MICROPROCESSORS AND MICROCONTROLLERS LAB

Course Code	20EE3652	**Year**	III	**Semester**	II
Course Category	Professional Core	**Branch**	EEE	**Course Type**	Lab
Credits	1.5	**L-T-P**	0-0-3	**Prerequisites**	NIL
Continuous Internal Evaluation:	15	**Semester End Evaluation:**	35	**Total Marks:**	50

Course Outcomes	
Upon successful completion of the course, the student will be able to	
CO1	Develop assembly language programs to perform various arithmetic and logical operations with 8086 micro-processors.(L3)
CO2	Develop assembly language programs to perform various arithmetic and logical operations with 8051 micro-controllers.(L3)
CO3	Experiment various interfacing techniques related to real time applications. (L4)
CO4	Conduct experiments as a team / individual by using equipment available in the laboratory.
CO5	Make an effective report based on experiments.

Strength of correlations (3:High, 2: Medium, 1:Low)														
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3			3	3								2	1
CO2		3		3	3								3	2
CO3		3		3	3								3	2
CO4				3	3				3				2	
CO5										3				

Syllabus		
	List of Experiments	
Any Five Experiments from the following list of experiments		
Expt. No.	**Contents**	**Mapped CO**
1	Introduction to MASM/TASM. Factorial of a number Sum of squares GCD of two numbers	CO1, CO4, CO5
2	Arithmetic operations using 8086 Microprocessors – Multi byte addition and subtraction, Multiplication and Division, ASCII – arithmetic operation	CO1, CO4, CO5
3	Logic operations using 8086 Microprocessors – Shift and rotate – Converting packed BCD to unpacked BCD, BCD to ASCII conversion.	CO1, CO4, CO5
4	Sorting of numbers using 8086 Microprocessors.	CO1, CO4, CO5
5	Arithmetic operations using 8051 Microcontrollers.	CO2,

		CO4, CO5
6	Programs using special instructions like swap, bit/byte, set/reset etc. using 8051 Microcontrollers	CO2, CO4, CO5
7	Reading and Writing on a parallel port.	CO3, CO4, CO5
Any Five Experiments from the following list of experiments		
8	Generation of Sine wave	CO3, CO4, CO5
9	PWM generation	CO3, CO4, CO5
10	Traffic light Interface	CO3, CO4, CO5
11	Stepper Motor Interface	CO3, CO4, CO5
12	8259 – Interrupt Controller	CO3, CO4, CO5
13	Keyboard Interface	CO3, CO4, CO5
14	ADC Interface	CO3, CO4, CO5
15	Serial communication implementation using 8051 Microcontrollers	CO3, CO4, CO5

Learning Resources

Text Books

1. Douglas V. Hall, "Microprocessors and Interfacing", TMH-Revised 2nd edition, 2006.
2. A. K. Ray and K. M. Burchandi, "Advanced Microprocessors and interfacing", Tata McGraw Hill, 2nd edition, 2006.
3. Kenneth J. Ayala, "The 8051 Microcontroller Architecture, Programming and Applications", Thomson Publishers, 2nd Edition, 2004

Reference Books

1. Ajay V. Deshmukh, "Microcontrollers – Theory & Applications", Tata McGraw Hill, 2005.
2. M.A. Mazidi, R.D. McKinlay, J.G. Mazidi, "The 8051 Microcontroller: A Systems Approach", Pearson, 2013.