

Microprocessor Systems and Applications: EC 606 EC
B. E. III (EC) 6th Sem.

	Lecture	Tutorial	Practical
Teaching Hours	3	1	2
Examination Scheme Marks	100	25	Cont. Evaluation : 20 Examination : 30

Faculty: Ms Jyoti Agrawal & Mr. Digvijay Rathod

LecNo.	Content	Text	Ref
1	Introduction to 16 bit Microprocessor	[1]	[3]
2	8086 internal Architecture, Signal Description of 8086, Internal execution and timing	Ch : 2 P : 19 -36	[3]
3	Flag register, Concept of segmentation		[3]
4	Introduction to 8086 Family Assembly Language Programming & data types.	[1] Ch : 3	[3]
5	Data transfer instructions, Arithmetic instructions, Logical, shift and rotate instructions, Branch instructions, Loop instructions,	P : 42 – 64 Ch : 6 P : 131-162	[3]
6	Program for addition, average, ascending/descending	[3]	[6]
7	Program for Fibonacci series 25 elements (4 digit)	[3]	[6]
	Holiday		
8	Procedure call & stack operation, program of number conversion with procedure	[1] Ch : 4 & 5	[6]
9	NOP,HLT and flag manipulation instructions	P : 65 - 122	[3]
10	Assembler directives		[3]
11	Machine language instructions, String Instruction		[3]
	Holiday		
12	Logic & Program of 32 & 64 bit number multiplication.	[1] P: 130	[6]
	Holiday		
13	Programming with DOS & BIOS function calls.	[3]	[6]
14	Logic & Program of division 64 bit (Dividend) /16 bit (divisor)	[1] P :123-126	[6]
15	Programming with DOS & BIOS function calls.	[3]	[6]
16	Programming with string instructions	[3]	[6]
17	Programming with string instructions	[3]	[6]
18	Program to enter/read & display strings/numbers on screen.	[3]	[6]
19	PROGRAMMING WITH MACROS	[1] P : 127-129	[6]
20	TEST OF ALL INSTRUCTIONS	[1] Ch : 6	
21	8086 System Connections And Timings : 8086 Hardware overview, Basic signal flow on 8086 buses	[1] CH : 7	[3]
22	Analyzing a minimum mode system		[3]
23	8086 addressing and address decoding,		[3]
24	8086 timing parameters		[3]
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25	8086 Maximum Mode & complete system		[3]
	Interrupts And Interrupt Service Procedures :		
26	8086 interrupts and interrupt responses, 8086 Interrupt types, Interrupt vector table	[1] Ch : 8	[3]

27	Interrupt Program Example		[3]
28	Hardware and software considerations for using interrupts, priority of interrupts		[3]
29	Example for counting applications		[3]
30	8254 Modes & interrupt application		[3]
31	8259A Priority Interrupt Controller		[3]
32	8086 example interrupt		[3]
	I/O Programming :		
33	Fundamental I/O considerations,	[2]	
34	Programmed and Interrupt I/O,		
35	Block transfers and DMA		
36	I/O design example		
37	Test		
	Interfacing :		
38	Programmable parallel ports and handshake input/output,	[3]	[1,5]
39	Interfacing microprocessors to keyboard and displays,		[1,5]
40	D/A converter operation, Interfacing and applications, A/D converter interfacing,		[1,5]
41	Stepper motor Interfacing,		[1,5]
42	Serial communication interfaces UART, USART, General Applications.		[1,5]
43	Examples Interfacing		[1,5]
44	Examples Interfacing		[1,5]
	Introduction to Microcontrollers :		
45	Introduction to Microcontrollers	[7]	[8]
46	8051 architecture overview		
47	8051 I/O ports, timer, counters, interrupts etc		
48	Programming methodology & tools of 8051 microcontroller		
49	8051 Instructions		
50	8051 Instructions		
51	8051 Programming		
52	8051 Programming		
53	8051 Applications		
54	Revision		
55	Revision		

Reference:

1. Hall Douglas V: Microprocessors and Interfacing, Programming and Hardware (TMH)
2. Gibson Glenn A. and Liu Yu Cheng: Microcomputer Systems: The 8086/8088 Family, Architecture, Programming and Design (PHI 2nd Ed)
3. A K Ray & K M Bhurchandi : Advanced Microprocessors & Peripherals : Architecture, Programming & Interfacing, TMH
4. John Uffenbeck : The 8086/8088 family : Design Programming & Interfacing, PHI
5. James L Antonakos : An Introduction to the Intel family of Microprocessors, Pearson Education (LPE), 3rd Ed
6. Peter Abel : IBM PC Assembly language & Programming, PHI, 3rd Ed
7. Kenneth J Ayala : The 8051 Microcontroller Architecture, Programming & Applications, Penram International, 2nd Ed.
8. Microcontroller by Mazidi, Pearson Education
