

**U. G. M. I. T, RAYAGADA**

**DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION ENGG**

**ACADEMIC LESSON PLAN FOR WINTER SEMESTER-2023**

<b>NAME OF THE FACULTY</b>	Smita Patnaik	<b>DEPT</b>	ETC		
<b>SEMESTER</b>	3rd	<b>SUBJECT</b>	Digital Electronics		
<b>NO. OF PERIODS PER WEEK</b>	4	<b>TOTAL PERIODS</b>	60		
<b>END SEMESTER EXAM</b>	80	<b>CLASS TEST</b>	20		
<b>TOTAL MARKS</b>	100				

<b>WEEK</b>	<b>PERIOD</b>	<b>UNIT/ CHAPTER</b>	<b>TOPIC TO BE COVERED</b>			
1st	1st	BASICS OF DIGITAL ELECTRICS	Digital electronics fundamentals			
	2nd		Number system binary, octal, decimal and hexadecimal			
	3rd		Conversion from one system to other			
	4th		Arithmetic operation addition, subtraction, multiplication etc			
2nd	1st		BASICS OF DIGITAL ELECTRICS	1s and 2s complement of binary numbers		
	2nd			Digital codes and its application		
	3rd			Logic gates		
	4th			Universal gates and its realization		
3rd	1st			BASICS OF DIGITAL ELECTRICS	Demorgans theorem	
	2nd				SOP and POS form	
	3rd				3 variable karnaugh map	
	4th				4 variable karnaugh map	
4th	1st				COMBINATIONAL LOGIC CIRCUITS	Half adder and full adder
	2nd					Half subtractor
	3rd					Multiplexer 4*1
	4th					Multiplexer 4*1
5th	1st	COMBINATIONAL LOGIC CIRCUITS				Seven segment decoder
	2nd					Concept of full subtractoe
	3rd					concept of full subtractor
	4th					Concept of encoder
6th	1st		COMBINATIONAL LOGIC CIRCUITS			Digital comparator
	2nd					Application of seven segment decodee
	3rd					Application of seven segment decoder
	4th					Serial to parallel converter
7th	1st			SEQUENTIAL LOGIC CIRCUITS		Principles of flip flop operation
	2nd					SR flip flop using NAND latch
	3rd					SR flip flop using NOR latch
	4th					Concept of SR flipflop
8th	1st				SEQUENTIAL LOGIC CIRCUITS	Concept of JKflip flop
	2nd					Concept of Masterslave flip flop
	3rd					Logic circuit and truth table of T flip flop
	4th					Logic circuit and truth table of D flip flop
9th	1st	SEQUENTIAL LOGIC CIRCUITS				Application of master slave flip flop
	2nd					Concept of racing
	3rd					How racing can be avoided
	4th					How racing can be avoided
	1st					Shift registers

10th	2nd	REGISTERS, MEMORIES & PLD	Universal shift registers
	3rd		Application of shift registers
	4th		Type of counters
11th	1st		Binary counter and asynchronous ripple counter
	2nd		Ring counter
	3rd		Concept of RAM, ROM, SRAM etc
	4th		Concept of PLD and application
12th	1st	A/D & D/A CONVERTERS	Necessity of A/D and D/A converter
	2nd		D/A converter using weighted register
	3rd		D/A conversion using R 2R ladder
	4th		A/ D conversion using counter method
13th	1st		A/D conversion using counter method
	2nd		Successive approximate method
	3rd		Successive approximate method
	4th		Various logic families
14th	1st	LOGIC FAMILIES	IC fabrication process
	2nd		Characteristics of digital ics
	3rd		propagation delay, fan in, fan out
	4th		Power dissipation and noise margin and power supply
15th	1st		Speed with reference to logic families
	2nd		Features of TTL
	3rd		Features of CMOS(NAND and NOR)
	4th		Features of CMOS(NAND and NOR)