

**III/IV B. TECH. FIRST SEMESTER
MICROPROCESSORS LAB(Required)**

Course Code : CS 5L2

Credits: 2

Lab Hours: 3 periods/ week

Internal assessment: 25 Marks

Tutorial:-

Semester end examination: 50 Marks

Prerequisites: Microprocessor Programming and Interfacing, Computer Networks

Course Objectives:

1. To introduce to students the basics of microprocessor and microcontroller Programming and their applications.
2. The students will be equipped with the basic knowledge of microprocessor and microcontroller interfacing and their applications.

Course Outcomes:

At the end of this course student will:

CO1) Use tools like MSAM/TSAM/Debugger

CO2) Implement assembly code to perform various arithmetic, logical and string operations

CO3) Implement assembly language programs for microprocessor/microcontroller interfaces

Syllabus

a. Microprocessor 8086:

1. Introduction to MASM/TASM/Debugger
2. Arithmetic operation – Multi byte Addition and Subtraction, Multiplication and Division
–Signed and unsigned Arithmetic operation, ASCII – arithmetic operation.
3. Logic operations – Shift and rotate – Converting packed BCD to unpacked BCD, BCD to ASCII conversion.
 1. String operation and Instruction prefix: Move Block, Reverse string, Inserting, Deleting, Length of the string, String comparison.
4. DOS/BIOS programming: Reading keyboard (Buffered with and without echo)
– Display characters, Strings.

II. Interfacing:

1. 8255-PPI: Write ALP to generate Square wave using PPI.
2. Stepper motor interface with 8086
3. 8279 – Keyboard Display: Write a small program to display a string of characters.
4. 8251 – USART: Write a program in ALP to establish Communication between two processors.

Equipment required for Laboratories:

1. 8086 μ P Kits
2. Interfaces/peripheral subsystems I.
8279-KB/Display
- II. 8255 PPI
- III. 8251 USART IV.
Stepper Motor