GANDHI SCHOOL OF ENGINEERING
BHABANDHA, BERHAMPUR
SESSION PLAN
4TH SEMESTER, BRANCH-INFORMATION TECHNOLOGY

MICROPROCESSOR & MICROCONTROLLER (TH-3)

Name of the Faculty –ER. SANTOSH KUMAR BISHOYEE

Topics to be taken				TOPIC NO.	Actually Taken		
SL NO & CHAPTER	No. of Periods assigned by SCTE & VT	Details of the topics	PLANNING DATE		Details of the topics	ACTUAL DATE	Remarks
1 Microprocessor (Architecture and Programming-8 bit-8085)	15	**1 Microprocessor (Architecture and Programming-8 bit-8085)** 1.1 Introduction to Microprocessor and Microcomputer & distinguish between them. 1.2 Concept of Address bus, data bus, control bus & System Bus 1.3 General Bus structureBlockdiagram. 1.4 Basic Architecture of 8085 (8 bit) Microprocessor 1.5 Signal Description (Pin diagram) of 8085 Microprocessor 1.6 Register Organizations,Distinguish between SPR & GPR, Timing & Control Module, 1.7 Stack, Stack pointer & Stack top. 1.8 Interrupts:-8085 Interrupts, Masking of Interrupt(SIM,RIM)	06-02-2025 TO 22-02-2025	1 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8	1 Microprocessor (Architecture and Programming-8 bit-8085) INTRODUCTION 1.1 Introduction to Microprocessor and Microcomputer & distinguish between them. 1.2 Concept of Address bus, data bus, control bus & System Bus 1.3 General Bus structureBlockdiagram. General Bus structureBlockdiagram. 1.4 Basic Architecture of 8085 (8 bit) Microprocessor 8085 (8 bit) Microprocessor 1.5 Signal Description (Pin diagram) of 8085 Microprocessor (Pin diagram) of 8085 Microprocessor 1.6 Register Organizations,Distinguish between SPR & GPR, Timing & Control Module, 1.7 Stack, Stack pointer & Stack top. 1.8 Interrupts:-8085 Interrupts, Masking of Interrupt(SIM,RIM)	06-02-2025 07-02-2025 08-02-2025 10-02-2025 11-02-2025 12-02-2025 13-02-2025 14-02-2025 15-02-2025 17-02-2025 18-02-2025 19-02-2025 20-02-2025 21-02-2025 22-02-2025	

2 Instruction Set and Assembly Language Programming	15	**2 Instruction Set and Assembly Language Programming** 2.1 Addressing data & Differentiate between one-byte, two-byte &three-byte instructions with examples. 2.2 Addressing modes in instructions with suitable examples. 2.3 Instruction Set of 8085(Data Transfer, Arithmetic, Logical, Branching, Stack& I/O , Machine Control) 2.4 Simple Assembly Language Programming of 8085 2.4.1 Simple Addition & Subtraction 2.4.2 Logic Operations (AND, OR, Complement 1's & 2's) & Masking of bits 2.4.3 Counters & Time delay (Single Register, Register Pair, More than Two Register) 2.4.4 Looping, Counting & Indexing (Call/JMP etc). 2.4.5 Stack & Subroutinesprogrames. 2.4.6 Code conversion, BCD Arithmetic & 16 Bit data Operation, Block Transfer. 2.4.7 Compare between two numbers 2.4.8 Array Handling (Largest number & smallest number in the array) 2.5 Memory & I/O Addressing,	24-02-2025 TO 18-03-2025	2 2.1 2.2 2.3 2.4 2.4.1 2.4.2 2.4.3 2.4.4 2.4.5 2.4.6 2.4.7 2.4.8 2.5	2 Instruction Set and Assembly Language Programming INTRODUCTION 2.1 Addressing data & Differentiate between one-byte, two-byte &three-byte instructions with examples. 2.2 Addressing modes in instructions with suitable examples. 2.3 Instruction Set of 8085(Data Transfer, Arithmetic, Logical, Branching, Stack& I/O , Machine Control) 2.4 Simple Assembly Language Programming of 8085 2.4.1 Simple Addition & Subtraction 2.4.2 Logic Operations (AND, OR, Complement 1's & 2's) & Masking of bits 2.4.3 Counters & Time delay (Single Register, Register Pair, More than Two Register) 2.4.4 Looping, Counting & Indexing (Call/JMP etc). 2.4.5 Stack & Subroutinesprogrames. 2.4.6 Code conversion, BCD Arithmetic & 16 Bit data Operation, Block Transfer. 2.4.7 Compare between two numbers 2.4.8 Array Handling (Largest number & smallest number in the array) 2.5 Memory & I/O Addressing,	24-02-2025 25-02-2025 28-02-2025 01-03-2025 03-03-2025 04-03-2025 06-03-2025 07-03-2025 08-03-2025 10-03-2025 11-03-2025 12-03-2025 13-03-2025 17-03-2025 18-03-2025	
3 TIMING DIAGRAMS	7	**3 TIMING DIAGRAMS.** 3.1 Define opcode, operand, T-State, Fetch cycle, Machine Cycle, Instruction cycle & discuss the concept of timing diagram. 3.2 Draw timing diagram for memory read, memory write, I/O read, I/O write machine cycle. 3.3 Draw a neat sketch for the timing diagram for 8085 instruction (MOV,MVI,LDA instruction).	20-03-2025 TO 29-03-2025	3 3.1 3.2 3.3	3 TIMING DIAGRAMS. INTRODUCTION 3.1 Define opcode, operand, T-State, Fetch cycle, Machine Cycle, Instruction cycle & discuss the concept of timing diagram. 3.2 Draw timing diagram for memory read, memory write, I/O read, I/O write machine cycle. 3.3 Draw a neat sketch for the timing diagram for 8085 instruction (MOV,MVI,LDA)	20-03-2025 21-03-2025 22-03-2025 24-03-2025 25-03-2025 26-03-2025 29-03-2025	

4 Microprocessor Based System Development Aids	11	**4 Microprocessor Based System Development Aids** 4.1 Concept of interfacing 4.2 Define Mapping &Data transfer mechanisms - Memory mapping & I/O Mapping 4.3 Concept of Memory Interfacing:- Interfacing EPROM & RAM Memories 4.4 Concept of Address decoding for I/O devices 4.5 Programmable Peripheral Interface: 8255 4.6 ADC & DAC with Interfacing. 4.7 Interfacing Seven Segment Displays 4.8 Generate square waves on all lines of 8255 4.9 Design Interface a traffic light control system using 8255. 4.10 Design interface for stepper motor control using 8255.	02-04-2025 TO 15-04-2025	4 4.1 4.2 4.3 4.4 4.5 4.6 4.7 4.8 4.9 4.1	4 Microprocessor Based System Development Aids INTRODUCTION 4.1 Concept of interfacing 4.2 Define Mapping &Data transfer mechanisms - Memory mapping & I/O Mapping 4.3 Concept of Memory Interfacing:- Interfacing EPROM & RAM Memories 4.4 Concept of Address decoding for I/O devices 4.5 Programmable Peripheral Interface: 8255 4.6 ADC & DAC with Interfacing. 4.7 Interfacing Seven Segment Displays 4.8 Generate square waves on all lines of 8255 4.9 Design Interface a traffic light control system using 8255. 4.10 Design interface for stepper motor control using 8255.	02-04-2025 03-04-2025 04-04-2025 05-04-2025 07-04-2025 08-04-2025 09-04-2025 10-04-2025 11-04-2025 12-04-2025 15-04-2025	
5 Microprocessor (Architecture and Programming-16 bit-8086)	12	**5 Microprocessor (Architecture and Programming-16 bit-8086)** 5.1 Register Organisation of 8086 5.2 Internal architecture of 8086 5.3 Signal Description of 8086 5.4 General Bus Operation& Physical Memory Organisation 5.5 Minimum Mode &Timings, 5.6 Maximum Mode &Timings, 5.7 Interrupts and Interrupt Service Routines, Interrupt Cycle, Non-Maskable Interrupt, Maskable Interrupt 5.8 8086 Instruction Set & Programming: Addressing Modes, Instruction Set, Assembler Directives and Operators, 5.9 Simple Assembly language programming using 8086 instructions.	16-04-2025 TO 30-04-2025	5 5.1 5.2 5.3 5.4 5.5 5.6 5.7 5.8 5.9	5 Microprocessor (Architecture and Programming-16 bit-8086) INTRODUCTION 5.1 Register Organisation of 8086 5.2 Internal architecture of 8086 5.3 Signal Description of 8086 5.4 General Bus Operation& Physical Memory Organisation 5.5 Minimum Mode &Timings, 5.6 Maximum Mode &Timings, 5.7 Interrupts and Interrupt Service Routines, Interrupt Cycle, Non-Maskable Interrupt, Maskable Interrupt 5.8 8086 Instruction Set & Programming: Addressing Modes, Instruction Set, Assembler Directives and Operators, 5.9 Simple Assembly language programming using 8086 instructions.	16-04-2025 17-04-2025 19-04-2025 21-04-2025 22-04-2025 23-04-2025 24-04-2025 25-04-2025 26-04-2025 28-04-2025 29-04-2025 30-04-2025	

6 Microcontroller (Architecture and Programming-8 bit)	15	**6 Microcontroller (Architecture and Programming-8 bit):-**	01-05-2025 TO 18-05-2025	6	6 Microcontroller (Architecture and Programming-8 bit):- INTRODUCTION	01-05-2025	
		6.1 Distinguish between Microprocessor & Microcontroller		6.1	6.1 Distinguish between Microprocessor & Microcontroller	02-05-2025	
		6.2 8 bit & 16 bit microcontroller		6.2	6.2 8 bit & 16 bit microcontroller	03-05-2025	
		6.3 CISC & RISC processor		6.3	6.3 CISC & RISC processor	06-05-2025	
		6.4 Architectureof8051Microcontroller		6.4	6.4 Architecture of 8051 Microcontroller	07-05-2025	
		6.5 Signal Description of 8051 Microcontrollers		6.5	6.5 Signal Description of 8051 Microcontrollers	08-05-2025	
		6.6 Memory Organisation-RAM structure, SFR		6.6	6.6 Memory Organisation-RAM structure, SFR	09-05-2025	
		6.7Registers,timers,interruptsof8051Microcontrollers		6.7	6.7Registers,timers,interruptsof8051Microcontrollers	10-05-2025	
		6.8 Addressing Modes of 8051		6.8	6.8 Addressing Modes of 8051	11-05-2025	
		6.9 Simple 8051 Assembly Language Programming Arithmetic& Logic Instructions , JUMP, LOOP, CALL Instructions, I/O Port		6.9	6.9 Simple 8051 Assembly Language Programming Arithmetic& Logic Instructions , JUMP, LOOP, CALL Instructions, I/O Port	14-05-2025	
		6.10 Interrupts, Timer & Counters		6.1	6.10 Interrupts, Timer & Counters	16-05-2025	
		6.11 Serial Communication		6.11	6.11 Serial Communication	17-05-2025	
		6.12 Microcontroller Interrupts and Interfacing to 8255		6.12	6.12 Microcontroller Interrupts and Interfacing to 8255	18-05-2025	

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