

# GOVT. POLYTECHNIC KENDRAPARA

## LESSON PLAN Session(2024-2025)

<b>Discipline :</b> Electronics & Telecomm. Engineering	<b>Semester :</b> 3 <sup>rd</sup> Winter/2024	<b>Name of the Faculty :</b> JOGESWAR NAIK, LECTURER
<b>Subject :</b> Digital Electronics Theory-3	<b>No. of Days/Week:</b> 04	<b>Start Date :</b> 01/07/2024 <b>End Date :</b> 08/11/2024      15weeks
Week	Class Day	Theory Topics
1st week 1st july to 6th july	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 week 08th july to 13th july	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 week 15th july to 20th july	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 week 22nd july to 27th july	1st	Karnaugh map (3 & 4 Variables)&Minimization of logical expressions, don't care conditions
	2nd	<b>Review, Practice</b>
	3rd	<b>Quiz test</b>
	4th	Half adder, Half Subtractor
5th week 29july to 3rd august	1st	Full adder
	2nd	Serial and Parallel Binary 4 bit adder
	3rd	Full Subtractor
	4th	Multiplexer (4:1)
1st week 5th august to 10th august	1st	De- multiplexer (1:4)
	2nd	Decoder, Encoder
	3rd	Digital comparator
	4th	Seven segment Display

2nd week 12th august to 17th august	2nd	<b>Review, Practfce</b>
	3rd	Principle of flip-flops operation, its Types
	4th	SR Flip Flop using NAND,NOR Latch (un clocked)
3rd week 19th august to 24th august	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
4th week 26th aug to 31st aug	1st	<b>Review, Practfce</b>
	2nd	<b>Quiz</b>
	3rd	Shift Registers-Serial in Serial -out
	4th	Serial- in Parallel-out
2nd week 9th sept to 14th sept	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
3rd week 16th sept to 21st sept	1st	Decade counter
	2nd	Synchronous counter
	3rd	Synchronous counter
	4th	Ring Counter
5th week 30th sept to 5th oct	1st	Concept of memories-RAM, ROM, static RAM, dynamic RAM,PS RAM
	2nd	Basic concept of PLD & applications
	3rd	<b>Review, Practice</b>
	4th	<b>Quiz</b>
3rd week 14th oct to 19th oct	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
4th week 21st oct to 28th oct	1st	A/D conversion using Successive approximate method
	2nd	<b>Revision</b>
	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
1st week 2nd Nov to 8th Nov	1st	Features, circuit operation & various applications of TTL(NAND)
	2nd	Features, circuit operation & various applications of CMOS (NAND & NOR)
	3rd	<b>Revision ( Q/A Discussion)</b>
	4th	<b>Revision( Q/A Discussion)</b>