CS317: Microprocessor and Interfacing	L	T	P	Nil
	3	1	0	

Course Objective: To introduce fundamentals of microprocessor architecture, programming and system design.

S. No.	Course Outcomes (CO)

CO1	Understand microprocessor evolution, architecture, and the operation of its components, including addressing modes and interrupts.
CO2	Analyze and utilize the architecture and instruction set of the 8085 microprocessor, including data transfer, arithmetic, and logical operations.
CO3	Comprehend the architecture of the 8086 microprocessor, including memory segmentation, operating modes, and interrupts.
CO4	Develop and debug assembly language programs for Intel 8085/8086, focusing on instructions, data transfer, and control flow.
CO5	Interface and configure peripheral devices using components such as DMA controllers, programmable interfaces, timers, and USART.

S. No	Contents	Contact Hours
UNIT 1	Introduction: Microprocessor evolution and types, microprocessor architecture and operation of its components, addressing modes, interrupts, and data transfer schemes, instruction and data flow, timer and timing diagram. Interfacing devices. Architectural advancement of microprocessor	**8**
UNIT 2	8-bit Microprocessors: Pin diagram and internal architecture of 8085 microprocessor, registers, ALU, interrupt and machine cycle. Instruction sets. Addressing modes. Instruction formats Instruction Classification: data transfer, arithmetic operations, logical operations, branching operations, machine control and assembler directives. Counters and Time Delays.	**10**
UNIT 3	16-bit Microprocessor: Architecture of 8086 microprocessor: register organization, bus interface unit, execution unit, memory addressing, memory segmentation. Operating modes. Instruction sets, instruction format, Types of instructions. Interrupts: hardware and software interrupts.	**10**
UNIT 4	Programming: Assembly language programming based on Intel 8085/8086. Instructions, data transfer, arithmetic, logic, branch operations, looping, counting, indexing, programming techniques, counters and time delays, stacks and subroutines, conditional call and return instructions	**10**
UNIT 5	Peripheral Interfacing: Peripheral Devices: 8237/8257 DMA Controller, 8255 programmable peripheral interface, 8253/8254programmable timer/counter, 8259 programmable interrupt controller, 8251 USART and RS232C.	**10**
	Total	**48**