

Discipline :-	Semester:-	Name of the Teaching Faculty: -
CSE	4th	Aditi Mohapatra
Subject:- Microprocessor & Microcontroller (Th. 3)	No of Days/per Week Class Allotted :-  05	Semester From <u>04.02.2025</u> To:- <u>17.05.2025</u>
Week	Class Day	Theory
1 <sup>st</sup>	1 <sup>st</sup>	Introduction to Microprocessor and Microcomputer & distinguish between them.
	2 <sup>nd</sup>	Concept of Address bus, Data bus, Control bus & System Bus
	3 <sup>rd</sup>	Concept of Address bus, Data bus, Control bus & System Bus
	4 <sup>th</sup>	General Bus structure Block diagram
	5 <sup>th</sup>	Basic Architecture of 8085 (8 bit) Microprocessor
2 <sup>nd</sup>	1 <sup>st</sup>	Basic Architecture of 8085 (8 bit) Microprocessor
	2 <sup>nd</sup>	Basic Architecture of 8085 (8 bit) Microprocessor
	3 <sup>rd</sup>	Basic Architecture of 8085 (8 bit) Microprocessor
	4 <sup>th</sup>	Signal Description (Pin diagram) of 8085 Microprocessor
	5 <sup>th</sup>	Signal Description (Pin diagram) of 8085 Microprocessor
3 <sup>rd</sup>	1 <sup>st</sup>	Signal Description (Pin diagram) of 8085 Microprocessor
	2 <sup>nd</sup>	Register Organizations, Distinguish between SPR & GPR, Timing & Control Module
	3 <sup>rd</sup>	Register Organizations, Distinguish between SPR & GPR, Timing & Control Module
	4 <sup>th</sup>	Stack, Stack pointer & Stack top
	5 <sup>th</sup>	Interrupts:-8085 Interrupts, Masking of Interrupt(SIM,RIM)
4 <sup>th</sup>	1 <sup>st</sup>	Addressing data & Differentiate between one-byte, two-byte & three-byte instructions with examples..
	2 <sup>nd</sup>	Addressing modes in instructions with suitable examples
	3 <sup>rd</sup>	Instruction Set of 8085(Data Transfer, Arithmetic, Logical, Branching, Stack& I/O , Machine Control)
	4 <sup>th</sup>	Instruction Set of 8085(Data Transfer, Arithmetic, Logical, Branching, Stack& I/O , Machine Control)
	5 <sup>th</sup>	Instruction Set of 8085(Data Transfer, Arithmetic, Logical, Branching, Stack& I/O , Machine Control)
5 <sup>th</sup>	1 <sup>st</sup>	Simple Assembly Language Programming of 8085
	2 <sup>nd</sup>	Simple Addition & Subtraction
	3 <sup>rd</sup>	Logic Operations (AND, OR, Complement 1's & 2's) & Masking of bits
	4 <sup>th</sup>	Counters & Time delay (Single Register, Register Pair, More than Two Register)
	5 <sup>th</sup>	Looping, Counting & Indexing (Call/JMP etc).
6 <sup>th</sup>	1 <sup>st</sup>	Code conversion, BCD Arithmetic & 16 Bit data Operation,
	2 <sup>nd</sup>	Block Transfer
	3 <sup>rd</sup>	Compare between two numbers
	4 <sup>th</sup>	Array Handling (Largest number & smallest number in the array)
	5 <sup>th</sup>	Memory & I/O Addressing
7 <sup>th</sup>	1 <sup>st</sup>	Define opcode, operand, T-State, Fetch cycle,..
	2 <sup>nd</sup>	Machine Cycle, Instruction cycle & discuss the concept of timing diagram.
	3 <sup>rd</sup>	Draw timing diagram for memory read machine cycle

8 <sup>th</sup>		(MOV instruction)
	2 <sup>nd</sup>	Draw a neat sketch for the timing diagram for 8085 instruction (MVI, instruction)
	3 <sup>rd</sup>	Draw a neat sketch for the timing diagram for 8085 instruction (LDA instruction)
	4 <sup>th</sup>	Concept of interfacing
	5 <sup>th</sup>	Define Mapping & Data transfer mechanisms - Memory mapping & I/O Mapping
9 <sup>th</sup>	1 <sup>st</sup>	Concept of Memory Interfacing:- Interfacing EPROM & RAM Memories
	2 <sup>nd</sup>	Concept of Address decoding for I/O devices
	3 <sup>rd</sup>	Programmable Peripheral Interface: 8255
	4 <sup>th</sup>	ADC & DAC with Interfacing.
	5 <sup>th</sup>	Interfacing Seven Segment Displays
10 <sup>th</sup>	1 <sup>st</sup>	Generate square waves on all lines of 8255
	2 <sup>nd</sup>	Design Interface a traffic light control system using 8255 , Design interface for stepper motor control using 8255
	3 <sup>rd</sup>	Basic concept of other Interfacing DMA controller USART
	4 <sup>th</sup>	Register Organisation of 8086
	5 <sup>th</sup>	Internal architecture of 8086
11 <sup>th</sup>	1 <sup>st</sup>	Internal architecture of 8086
	2 <sup>nd</sup>	Signal Description of 8086
	3 <sup>rd</sup>	Signal Description of 8086
	4 <sup>th</sup>	General Bus Operation & Physical Memory Organisation
	5 <sup>th</sup>	Minimum Mode & Timings
12 <sup>th</sup>	1 <sup>st</sup>	Maximum Mode & Timings
	2 <sup>nd</sup>	Interrupts and Interrupt Service Routines, Interrupt Cycle, Non-Maskable Interrupt, Maskable Interrupt
	3 <sup>rd</sup>	Instruction Set & Programming: Addressing Modes
	4 <sup>th</sup>	Instruction Set, Assembler Directives and Operators
	5 <sup>th</sup>	Simple Assembly language programming using 8086 instructions.
13 <sup>th</sup>	1 <sup>st</sup>	Distinguish between Microprocessor & Microcontroller
	2 <sup>nd</sup>	8 bit & 16 bit microcontroller
	3 <sup>rd</sup>	CISC & RISC processor
	4 <sup>th</sup>	Architecture of 8051 Microcontroller
	5 <sup>th</sup>	Signal Description of 8051 Microcontrollers
14 <sup>th</sup>	1 <sup>st</sup>	Signal Description of 8051 Microcontrollers
	2 <sup>nd</sup>	Memory Organisation-RAM structure, SFR
	3 <sup>rd</sup>	Registers ,timers ,interrupts of 8051 Microcontrollers
	4 <sup>th</sup>	Addressing Modes of 8051
	5 <sup>th</sup>	Simple 8051 Assembly Language Programming Arithmetic & Logic Instructions ,
15 <sup>th</sup>	1 <sup>st</sup>	JUMP, LOOP, CALL Instructions, I/O Port Programming
	2 <sup>nd</sup>	JUMP, LOOP, CALL Instructions, I/O Port Programming
	3 <sup>rd</sup>	Interrupts, Timer & Counters
	4 <sup>th</sup>	Serial Communication
	5 <sup>th</sup>	Microcontroller Interrupts and Interfacing to 8255

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Teaching Faculty

  
HOD , ETC