

Lesson Plan

Discipline: ETC		Semester-3rd Winter2023	Name of the Teaching Faculty: Payal Bindia Parida(PTGF, ETC)
Sl. No.	Subject-Th.3 DIGITAL ELECTRONICS	No. Of Days/Week class allotted:04	Semester From date: 01.08.2023 To date: 30.11.2023 No of weeks: 17
	Weeks/Months	Class Day	Topic
1	1st week Aug to 5th week Aug	1st	1.1 List different number system (Binary, Octal, Decimal, Hexadecimal & the Conversion from one number system to
		2nd	1.1 List different number system (Binary, Octal, Decimal, Hexadecimal & the Conversion from one number system to another
		3rd	1.2 Perform Arithmetic operations (Addition, Subtraction, and Multiplication& Division)
		4th	1.2 Perform Arithmetic operations (Addition, Subtraction, and Multiplication& Division)
2	2nd week 7th Aug to 12th Aug	1st	1.2 Perform Arithmetic operations (Addition, Subtraction, and Multiplication& Division)
		2nd	1.3 Dynamic characteristics& speed of instruments
		3rd	1.3 Represent the Concept of complementally numbers: 1's & 2's complementally
		4th	1.4 Define concept of Digital Code & its application & Distinguish between weighted
3	3rd Week 14th aug to 19th Aug	1st	1.5 Study Codes: definition, relevance, types(BCD,Gray,Excess-3,ASCII & EBCDIC) and applications
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		3rd	1.5 Study Codes: definition, relevance, types(BCD,Gray,Excess-3,ASCII & EBCDIC) and applications
		4th	2.1 Illustrate the Different between Analog signals & systems and Digital signals & Systems
4	4th week 21th Aug to 26th Aug	1st	2.2 Discuss the Types of logic & representation using electric signals
		2nd	2.3 Learn the Basic Logic gates (NOT, OR, AND, NAND, NOR, EX-OR & EX-NOR)-Symbol,
		3rd	2.3 Learn the Basic Logic gates (NOT, OR, AND, NAND, NOR, EX-OR & EX-NOR)-Symbol,
		4th	2.3 Learn the Basic Logic gates (NOT, OR, AND, NAND, NOR, EX-OR & EX-NOR)-Symbol,
5	5th week 28th Aug to 2nd Sept	1st	2.5 Define Universal Gates & realisation of other gate
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		3rd	3.1 Understand Boolean: constants, variables & functions
		4th	3.1 Understand Boolean: constants, variables & functions
		1st	3.2 Comprehend the Laws & details of Boolean algebra

6	1st week 4th Sept to 9th sept	3rd	3.2 Comprehend the Laws & details of Boolean algebra
		3rd	3.3 State and prove Demorgan's Theorems & Duality theorem.
		4th	3.4 Represent Logic Expression: SOP & POS forms & conversion
7	2nd week 11th sept to 16th sept.	1st	3.5 Simplify the Logic Expression /Functions (Maximum of 4 variables): using Boolean
		2nd	3.6 What is don't care conditions & Minimization of logical expressions using K-map
		3rd	Unit-4: RESONANCE AND COUPLED CIRCUITS 4.1 Introduction to resonance circuits & Resonance tuned circuit,
8	3rd week 18th sept. to 23rd sept	4th	3.7 Realisation of simplified logic expression using gate
		1st	4.1 Define a Combinational Circuit and explain with examples 4.2 Arithmetic Circuits (Binary) a) Realise function, functional expression, logic circuit, gate I
		2nd	4.4 Parallel Resonance (RL, RC & RLC) & derive the expression
9	4th week 25th Sept to 30th sept	3rd	b) Explain Serial & Parallel Adder & application c) Working of 4 bit parallel adders with logic cir
		4th) Construct 2 bit Magnitude Comparator: logic expression, truth table, gate level circuit
		1st	4.3 Discuss Decoder (2:4) & Encoder (8:3 Octal to Binary): definition, relevance, gate level of circuit Logic circuit truth table
10	1st week 02nd oct. to 07th oct	2nd	4.4 Explain the working of BCD to Seven Segment Decod
		3rd	4.5 Discuss Multiplexers: definition, relevance, gate level circuit of simple Multiplexers (4:1)
		4th	4.6 Discuss De-multiplexers: definition, relevance, gate level circuit of simple De-multiplexers (1:4)
11	2nd week 9th oct. to 14th oct	1st	5.1 Define Sequential Circuit: Explain with examples & distinguish from
		2nd	5.3 Define Flip-Flop & Explain SR Flip Flop using NAND, NOR Latch (un-clocked)
		3rd	5.5 Concept of Racing and how it can be avoided.
12	3rd week 16th oct to 20th oct.	4th	5.4 Study Clocked RS,D,T,JK, MS-JK flip-flop with at level circuit, logic Circuit and truth table
		1st	5.6 Applications of flip-flops and its conversation
		2nd	6.1 list of various logic families & standard notations
13	1st week 30th oct. to 04th	3rd	6.2 Explain propagation Delay, fan-out, fan-in, Power Dissipation
		4th	6.3 Explain Features, circuit operation & various applications of TTL (NAND), CMOS (NAND & NOR) & ECL
		1st	6.4 Explain Tristate Gate
12	3rd week 16th oct to 20th oct.	2nd	7.1 List the different types of counters-Synchronous and
		3rd	7.4 Attenuation and Gain, Bel, Decibel & neper and their relations.
		4th	7.2 Explain the modulus of a counter 7.3 Compare Synchronous and Asynchronous counter
13	1st week 30th oct. to 04th	1st	7.4 Explain the working of 4 bit ripple counter (UP & DOWN) with truth table and timing diagram
		2nd	8.1 Explain the working of buffer register 8.2 Explain the working of various types of shift registers SISO, SIPO,

Nov			
14	2nd week 6th Nov to 11th Nov	3rd	8.4 Explain the applications of Shift Registers 8.5 Explain Ring & Johnson Counter
		4th	DAC-Resolution, Accuracy and Conversion time
		1st	9.4 Explain the performance parameters of ADC-Resolution, Quantization Error
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15	3rd week 13th Nov to 18th Nov	1st	DAC-Resolution, Accuracy and Conversion time
		2nd	DAC-Resolution, Accuracy and Conversion time
		3rd	DAC-Resolution, Accuracy and Conversion time
		4th	9.3 Explain R-2R Ladder type DAC
16	4th week 20th Nov to 25th Nov	1st	9.3 Explain R-2R Ladder type DAC
		2nd	9.3 Explain R-2R Ladder type DAC
		3rd	9.4 Explain the performance parameters of ADC-Resolution, Quantization Error
		4th	9.4 Explain the performance parameters of ADC-Resolution, Quantization Error
17	5th week 27th Nov to 30th Nov	1st	9.4 Explain the performance parameters of ADC-Resolution, Quantization Error
		2nd	9.5 Explain the Ramp type and Dual Slope ADC's
		3rd	9.5 Explain the Ramp type and Dual Slope ADC's
		4th	9.5 Explain the Ramp type and Dual Slope ADC's



Signature of the Teacher