



National Institute of Technology Meghalaya

An Institute of National Importance

CURRICULUM

Programme	Bachelor of Technology in Electrical and Electronics Engineering	Year of Regulation	2019-20
-----------	---	--------------------	----------------

Department	Electrical Engineering	Semester	V
------------	-------------------------------	----------	----------

Course Code	Course Name	Credit Structure				Marks Distribution			
		L	T	P	C	INT	MID	END	Total
EE305	Microprocessors and Interfacing	3	0	0	3	50	50	100	200

Course Objectives	To introduce microprocessors based system		Course Outcomes	CO1	Describe microprocessor based systems and programming model of 8085 microprocessor.
	To teach the architecture, instruction sets, addressing mode of 8085			CO2	Describe the architecture, timing diagram & instruction set of 8085 Microprocessor. Describe various addressing modes and data transfer schemes.
	To Interface 8085 with different peripherals			CO3	Describe the Concept & structure of Interrupts in 8085 Microprocessor. Describe the concept of Stack and write Stack related program using instruction set of 8085.
	To introduce 8086 microprocessor			CO4	Describe programming & interfacing of I/O and peripherals 8255, 8254, 8259A, 8279.
				CO5	Describe Architecture, memory segmentation, and modes of operation of 8086 Microprocessor.

No.	COs	Mapping with Program Outcomes (POs)												Mapping with PSOs		
		PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3
1	CO1	3	3	0	2	2	0	0	0	0	0	0	0	0	3	2
2	CO2	3	3	3	3	3	0	0	0	2	0	0	1	0	3	3
3	CO3	3	3	3	3	3	0	3	0	0	0	0	0	0	3	3
4	CO4	3	2	3	2	3	0	3	0	3	0	0	1	0	3	3
5	CO5	3	2	0	0	1	0	2	0	0	0	0	1	0	3	2

SYLLABUS

No.	Content	Hours	COs
1	Microprocessor System Introduction, concept of address and data buses, system control signals, basic bus timing, memory (RAM, ROM), memory mapping, input output devices: tri-state devices-buffer, decoder, encoder, and latch.	06	CO1

II	8085 Microprocessor Introduction to 8085A, pin description, Architecture, bus timing and instruction timing, de-multiplexing of buses, generation of control signals, memory interfacing, interrupts.	06	CO2,CO3
III	8085 I/O Interfacing Basic interfacing concepts, input/output timing, peripheral I/O interfacing and memory mapped I/O interfacing.	06	CO3,CO4
IV	8085 Programming Instruction set of 8085A, addressing modes, programming, delay, stack and subroutine.	05	CO3, CO4
V	Interfacing Peripherals Interfacing concepts, data converters – ADC and DAC, 8255 programmable peripheral interface, 8279 programmable keyboard/Display, 8259A programmable interrupt controller, 8254 programmable interval timer.	07	CO4
VI	Introduction to 8086 Microprocessor 8086 internal architecture, address generation, memory segmentation, minimum and maximum mode signal descriptions and basic timing.	06	CO5
Total Hours		36	

Essential Readings

1. R. Gaonker, "Microprocessor Architecture, Programming & Application with 8085", Penram International, 6th edition, 2013.
2. K M Bhurchandi, A K Ray, "Advanced Microprocessors and Peripheral", Tata McGraw Hill, 1st Edition, 2006

Supplementary Readings

1. James L. Antonakos, "An introduction to the Intel family of Microprocessors", Pearson Education, 3rd edition, 1998.
2. B. Ram, "Fundamentals of Microprocessors and Microcomputers", Dhanpat Rai, 3rd Edition, 1990.
3. A K. Mukhopadhyay, "Microprocessor, Microcomputer and their Applications", Narosa Publishing House, 2nd edition, 2001.
4. N. S. Kumar, M. Saravanan, "Microprocessors and Microcontrollers", Oxford University Press, 2nd edition, 2016.
5. D.V. Hall, "Microprocessor & Interfacing", McGraw Hill, 1st Edition, 2005