required numbers (for batch of 30 students)
1	8085 Trainer kit with power supply	15 nos.
2	8051 Microcontroller trainer kit with power supply	15 nos.
3	ADC and DAC Interface boards	5 nos.
4	Stepper motor interface board	5 nos.
5	Traffic light interface board	5 nos.
6	Software tool for 8085,8051,PIC assemblers loaded in computers	5 nos. PC with software license.

SAFETY MEASURES

- **General Rules of Conduct in Laboratories are displayed.**
 - **Specific Safety Rules for students are displayed.**
 - **Fire Extinguisher and First aid kit are regularly inspected and restocked as necessary.**
 - **All electrical wires are protected by using MCB.**
 - **Well trained technical supporting staff.**
 - **Periodical servicing of the lab equipments.**
 - **Maintaining a clean and organized laboratory.**
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COURSE OBJECTIVES:

- To perform simple arithmetic operations using assembly language program and study the addressing modes & instruction set of 8085 & 8051
- To develop skills in simple program writing in assembly languages
- To write an assembly language program to convert Analog input to Digital output and Digital input to Analog output.
- To perform interfacing experiments with $\mu P8085$
- To perform interfacing experiments with $\mu C8051$.

PROGRAMMING EXERCISES / EXPERIMENTS WITH $\mu P8085$:

1. Simple arithmetic operations: Multi precision addition / subtraction /multiplication / division.
2. Programming with control instructions: Increment / Decrement, Ascending / Descending order, Maximum / Minimum of numbers, Rotate instructions, Hex / ASCII / BCD code conversions.
3. Interface Experiments: A/D Interfacing. D/A Interfacing. Traffic light controller
4. Stepper motor controller interface.
5. Displaying a moving/ rolling message in the student trainer kit's output device.

PROGRAMMING EXERCISES / EXPERIMENTS WITH $\mu C8051$:

6. Simple arithmetic operations with 8051: Multi precision addition / subtraction / multiplication/ division.
7. Programming with control instructions: Increment / Decrement, Ascending / Descending order, Maximum / Minimum of numbers, Rotate instructions, Hex / ASCII / BCD code conversions.
8. Interface Experiments: A/D Interfacing. D/A Interfacing. Traffic light controller
9. Stepper motor controller interface.
10. Displaying a moving/ rolling message in the student trainer kit's output device.
11. Programming PIC architecture with software tools.

TOTAL :45 PERIODS**COURSE OUTCOMES:**

After studying the above subject, students should have the:

- CO1: Ability to write assembly language program for microprocessor.
CO2: Ability to write assembly language program for microcontroller
CO3: Ability to design and implement interfacing of peripheral with microprocessor and microcontroller
CO4: Ability to analyze, comprehend, design and simulate microprocessor based systems used for control and monitoring..
CO5: Ability to analyze, comprehend, design and simulate microcontroller based systems used for control and monitoring.