

KIIT POLYTECHNIC, BHUBANESWAR

LESSON PLAN Session(2022-2023)

Discipline : Electronics & Telecomm. Engineering	Semester : 3 rd Winter/2022	Name of the Faculty : Dr. Binodini Tripathy Assistant Professor Email ID : binodinifet@kp.kiit.ac.in
Subject : Digital Electronics Theory-3	No. of Days/Week: 04	Start Date : 14/09/2022 End Date : 21/01/2023

Week	Class Day	Theory Topics
1st	1st	Number System-Binary, Octal, Decimal, Hexadecimal
	2nd	Conversion from one system to another number system
	3rd	Arithmetic Operation-Addition, Subtraction, Multiplication, Division
	4th	1's & 2's complement of Binary numbers & Subtraction using complements method
2nd	1st	Digital Code & its application & distinguish between weighted & non-weight Code
	2nd	Binary codes, excess-3 and Gray codes
	3rd	Logic gates: AND,OR,NOT,NAND,NOR, Exclusive- OR, Exclusive-NOR--Symbol, Function, expression, truth table & timing diagram
	4th	Universal Gates& its Realisation
3rd	1st	Boolean algebra, Boolean expressions, Demorgan's Theorems
	2nd	Boolean algebra, Boolean expressions, Demorgan's Theorems
	3rd	Represent Logic Expression: SOP & POS forms
	4th	Karnaugh map (3 & 4 Variables)&Minimization of

		logical expressions
4th	1st	Karnaugh map (3 & 4 Variables)&Minimization of logical expressions, don't care conditions
	2nd	Review, Practice
	3rd	Quiz test
	4th	Half adder, Half Subtractor
5th	1st	Full adder
	2nd	Serial and Parallel Binary 4 bit adder
	3rd	Full Subtractor
	4th	Multiplexer (4:1)
6th	1st	De- multiplexer (1:4)
	2nd	Decoder, Encoder
	3rd	Digital comparator
	4th	Seven segment Display
7th	1st	Seven segment Decoder
	2nd	Review, Practice
	3rd	Principle of flip-flops operation, its Types
	4th	SR Flip Flop using NAND,NOR Latch (un clocked)
8th	1st	C l o c k e d SR, D FF
	2nd	JK,T FF
	3rd	JK Master Slave flip-flops-Symbol, logic Circuit, truth table and applications
	4th	Concept of Racing and how it can be avoided
9th	1st	Review, Practice
	2nd	Quiz
	3rd	Shift Registers-Serial in Serial -out
	4th	Serial- in Parallel-out
10th	1st	Parallel in serial out and Parallel in parallel out
	2nd	Universal shift registers-Applications
	3rd	Types of Counter & applications
	4th	Binary counter, Asynchronous ripple counter
11th	1st	Decade counter

	2nd	Synchronous counter
	3rd	Synchronous counter
	4th	Ring Counter
12th	1st	Concept of memories-RAM, ROM, static RAM, dynamic RAM,PS RAM
	2nd	Basic concept of PLD & applications
	3rd	Review, Practice
	4th	Quiz
13th	1st	Necessity of A/D and D/A converters
	2nd	D/A conversion using weighted resistors methods
	3rd	D/A conversion using R-2R ladder (Weighted resistors) network
	4th	A/D conversion using counter method
14th	1st	A/D conversion using Successive approximate method
	2nd	Revision
	3rd	Various logic families & categories according to the IC fabrication process
	4th	Characteristics of Digital ICs- Propagation Delay, fan-out, fan-in, Power Dissipation ,Noise Margin ,Power Supply requirement & Speed with Reference to logic families
15th	1st	Features, circuit operation & various applications of TTL(NAND)
	2nd	Features, circuit operation & various applications of CMOS (NAND & NOR)
	3rd	Revision (Q/A Discussion)
	4th	Revision(Q/A Discussion)