Moradabad Institute of Technology, Moradabad
Department of Electronics & Communication Engineering
Lecture Plan (2019-2020)

Sub: Microprocessor
Code: KCS-403
L T P
3 1 0

Sem.: 4th
Sec.: A/B/C
Branch: CS

Prerequisites:
1. Knowledge of Logic Devices
2. Knowledge of Programming Basics
3. Knowledge of Motors and Sensors

Content Beyond Syllabus:
1. 8051 Microcontroller & its Programming
2. C Language Programming of Processors
3. Real Time Interfacing with Processors

Course Objectives:

1.	To illustrate the basic concepts of Microprocessors.
2.	To illustrate the architecture of 8085 and 8086 microprocessors.
3.	To introduce the programming and interfacing techniques of 8085 & 8086 microprocessors.
4.	To introduce various peripheral devices.
5.	To understand interfacing of peripheral devices with microprocessor.

Course Outcomes:

Course Outcome (CO)		Bloom's Knowledge Level (KL)
At the end of course , the student will be able to understand		
CO 1	Apply a basic concept of digital fundamentals to Microprocessor based personal computer system.	K_3, K_4
CO 2	Analyze a detailed s/w & h/w structure of the Microprocessor.	K_2,K_4
CO 3	Illustrate how the different peripherals (8085/8086) are interfaced with Microprocessor.	K_3
CO 4	Analyze the properties of Microprocessors(8085/8086)	K_4
CO 5	Evaluate the data transfer information through serial & parallel ports.	K_5

KL- Bloom's Knowledge Level (K1, K2, K3, K4, K5, K6)
K1 – Remember K2 – Understand K3 – Apply K4 – Analyze K5 – Evaluate K6 – Create

Lecture Plan:

S. N.	Topics	Lectures	COs	Coverage Date	Remarks
UNIT - 1					
Introduction					
1.	Microprocessor Evolution and Types	01	CO1, CO2 & CO5		Qualitative Discussion
2.	Microprocessor Architecture and Operation of its Components	01			Qualitative Discussion
3.	Addressing Modes	01			Qualitative Discussion
4.	Interrupts	01			Qualitative Discussion

5.	Data Transfer Schemes	01			Qualitative Discussion
6.	Instruction and Data Flow	01			Qualitative Discussion
7.	Timer and Timing Diagram	01			Qualitative Discussion
8.	Interfacing Devices	01			Qualitative Discussion
UNIT – 2					
8085 Microprocessor					
9.	Pin Diagram and Internal Architecture of 8085 Microprocessor	01	CO3 & CO4		Qualitative Discussion
10.	Registers, ALU, Control & Status	01			Qualitative Discussion **(25%)**
11.	Interrupt and Machine Cycle	01			Qualitative Discussion
12.	Instruction Sets, Addressing Modes	01			Qualitative Discussion
13.	Instruction Formats	01			Qualitative Discussion
14.	Instruction Classification: Data Transfer, Arithmetic Operations	01			Qualitative Discussion
15.	Logical Operations, Branching Operations	01			Qualitative Discussion
16.	Machine Control, Assembler Directives	01			Qualitative Discussion
UNIT – 3					
8086 Microprocessor					
17.	Architecture of 8086 Microprocessor: Register Organization, Bus Interface Unit, Execution Unit	01	CO3 & CO4		Qualitative Discussion
18.	Memory Addressing, Memory Segmentation	01			Qualitative Discussion
19.	Operating Modes	01			Qualitative Discussion
20.	Instruction Sets, Instruction Format	01			Qualitative Discussion **(50%)**
21.	Types of Instructions	03			Qualitative Discussion
22.	Interrupts: Hardware and Software Interrupts	01			Qualitative Discussion
UNIT – 4					
Assembly Language Programming					
23.	Assembly language programming based on intel 8085/8086: Instructions, Data Transfer Operations	01	CO2 & CO4		Qualitative Discussion
24.	Arithmetic, Logic Operations	01			Qualitative Discussion
25.	Branch Operations, Looping	01			Qualitative Discussion
26.	Counting	01			Qualitative Discussion

27.	Indexing	01			Qualitative Discussion
28.	Programming Techniques, Counters and Time Delays	01			Qualitative Discussion **(75%)**
29.	Stacks and Subroutines	01			Qualitative Discussion
30.	Conditional Call and Return Instructions	01			Qualitative Discussion
UNIT – 5					
Peripheral Devices					
31.	Peripheral Devices: 8237 DMA Controller	01	CO3 & CO5		Qualitative Discussion
32.	8255 Programmable Peripheral Interface	01			Qualitative Discussion
33.	8253/8254 Programmable Timer/Counter	02			Qualitative Discussion
34.	8259 Programmable Interrupt Controller	01			Qualitative Discussion
35.	8251 USART	02			Qualitative Discussion
36.	RS232C	01			Qualitative Discussion **(100%)**
Total Lectures Required		**40**			

Text Books:

1. Gaonkar Ramesh S., "Microprocessor Architecture, Programming and Applications with 8085", Penram International Publishing.
3. Ray A. K., Bhurchandi K. M., "Advanced Microprocessors and Peripherals", TMH.
4. Hall D. V.," Microprocessor Interfacing', TMH.
5. Liu and Gibson, "Introduction to Microprocessor", TMH.
6. Brey Barry B., "INTEL Microprocessors", PHI
7. Renu Singh & B.P. Gibson G. A., "Microcomputer System: The 8086/8088 family'', PHI.
8. J.L. Antonakos, "An Introduction to the Intel Family of Microprocessors", Pearson, 1999.

Subject Teacher **Subject Coordinator** **H.o.D**