EIT201	Digital Electronics and Microprocessors	L	T	P	C
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Prerequisite	EEE101				
Objectives	• To learn logic circuits and converters • To introduce the components of a digital system • To understand microprocessor architecture and assembler instruction formats				
Outcomes	Understanding digital electronics and circuits, computers and microprocessors				
Unit 1	Combinational Logic Circuits				10
	Review of number systems - Logic gates: NAND, NOR gate as universal building blocks - Simplification of four-variable Boolean equations using Karnaugh maps - Half adder, Full adder, Half subtractor, Full subtractor - 4-bit parallel adder and subtractor - 3-bit binary decoder - Decimal to BCD encoder – 8-to-1 multiplexer, 1-to-8 Demultiplxer				
Unit 2	Sequential Logic Circuits				8
	Flip-flops: SR flip-flop, Edge-triggered flip-flops (SR,D,JK and T), Master-slave JK flip-flop - 4-bit binary asynchronous and synchronous counter - Decade counter (asynchronous and synchronous) - Shift registers (SISO,SIPO,PISO,PIPO) - Ring counter – Memories (RAM, ROM, EPROM, FLASH)				
Unit 3	D/A and A/D Converters				9
	Ladder type D/A converter - Dual slope A/D converter - Successive approximation A/D converter - Study of DAC0800 and ADC0809 chips				
Unit 4	The 8086 Microprocessor Architecture and Instruction Set				11
	Pin diagram - CPU architecture - Memory segmentation - Internal operations - Addressing modes - Instruction formats - Assembler instruction formats: Data transfer instructions, Arithmetic instructions, Logical instructions, Branch-and-loop instructions – Interrupts: Software and Hardware interrupts, Software interrupt programming				
Unit 5	Peripheral Chips				7
	8255 (PPI), 8254 (Timer), 8257 (DMA), 8259 (PIC), 8251 (USART)				
Text Books	1. Thomas L Floyd, Digital Fundamentals, Universal Books, New Delhi 2. Douglas V. Hall, Microprocessors and Interfacing, TMH				
References	1. Yu-Cheng Liu, Glenn A. Gibson, Microcomputer Systems: The 8086/8088 Family, PHI 2. Barry B. Brey, Microprocessors and Peripherals, CBS Publishers & Distributors, Delhi 3. R.K. Gaur, Digital Electronics and Microcomputers				
MoE	CAT, Quiz, Seminar, Assignment, Term-End Examination				
Recommended by the Board of Studies on					
Date of Approval by the Academic Council					