KIIT POLYTECHNIC, BHUBANESWAR

LESSON PLAN

Discipline : Computer Science Engineering

Semester: 3rd Theory : 4 periods per week Total Periods : 48

Name of the Teaching Faculty: Dr. Pampa Nandi

Sl. No.	Class ID	Course Content	Mode of Delivery	Reference
		Theory- Unit-1: Basics of Digital Electronics		
1		Number System-Binary, Octal, Decimal, Hexadecimal	Lecture	Study material
2		Conversion from one system to another number system	Lecture	Study material
3		Arithmetic Operation-Addition, Subtraction, Multiplication, Division,	Lecture	Study material
4		1's & 2's complement of Binary numbers& Subtraction using complements method	Lecture	Study material
5		Digital Code & its application & distinguish between weighted & non-weight Code, Binary codes, excess-3 and Gray codes	Lecture	Study material
6		Revision –introduction to digital circuits	Video Lecture	NPTEL & Teacher's Video
7		Logic gates: AND,OR,NOT,NAND,NOR, Exclusive-OR, Exclusive-NOR--Symbol, Function, expression, truth table & timing diagram	Lecture	Study material

8		Universal Gates & its Realisation	Lecture	Study material
9		Boolean algebra, Boolean expressions, Demorgan's Theorems	Lecture	Study material
10.		Represent Logic Expression: SOP & POS forms, Karnaugh map (2 & 3 Variables) & Minimization of logical expressions	Lecture	Study material
11.		Karnaugh map (3 & 4 Variables) & Minimization of logical expressions, don't care conditions	Lecture	Study material & NPTEL
12.		Quiz test 1		Referring Study material
		Unit-2: Combinational logic circuits		
13.		Half adder, Full adder, Serial and Parallel Binary 4 bit adder	Lecture	Study material
14.		Half Subtractor, Full Subtractor	Lecture	Study material
15.		Multiplexer (4:1), De- multiplexer (1:4)	Lecture	Study material
16.		Decoder, Encoder, Digital comparator, Seven segment Decoder	Lecture	Study material
17.		Revision – Design Full Adder and Subtractor	Student presentation	PPT & Teacher's Video
18.		Assignment	Class test	Referring to study material
		Unit-3: Sequential logic Circuits		
19.		Principle of flip-flops operation, its Types	Lecture	Study material
20.		SR Flip Flop using NAND,NOR Latch (un clocked), C l o c k e d SR FF, D FF	Lecture	Study material

21.		JK FF,T FF, Concept of Racing and how it can be avoided	Lecture	Study material
22.		JK Master Slave flip-flops-Symbol, logic Circuit, truth table and applications	Lecture	Study material
23.		Revision	Video lecture	NPTEL
24.		Quiz Test 2		
		Unit-4: Registers, Memories & PLD		
25.		Shift Registers-Serial in Serial –out, Serial- in Parallel-out	Lecture	Study material
26.		Parallel in serial out, Parallel in parallel out, Universal shift registers-Applications	Video Lecture	NPTEL, Study material
27.		Types of Counter & applications, Synchronous counter, Ring Counter	Lecture	Study material
28.		Binary counter, Asynchronous ripple counter	Lecture	Study material
29.		Synchronous counter, Decade counter	Lecture	Study material
30.		Assignment & Quiz Test		
31.		Concept of memories-RAM, ROM, static RAM, dynamic RAM,PS RAM, Basic concept of PLD & applications	Lecture	Study material
32.		Revision	Student presentation	PPT & Teacher's video
		Unit-5: A/D and D/A Converters		
33.		Necessity of A/D and D/A converters, D/A conversion using weighted resistors methods	Lecture	Study material
34.		D/A conversion using R-2R ladder (Weighted	Lecture	Study material

		resistors) network		
35.		A/D conversion using counter method, A/D conversion using Successive approximate method	Lecture	Study material
36.		Revision – Design 4 bit DAC	Student presentation	PPT & Teacher's video
		Unit-6: LOGIC FAMILIES		
37.		, Various logic families &categories according to the IC fabrication process, Characteristics of Digital ICs- Propagation Delay, fan-out, fan-in, Power Dissipation ,Noise Margin ,Power Supply requirement &Speed with Reference to logic families	Lecture	Study material
38.		Features, circuit operation &various applications of TTL(NAND)	Lecture	Study material
39.		Features, circuit operation &various applications of CMOS (NAND & NOR)	Lecture	Study material
40.		Revision (Q/A Discussion)		
41.		Revision(Q/A Discussion)	Class test	
42.		Revision		
43.		Revision		