LESSON PLAN

Discipline: Computer Science & Engg. & E&TC Engg	**Semester:** Third (3rd)	**Name of the Faculty:** Er Kulamani Jena
Subject: Digital Electronics	**No. of days per week class allotted:** Five (5)	**Semester from Date:** 15.09.22 **to Date:** 22 .12.22 **No. of Weeks:** 15
WEEK	**CLASS DAY**	**THEORY TOPICS**
1st	1st	**Introduction**
	2nd	Number system: binary, octal, decimal,
	3rd	Number system: Hexadecimal, Conversion from one no system to another
	4th	Number system: Conversion from one no system to another
	5th	Arithmetic operation-Addition, Subtraction, Multiplication, Division.
2nd	1st	1's & 2's complement of Binary no& subtraction using complement method.
	2nd	Digital Code & its application Distinguish between weighted & non-weight Code,
	3rd	Binary code,ex-3 code,& gray code
	4th	**Logic Gates-** AND, OR, NOT-Symbol, function, expression Truth table & timing diagram
	5th	NAND, NOR – Symbol, function, expression Truth table & timing diagram
3rd	1st	EX-OR & EX-NOR – Symbol, function, expression Truth table & timing diagram
	2nd	Universal Gates & its realisation
	3rd	Boolean algebra, Boolean expression, DE Morgan's Theorems
	4th	Represent Logic Expression : SOP & POS forms & conversion
	5th	Karnaugh's map (3-4 variable) & minimization of logical expression
4th	1st	Karnaugh's map (4 variable) & minimization

		of logical expression
	2nd	Karnaugh's map (minimization of logical expression, don't care condition.
	3rd	**Review**
	4th	**Monthly Test**
	5th	Half-adders, Full-adder,
5th	1st	Half subtractor.
	2nd	full-Subtractor.
	3rd	Serial Binary 4 bit adder
	4th	parallel Binary 4 bit adder
	5th	Cont.
6th	1st	Multiplexers (4:1),
	2nd	DE multiplexers(1:4)
	3rd	Decoder, Encoder
	4th	Digital Comparator(3 bit)
	5th	Cont.
7th	1st	Seven segment decoder
	2nd	Cont.
	3rd	Cont.
	4th	**Review class**
	5th	**Monthly test**
8th	1st	Principles of Flip-Flops operation. Its Types
	2nd	S.R. Flip Flop using NAND, Latch un clocked
	3rd	S.R. Flip Flop using, NOR Latch un clocked

	4th	Cont.
	5th	Clocked SR, flip-flop Symbol, logic Circuit
9th	1st	Clocked, D, T, flip-flop Symbol, logic Circuit
	2nd	Clocked JK, flip-flop Symbol, logic Circuit
	3rd	Clocked MS-JK flip-flop Symbol, logic Circuit
	4th	Clocked logic Circuit
	5th	truth tables, and application
10th	1st	Concept of Racing and how it can be avoided
	2nd	Cont.
	3rd	**Review class**
	4th	Monthly test
	5th	**shift registers-** SISO,
11th	1st	**Shift registers-** SIPO, PISO & PIPO
	2nd	Universal shift register & its application
	3rd	Types of Counter & its applications
	4th	Binary counter, Asynchronous ripple counters(Up/Down), Decade counter
	5th	Synchronous counter, Ring Counter
12th	1st	Concept of memories-RAM, ROM, Static RAM,
	2nd	Dynamic RAM, PS RAM
	3rd	Basic concept of PLD & applications
	4th	**Review class**
	5th	Necessity of A/D & D/A Converter
13th	1st	D/A conversion using Weighted resistor methods
	2nd	D/A conversion using R-2R Ladder network

	3rd	A/D conversion using counter method
	4th	A/D conversion using Successive – Approximation method
	5th	Cont.
14th	1st	**Monthly test**
	2nd	**Review class**
	3rd	Various logic families & categories according to IC fabrication process
	4th	Characteristics of Digital ICs- propagation Delay, fan-out, fan-in, Power Dissipation,
	5th	Noise margin & power supply requirement with reference to logic families
15th	1st	speed with reference to logic families
	2nd	Features-Circuit operation & various applications of TTL(NAND)
	3rd	CMOS(NAND)
	4th	CMOS(NOR)
	5th	Review