SHAMBHUNATH INSTITUTE OF ENGINEERING & TECHNOLOGY
JHALWA, ALLAHABAD
STUDY SCHEME
(Lecture Plan: 2017-18)

B.Tech: 5th Semester
Paper Code: NEC-503
Subject: Microprocessor
Branch: EC
Faculty Name: Mr. Ajay Dwivedi

Unit No.	Lecture No.	Topics to be covered	Status
Unit 1	**1.**	Introduction/ Evolution of microprocessors	
	2.	Microprocessor architecture and its operations	
	3.	8085 pins description	
	4.	programming model	
	5.	basic interfacing concepts	
	6.	input and output devices	
	7.	logic devices and memory interfacing	
	8.	Addressing modes, Concept of instruction cycle	
	9.	machine cycle and T-states	
	10.	Concept of interrupts	
	11.	Classification of 8085 instructions.	
	12.	Problem discussion	
Unit 2	**13.**	8086 architecture-functional diagram	
	14.	8086 architecture-functional diagram	
	15.	register organization	
	16.	memory segmentation	
	17.	programming model, memory address	
	18.	physical memory organization	
	19.	Pins description	
	20.	maximum mode and minimum mode signal descriptions	
	21.	timing diagrams, clock generator 8284A	
	22.	Introduction to DOS and BIOS interrupts.	

	23.	Introduction to DOS and BIOS interrupts.	
Unit 3	**24.**	Instruction formats, addressing modes	
	25.	Instruction formats, addressing modes	
	26.	assembler directives (debug, TASM & MASM)	
	27.	assembler directives (debug, TASM & MASM)	
	28.	macros, Programs techniques and assembly language programs:	
	29.	macros, Programs techniques and assembly language programs:	
	30.	simple programs involves data transfer operation,	
	31.	simple programs involves data transfer operation,	
	32.	arithmetic operation, logical operation,	
	33.	Branch operation	
	34.	machine control operation	
	35.	string manipulations	
	36.	stack and subroutine operations	
Unit 4	**37.**	8255 Programmable peripheral interfacing various mode of operation to 8086	
	38.	8255 Programmable peripheral interfacing various mode of operation to 8086	
	39.	Interfacing keyboard and seven segment display	
	40.	Interfacing keyboard and seven segment display	
	41.	8254 (8253) programmable interval timer.	
	42.	8254 (8253) programmable interval timer	
	43.	stepper motor interfacing	
	44.	stepper motor interfacing	
	45.	D/A and A/D converter	
	46.	D/A and A/D converter	
	47.	Direct Memory Access and 8237 DMA controller	
	48.	Direct Memory Access and 8237 DMA controller	
Unit 5	**49.**	Memory interfacing to 8086	
	50.	Interrupt structure of 8086, interrupt handling	
	51.	Interrupt structure of 8086, interrupt handling	

	52.	vector interrupt table and interrupt Service routine	
	53.	vector interrupt table and interrupt Service routine	
	54.	Interfacing interrupt controller 8259	
	55.	Interfacing interrupt controller 8259	
	56.	DMA Controller 8257 to 8086.	
	57.	Serial communication standards	
	58.	Serial data transfer schemes	
	59.	Problem discussion full syllabus	
	60.	Class test full syllabus	

Text Book:

1. Ramesh Gaonkar, "Microprocessor architecture, programming and applications with the 8085",Penram International Publication (India) Pvt. Ltd.

2. Douglas V. Hall, "Microprocessors and Interfacing", Tata McGraw Hill Publication.

Reference Books:

1. Sivarama P. Dandamudi, "Introduction to Assembly Language Programing From 8086 to Pentium Processors", Springer Publication.

2. Walter A. Triebel and Avtar Singh, "The 8088 and 8086 Microprocessors: Programming, Interfacing Software, Hardware and Applications", Pearson Publication.

3. A. K. Ray and K. M. Bhurchandi, "Advance microprocessors and Peripherals" Tata McGraw Hill Publication. 4. Lyla B. Das, "The X86 Microprocessors, Architecture, Programming and Interfacing (8086 to Pentium)", Pearson Publication.