



LESSON PLAN

JHARSUGUDA ENGINEERING SCHOOL, JHARSUGUDA

Name of the Faculty: - Yasobanti Nayak	Academic Year: - 2024-25
Course No.: - TH-3	Course Name: - Microprocessor & Microcontroller
Programme: - Diploma	Branch: - E&TC
Year/ Sem: - 2 nd /4 th	Section:

SI. No.	No. of session (min)	Unit	Topic to be Covered	Activity (lecture, tutorial, Demonstration, lab practice, field studies/workshop)	Suggested Reading (Book, Video, On line Sources etc.)
1.	55 min	1.1	Introduction to Microprocessor & Microcomputer	Lecture/PPT mode	Ajay V. Deshmukh R.S.Gaonkar
2.	55min	1.2	Concept of Address bus, Data bus, Control bus & system bus	Lecture/PPT mode	Ajay V. Deshmukh R.S.Gaonkar
3.	55min	1.3	General Bus structure block diagram	Lecture/PPT mode	Ajay V. Deshmukh R.S.Gaonkar
4.	55min	1.4	Basic architecture of 8085 (8-bit) Microprocessor	Lecture	Ajay V. Desmukh R.S.Gaonkar
5.	55min		Revision & Class test	Lecture	Ajay V. Desmukh R.S.Gaonkar
6.	55min	1.5	Pin diagram of 8085 microprocessor	Lecture/PPT mode	Ajay V. Desmukh R.S.Gaonkar
7.	55min	1.6	Register organizations , Distinguish between SPR & GPR	Lecture/PPT mode	Ajay V. Desmukh R.S.Gaonkar
8.	55min	1.6	Register organizations , Distinguish between SPR & GPR	Lecture/PPT mode	Ajay V. Desmukh R.S.Gaonkar
9.	55min	1.6	Timing & control module	Lecture/chalkboard	Ajay V. Desmukh R.S.Gaonkar
10	55min		Class test	Lecture/chalkboard	Ajay V. Desmukh R.S.Gaonkar
11	55 min	1.8	Stack, stack pointer & stack top	Lecture/PPT mode	Ajay V. Desmukh R.S.Gaonkar

12	55 min	1.8	Stack, stack pointer & stack top	Lecture/chalkboard	Ajay V.Desmukh R.S.Gaonkar
13	55min	1.8	Interrupts, Masking of interrupt(SIM,RIM)	Lecture/chalkboard	Ajay V. Desmukh R.S.Gaonkar
14	55 min		Revision & class test	Lecture/chalkboard	Ajay V. Desmukh R.S.Gaonkar
15	55 min	2.1	Addressing data & Differentiate between 1-byte,2-byte,3- byte instruction with example	Lecture/chalkboard	Ajay V. Desmukh R.S.Gaonkar
16	55min	2.1	Addressing data & Differentiate between 1-byte,2-byte,3- byte instruction with example	Lecture	Ajay V. Desmukh R.S.Gaonkar
17	55min	2.2	Addressing modes in instructions with suitable examples	Lecture	Ajay V. Desmukh R.S.Gaonkar
18	55 min		Group Activity	Lecture	Ajay V. Desmukh R.S.Gaonkar
19	55 min	2.3	Instruction set of 8085	Lecture	Ajay V. Desmukh R.S.Gaonkar
20	55 min	2.4	Simply Assembly Language Programming of 8085	Lecture	Ajay V. Desmukh R.S.Gaonkar
21	55 min	2.4.1	Simple addition & subtraction	Lecture/ chalkboard	Ajay V. Desmukh R.S.Gaonkar
22	55min		Simple multiplication and division programming	Lecture/PPT mode	Ajay V. Desmukh R.S.Gaonkar
23	55min	2.4.2	Logic operations (AND,OR ,Complement 1's & 2's) & Masking of bits	Lecture/PPT mode	Ajay V. Desmukh R.S.Gaonkar
24	55 min	2.4.3	Counters & Time delay (single Register, Register pair, More than two register)	Lecture/PPT mode	Ajay V. Desmukh R.S.Gaonkar
25	55 min	2.4.4	Looping, counting & indexing (call/JMP etc)	chalkboard	Ajay V. Desmukh R.S.Gaonkar
26	55 min	2.4.5	Stack & subroutine programs	chalkboard	Ajay V. Desmukh R.S.Gaonkar
27	55 min	2.4.6	Code conversion, BCD Arithmetic & 16 bit data operation, block transfer	chalkboard	Ajay V. Desmukh R.S.Gaonkar
28	55 min	2.4.7	Compare between two numbers and Array handling(Largest number & smallest number in the array)	Lecture	Ajay V. Desmukh R.S.Gaonkar

29	55 min	2.5	Memory & I/O Addressing	Lecture	Ajay V. Desmukh R.S.Gaonkar
30	55 min	2.5	Memory & I/O Addressing	Lecture	Ajay V. Desmukh R.S.Gaonkar
31	55 min	3.1	Define opcode, operand, T-State, Fetch cycle, Machine cycle, Instruction Cycle	Lecture/PPT mode	Ajay V. Desmukh R.S.Gaonkar
32	55 min	3.1	Concept of timing diagram	Lecture/PPT mode	Ajay V. Desmukh R.S.Gaonkar
33	55 min	3.2	Draw timing diagram for memory read, memory write	Lecture/PPT mode	Ajay V. Desmukh R.S.Gaonkar
34	55 min	3.2	timing diagram for I/O read, I/O write machine cycle	Lecture/PPT mode	Ajay V. Desmukh R.S.Gaonkar
35	55 min	3.2	timing diagram for I/O read, I/O write machine cycle	Lecture	Ajay V. Desmukh R.S.Gaonkar
36	55 min	3.3	Draw a neat sketch for the timing diagram for 8085 instruction (MOV, MVI, LDA Instruction)	Lecture	Ajay V. Desmukh R.S.Gaonkar
37	55 min	3.3	Draw a neat sketch for the timing diagram for 8085 instruction (MOV, MVI, LDA Instruction)	Lecture/PPT mode	Ajay V. Desmukh R.S.Gaonkar
38	55 min		Practicing previous year question	Lecture/PPT mode	Ajay V. Desmukh R.S.Gaonkar
39	55 min	4.1	Concept of interfacing	Lecture/PPT mode	Ajay V. Desmukh R.S.Gaonkar
40	55 min	4.2	Define Mapping & Data transfer mechanisms-memory mapping & I/O mapping	Lecture/PPT mode	Ajay V. Desmukh R.S.Gaonkar
41	55 min	4.3	Concept of memory interfacing-interfacing EPROM & RAM Memories	Lecture/PPT mode	Ajay V. Desmukh R.S.Gaonkar
42	55 min	4.4	Concept of Address decoding for I/O devices	Lecture/PPT mode	Ajay V. Desmukh R.S.Gaonkar
43	55 min	4.5	Programmable Peripheral Interface: 8255,ADC & DAC Interfacing	Lecture	Ajay V. Desmukh R.S.Gaonkar
44	55 min	4.6	Interfacing Seven segment displays,generate square wave on lines of 8255	Lecture	Ajay V. Desmukh R.S.Gaonkar
45	55 min	4.7	Design interface a traffic light control system using 8255,interface for stepper motor control using 8255	Lecture/PPT mode	Ajay V. Desmukh R.S.Gaonkar

46	55 min	4.8	Basic concept of other interfacing DMA controller, USART	Lecture	Ajay V. Desmukh R.S.Gaonkar
47	55 min	5.1	Register Organization 8086	Lecture	Ajay V. Desmukh R.S.Gaonkar
48	55 min	5.2	Internal architecture of 8086	Lecture/PPT mode	Ajay V. Desmukh R.S.Gaonkar
49	55 min	5.3	Signal description of 8086	Lecture/PPT mode	Ajay V. Desmukh R.S.Gaonkar
50	55 min	5.4	General Bus operation & physical memory organization	Lecture/PPT mode	Ajay V. Desmukh R.S.Gaonkar
51	55 min	5.5	Minimum mode & Timings	Lecture	Ajay V. Desmukh R.S.Gaonkar
52	55 min	5.6	Maximum mode & Timings	Lecture	Ajay V. Desmukh R.S.Gaonkar
53	55 min	5.7	Interrupt & interrupt service routines, Interrupt cycle	Lecture	Ajay V. Desmukh R.S.Gaonkar
54	55 min	5.8	Non- Maskable interrupt, maskable interrupt, 8086 Instruction Set & programming	Lecture/PPT mode	Ajay V. Desmukh R.S.Gaonkar
55	55 min	5.9	Simple assembly language programming using 8086 instruction	Lecture/PPT mode	Ajay V. Desmukh R.S.Gaonkar
56	55 min	5.10	Simple assembly language programming using 8086 instruction	Lecture/PPT mode	Ajay V. Desmukh R.S.Gaonkar
57	55 min	5.11	Practicing previous year question	Lecture	Ajay V. Desmukh R.S.Gaonkar
58	55 min	6.1	Distinguish between microprocessor & microcontroller	Lecture	Ajay V. Desmukh R.S.Gaonkar
59	55 min	6.2	8 bit microcontroller	Lecture	Mazidi
60	55 min	6.2	16 bit microcontroller	Lecture	Mazidi
61	55 min	6.3	CISC & RISC processor		Mazidi
62	55 min	6.4	Architectur of 8051 microcontroller	Lecture/PPT mode	Mazidi
63	55 min	6.5	Signal description of 8051 microcontroller	Lecture/PPT mode	Mazidi
64	55 min	6.6	Memory organization-RAM structure, SFR	Lecture/PPT mode	Mazidi
65	55 min	6.7	Registers, timers, interrupts of 8051	Lecture/PPT mode	Mazidi
66	55 min	6.8	Addressing modes of 8051	Lecture/PPT mode	Mazidi
67	55 min	6.9	Simple 8051 assembly language programming,	Lecture/PPT mode	Mazidi

			<i>arithmetic & logic instruction</i>		
68	55 min	6.10	<i>Simple 8051 assembly language programming, arithmetic & logic instruction</i>	<i>Lecture/PPT mode</i>	<i>Mazidi</i>
69	55 min	6.11	<i>JUMP, CALL, I/O Port programming</i>	<i>Lecture/PPT mode</i>	<i>Mazidi</i>
70	55 min	6.12	<i>Interupts ,Timer & counters</i>	<i>Lecture/PPT mode</i>	<i>Mazidi</i>
71	55 min	6.13	<i>Serial communication</i>	<i>Lecture/PPT mode</i>	<i>Mazidi</i>
72	55 min	6.14	<i>Microcontroller interrupts & interfacing to 8255</i>	<i>Lecture/PPT mode</i>	<i>Mazidi</i>
73	55 min	6.14	<i>Microcontroller interrupts & interfacing to 8255</i>	<i>Lecture/PPT mode</i>	<i>Mazidi</i>
74	55 min		<i>Practicing previous year question</i>	<i>Lecture/PPT mode</i>	<i>Mazidi</i>
75	55 min		<i>Practicing previous year question</i>	<i>Lecture/PPT mode</i>	<i>Mazidi</i>