



**LESSON PLAN**

**DEPARTMENT: ELECTRONICS AND TELECOMMUNICATION**

**BHUBANANANDA ORSSIA SCHOOL OF ENGINEERING, CUTTACK**

**ACADEMIC SESSION: 2022-23**

**SEMESTER: 3<sup>rd</sup> SEM**

**SUBJECT: DIGITAL ELECTRONICS**

# Bhubanananda Orissa School of Engineering

## Lesson Plan

<b>Discipline: E &amp; TC</b>	<b>Semester: 3<sup>rd</sup></b>	<b>Name of the Teaching Faculty: RUPALI LAYAK</b>
Subject Digital electronics	No of Days/per week class allotted: 4	Semester from 15.09 2022 to 22.12.2022 No of weeks: 15
<b>Week No.</b>	<b>Class Day</b>	<b>Theory Topics</b>
1 <sup>st</sup>	16-09-2022 17-09-2022	Unit-1: Basics of Digital Electronics 1.1 Number System-Binary, Octal, Decimal, Hexadecimal - Conversion from one system to another number system.
2 <sup>nd</sup>	20-09-2022 21-09-2022	1.2 Arithmetic Operation-Addition, Multiplication, Division 1's & 2's complement of Binary numbers
	23-09-2022 24-09-2022	Subtraction using complements method 1.3 Digital Code & its application & distinguish between weighted & non-weight Code, Binary codes
3 <sup>rd</sup>	27-09-2022 28-09-2022	Excess-3 and Gray codes. 1.4 Logic gates: AND, OR, NOT, NAND, NOR, Exclusive-OR, Exclusive-NOR-- Symbol, Function, expression, truth table & timing diagram
	30-09-2022	<b>REVISION</b>
	1-10-2022	1.5 Universal Gates & its Realisation.
5 <sup>th</sup>	11-10-2022	1.5 Universal Gates & its Realisation. 1.6 Boolean algebra
	12-10-2022	Boolean expressions, Demorgan's Theorems
	14-10-2022	1.7 Represent Logic Expression: SOP & POS forms
	15-10-2021	<b>Solve question</b>
6 <sup>th</sup>	18-10-2022	<b>1<sup>st</sup> class test</b>
	19-10-2022 21-10-2022	1.8 Karnaugh map (3 & 4 Variables) & Minimization of logical expressions don't care conditions
	22-10-2022	Unit-2: Combinational logic circuits 2.1 Half adder, Full adder
7 <sup>th</sup>	25-10-2022	Half Subtractor, Full Subtractor,
	26-10-2022	Serial Binary 4 bit adder.

# Bhubanananda Orissa School of Engineering

## Lesson Plan

1

	28-10-2022	Parallel Binary 4 bit adder
	29-10-2022	2.2 Multiplexer (4:1), De- multiplexer (1:4)
8 <sup>th</sup>	1-11-2022	Decoder ,Encoder
	2-11-2022	Digital comparator (3bits) seven segment display
	4-11-2022	3.1 Principle of flip-flops operation, its Types
	5-11-2022	3.2 SR Flip Flop using NAND,NOR Latch (un clocked)
9 <sup>th</sup>	9-11-2022	<b>1<sup>st</sup> Internal</b>
	11-11-2022	3.3 Clocked SR, D Symbol, logic Circuit, truth table and applications.
	12-11-2022	3.3 Clocked JK, T Symbol, logic Circuit, truth table and applications.
10 <sup>th</sup>	15-11-2022	Master Slave flip-flops- 3.4 Concept of Racing and how it can be avoided
	16-11-2022	REVISION
	18-11-2022	Unit-4 4.3 Types of Counter & applications 4.4 Binary counter,
	19-11-2022	Asynchronous ripple counter (UP & DOWN)
11 <sup>th</sup>	22-11-2022	Asynchronous ripple counter (UP & DOWN) Decade counter
	23-11-2022	Synchronous counter, Ring Counter
	25-11-2022	4.1 Shift Registers-Serial in Serial -out, Serial- in Parallel-out
	26-11-2022	Shift Registers Parallel in serial out and Parallel in parallel out. 4.2 Universal shift registers-Applications.
12 <sup>th</sup>	29-11-2022	4.5 Concept of memories-RAM, ROM, static RAM, dynamic RAM,PS RAM
	30-11-2022	4.6 Basic concept of PLD & applications
	2-12-2022	<b>2<sup>nd</sup> Class Test</b>

# Bhubanananda Orissa School of Engineering

## Lesson Plan

	3-12-2022	Unit-5: A/D and D/A Converters 5.1 Necessity of A/D and D/A converters.
13 <sup>th</sup>	6-12-2022	5.2 D/A conversion using weighted resistors methods.
	7-12-2022	5.3 D/A conversion using R-2R ladder (Weighted resistors) network
	9-12-2022	5.4 A/D conversion using counter method.
	10-12-2022	5.5 A/D conversion using Successive approximate method.
14 <sup>th</sup>	13-12-2022	Unit-6: INTRODUCTION TO LOGIC FAMILIES Overview on different logic families
	14-12-2022	6.1 Various logic families & categories according to the IC fabrication process
	16-12-2022	6.2 Characteristics of Digital ICs- Propagation Delay, fan-out, fan-in, Power Dissipation. Noise Margin, Power Supply requirement & Speed with Reference to logic families.
	17-12-2022	6.3 Features, circuit operation of TTL(NAND) Features, circuit operation of CMOS (NAND & NOR)
15 <sup>th</sup>	20-12-2022	various applications of TTL(NAND) & CMOS (NAND & NOR)
	21-12-2022	<b>2<sup>nd</sup> Internal</b>  <b>PREVIOUS YEAR QUESTION DISCUSSION</b>

*Rupali Layak*

Signature of Faculty

*[Signature]*  
Principal

*[Signature]*

**HOD, E&TC**  
Sr. Lecturer

Electronics & Telecomm. Engg.  
BOSE, Cuttack