

Siruseri IT park, OMR, Chennai - 603103

Suggested Activity: Inclass activity QUIZ on 8086 signals

Evaluation method : MCQ or Group Answer							
UNIT III I/O INTERFACING							
19	Memory Interfacing and I/O interfacing	T1	1	BB	L2	CO3	PO1-PO3
20	Serial and Parallel communication interface	T1	1	BB	L2	CO3	PO1-PO3
21	D/A and A/D Interface	T1	1	BB	L3	CO3	PO1-PO3,PO5
22	Timer:• Architecture,• Signal Description • Operating modes,• Programming	T1	1	PPT	L3	CO3	PO1-PO3
23	Keyboard /display controller	T1	1	PPT	L3	CO3	PO1-PO3,PO5
24	Interrupt controller	T1	1	BB	L2	CO3	PO1-PO3
25	DMA controller	T1	1	BB,PPT	L2	CO3	PO1-PO3
26	Case studies: • Traffic Light control • LED display • LCD display	R1,T1	1	BB,PPT	L4	CO3	PO1-PO3,PO5
27	Programming and applications Case studies • Keyboard display interface Alarm Controller	R1,T1	1	PPT	L4	CO3	PO1-PO3,PO5
Suggested Activity: Cause StudyAlarm controller for industry							
Evaluation method : Report							
UNIT IV MICROCONTROLLER							
28	Architecture of 8051	T2	1	PPT	L2	CO4	PO1-PO3
29	Register set	T2	1	PPT	L1	CO4	PO1-PO3
30	Special Function Registers(SFRs)	T2	1	PPT	L2	CO4	PO1-PO3
31	I/O Pins Ports and Circuits	T2	1	BB	L2	CO4	PO1-PO3
32	Instruction set Data transfer and Arithmetic Instructions	T2	1	BB	L2	CO4	PO1-PO3
33	Jump, Loop and Call Instructions	T2	1	BB	L2	CO4	PO1-PO3
34	Addressing modes	T2	1	BB	L2	CO4	PO1-PO3
35	Assembly language programming	T2	1	PPT	L3	CO4	PO1-PO3
36	Assembly language programming	T2	1	BB	L3	CO4	PO1-PO3
Suggested Activity: Seminar on Applications of microcontroller							
Evaluation method : Group presentation							
UNIT V INTERFACING MICROCONTROLLER							
37	Programming 8051 Timers	T2	1	BB	L3	CO5	PO1-PO3
38	Serial Port Programming • Basics of Serial Communication • 8051 Connection to RS232 • 8051 Serial Port Programming in Assembly • Programming the Second Serial Port	T2	1	PPT	L3	CO5	PO1-PO3
39	Interrupts Programming • 8051 Interrupts • Programming Timer Interrupts • Programming External Hardware Interrupts • Programming the serial Communication Interrupt	T2	1	PPT	L2	CO5	PO1-PO3
40	LCD & Keyboard Interfacing	T2	1	PPT	L3	CO5	PO1-PO3
41	Keyboard Interfacing	T2	1	PPT	L3	CO5	PO1-PO3
42	ADC & DAC interfacing	T2	1	PPT	L3	CO5	PO1-PO3
43	Sensor Interfacing	T2	1	PPT	L4	CO5	PO1-PO3,PO5
44	External Memory Interface	T2	1	PPT	L2	CO5	PO1-PO3
45	Stepper Motor and Waveform generation	T2	1	PPT	L4	CO5	PO1-PO3
Suggested Activity: Mini project Using 8051.Design temperature sensor system using LM 35 Sensor(H/W or Simulation)							
Evaluation method : Simulation output							
Content Beyond the Syllabus Planned							
1	An Insight on ARM , PIC controller						
2	Design of Microcontroller based system using PROTEUS (Keyboard Interface)						

Text Books														
1	Yu-Cheng Liu, Glenn A.Gibson, “Microcomputer Systems: The 8086 / 8088 Family - Architecture, Programming and Design”, Second Edition, Prentice Hall of India, 2007.													
2	Mohamed Ali Mazidi, Janice Gillispie Mazidi, Rolin McKinlay, “The 8051 Microcontroller and Embedded Systems: Using Assembly and C”, Second Edition, Pearson Education, 2011.													
Reference Books														
1	Doughlas V.Hall, “Microprocessors and Interfacing, Programming and Hardware”, TMH,2012													
Website / URL References														
1	https://nptel.ac.in/courses/106/108/106108100/													
2	https://nptel.ac.in/courses/106/108/106108100/													
3	https://nptel.ac.in/content/storage2/courses/106108100/pdf/Teacher_Slides/mod3/M3L8.pdf													
Blooms Level														
Level 1 (L1) : Remembering			Lower Order Thinking	Fixed Hour Exams	Level 4 (L4) : Analysing				Higher Order Thinking	Projects / Mini Projects				
Level 2 (L2) : Understanding					Level 5 (L5) : Evaluating									
Level 3 (L3) : Applying					Level 6 (L6) : Creating									
Mapping syllabus with Bloom's Taxonomy LOT and HOT														
Unit No	Unit Name			L1	L2	L3	L4	L5	L6	LOT	HOT	Total		
Unit 1	THE 8086 MICROPROCESSOR			0	8	1	0	0	0	9	0	9		
Unit 2	8086 SYSTEM BUS STRUCTURE			1	8	0	0	0	0	9	0	9		
Unit 3	I/O INTERFACING			0	4	3	2	0	0	7	2	9		
Unit 4	MICROCONTROLLER			1	6	2	0	0	0	9	0	9		
Unit 5	INTERFACING MICROCONTROLLER			0	2	5	2	0	0	7	2	9		
Total				2	28	11	4	0	0	41	4	45		
Total Percentage				4.44444	62.2222	24.4444	8.88889	0	0	91.1111	8.88889	100		
CO PO Mapping														
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2	3	-	-	-	-	-	-	-	-	-	0	0
CO2	3	2	2	-	-	-	-	-	-	-	-	-	0	0
CO3	3	2	3	-	-	-	-	-	-	-	-	-	0	0
CO4	3	2	3	-	-	-	-	-	-	-	-	-	0	0
CO5	3	2	3	-	-	-	-	-	-	-	-	-	1	0
Avg	3	2	2.8	0	0	0	0	0	0	0	0	0	0.2	0
Justification for CO-PO mapping														
CO1	Design and implement programs on 8086 microprocessor requires a fundamental knowledge in mathematics and engineering funadamentals (PO1) and an analytical approach to digital Logic circuits (PO2).It requires an understanding of design concepts (PO3)													
CO2	Understand the functionality of 8086 system bus requires fundamental knowledge in mathematics and engineering funadamentals (PO1), and a strong analytical approach (PO2).It requires an understanding of design concepts (PO3).													
CO3	Design I/O circuits requires fundamental knowledge in mathematics and engineering funadamentals (PO1), and a strong analytical approach to design an I/O circuits (PO2). It requires depth of knowledge in the design concepts (PO3). Implementation of applications using kits(PO5)													
CO4	Design Memory Interfacing circuits requires fundamental knowledge in mathematics and engineering funadamentals(PO1), and a strong analytical approach to design a Memory Interfacing circuits (PO2).It requires depth of knowledge in the design concepts (PO3).													
CO5	Design and implement 8051 microcontroller based systems requires fundamental knowledge in mathematics and engineering funadamentals (PO1), and a medium analytical approach (PO2).It requires an understanding of design concepts and tools(PO3).Less use of design tools(PO5)													
3		High level			2		Moderate level			1		Low level		
Name & Sign of Faculty Incharge :														
Name & Sign of Subject Expert :														
Head of the Department :														