EE-504: MICROPROCESSORS Session 2017-18 ODD SEM

Sr N		Lecture no	
1.	**UNIT-I:** **Introduction to Digital Computer and Microprocessor:** **Digital Computers:** General architecture and brief description of elements, instruction execution,	L 1.	
2.	instruction format, and instruction set,	L 2.	
3.	addressing modes, programming system, higher lever languages.	L 3.	
4.	**Buses and CPU Timings:** Bus size and signals, machine cycle timing diagram, instruction timing, processor timing.	L 4.	
5.	**Microprocessor and Microprocessor Development Systems:** Evolution of Microprocessor,	L 5.	
6.	Microprocessor architecture and its operations, memory, inputs-outputs (I/Os), data transfer schemes interfacing devices,	L 6.	Gaonkar, Ramesh S, "Microprocessor Architecture, programming and applications with the 8085"
7.	architecture advancements of microprocessors,	L 7.	
8.	typical microprocessor development system.	L 8.	
9.	**UNIT-II: 8-bit Microprocessors.** **8085 microprocessor:** pin configuration	L 9.	
10.	internal architecture.	L 10.	
11.		L 11.	
12.	Timing & Signals: control and status, interrupt:	L 12.	
13.		L 13.	
14.	ALU, machine cycles,	L 14.	
15.		L 15.	
16.	**Instruction Set of 8085:**	L 16.	
17.	Instruction Set	L 17.	
18.	**Addressing Modes:** Register addressing, direct addressing; register indirect addressing, immediate addressing, and implicit addressing.	L 18.	
19.		L 19.	
20.	Instruction format, op-codes, mnemonics, no. of bytes, RTL, variants, no. of machine cycles and T states, addressing modes.	L 20.	
21.		L 21.	
22.	**Instruction Classification:** Data transfer, arithmetic operations, logical operations, branching operation, machine control;	L 22.	
23.		L 23.	
24.	Writing assembly Language programs,	L 24.	
25.		L 25.	
26.	Assember directives.	L 26.	
27.		L 27.	
28.	**UNIT-III: 16-bit Microprocessors: Architecture:** Architecture of INTEL 8086	L 28.	Ray, A.K. & Burchandi, K.M., "Advanced Microprocessors and Peripherals: Architecture,
29.	(Bus Interface Unit, Execution unit),	L 29.	
30.		L 30.	
31.	register organization, memory addressing, memory segmentation,	L 31.	
32.		L 32.	
33.	Operating Modes	L 33.	
34.		L 34.	
35.		L 35.	
36.	**Instruction Set of 8086** Addressing Modes**:** Instruction format:	L 36.	
37.	Discussion on instruction Set: Groups: data transfer	L 37.	

38.	arithmetic , logic string, branch control transfer, processor control.	**L 38.**	Programaming and Interfacing"
39.		**L 39.**	
40.	**Interrupts:** Hardware and software interrupts, responses and types.	**L 40.**	
41.		**L 41.**	
42.	**UNIT-IV** **Fundamental of Programming:** development of algorithms,	**L 42.**	Gaonkar, Ramesh S, "Microprocessor Architecture, programming and applications with the 8085"
43.		**L 43.**	
44.	flowcharts in terms of structures,(series, parallel, if-then-else etc.)	**L 44.**	
45.		**L 45.**	
46.	**Assembler Level Programming:** memory space allocation (mother board and user program)	**L 46.**	
47.		**L 47.**	
48.	Assembler level programs (ASMs)	**L 48.**	
49.		**L 49.**	
50.	**UNIT-V** **Peripheral Interfacing:** I/O programming: Programmed I/O, Interrupt Driven I/O, DMA I/O interface: serial and parallel communication,	**L 50.**	
51.	memory I/O mapped I/Os. Peripheral Devices:	**L 51.**	
52.		**L 52.**	
53.	8237 DMA controller,	**L 53.**	
54.		**L 54.**	
55.	8255-Programmable peripheral interface,	**L 55.**	
56.		**L 56.**	
57.	8253/8254 Programmable timer/counter.	**L 57.**	
58.		**L 58.**	
59.	8259 programmable Interrupt Controller.	**L 59.**	
60.		**L 60.**	

Text Books:

1. Gaonkar, Ramesh S, "Microprocessor Architecture, programming and applications with the 8085" Pen ram International Publishing 5th Ed.
2. Uffenbeck, John, "Microcomputers and Microprocessors" PHI/ 3rd Edition.
3. Ray, A.K. & Burchandi, K.M., "Advanced Microprocessors and Peripherals: Architecture, Programaming and Interfacing" Tata Mc. Graw Hill.
4. Krishna Kant, "Microprocessors and Microcontrollers" PHI Learning.

Reference Books:

5. Brey, Barry B. "INTEL Microprocessors" Prentice Hall (India)
6. ADitya P Mathur, "Introduction to Microprocessor" Tata McGraw Hill
7. M. Rafiquzzaman, "Microprocessors- Theory and applications" PHI
8. B. Ram, "Advanced Microprocessor & Interfacing" Tata McGraw Hill
9. Renu Singh & B.P.Singh, "Microprocessor and Interfacing and applications" New Age International
10. N. Senthil Kumar, "Microprocessors and Microcontroller", Oxford University Press.
11. Liu and Gibson G.A., "Microcomputer Systems: The 8086/8088 Family" Prentice Hall (India)