DEPARTMENT OF ELECTRICAL ENGINEERING
ORISSA SCHOOL OF MINING ENGINEERING KEONJHAR
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LESSON PLAN

Discipline- ELECTRICAL ENGINEERING	Semester- 5th	Name of the Teaching Faculty- Er. Shradha Patra		
Subject- DIGITAL ELECTRONICS & MICROPROCESSOR Subject Code- TH3	No. of days/week class allotted-05	Semester From Date: 15/09/2022 To Date: 22/12/2022 Number of weeks- 13		
MONTH	**WEEK**	**NO. OF PERIODS AVAILABLE**	**CLASS DAY**	**THEORY TOPICS TO BE COVERED**
SEPTEMBER	**1st**	**5**	20/09/2022	Introduction & Briefing of the syllabus Introduction to Digital System Advantages of Digital over Analog System
			22/09/2022	Introduction to Number System- Base & Digit Of a Number System
			22/09/2022	Different types of NS & their bases
			23/09/2022	Conversion of Decimal to Binary NS with problems
			24/09/2022	Conversion of Decimal to Octal NS with problems
	2nd	**5**	27/09/2022	Conversion of Decimal to Hexadecimal NS with problems
			29/09/2022	Binary to decimal NS Conversion with problems
			29/09/2022	Octal to decimal NS Conversion with problems Hexadecimal to decimal NS Conversion with problems
			30/09/2022	Octal to Binary, Hexadecimal to Binary, Octal to Hexadecimal and vice-versa
			01/10//2022	Revision of NS Conversion
OCTOBER	**3rd**	**5**	11/10/2022	Binary addition, subtraction, Multiplication and Division
			11/10/2022	Revision & Question practice on NS
			13/10/2022	1's complement and 2's complement numbers for a binary number
			14/10/2022	Subtraction of binary numbers in 1's complement method.
			14/10/2022	Subtraction of binary numbers in 2's complement method
	4th	**5**	18/10/2022	Subtraction of binary numbers in 2's complement method problems practise
			19/10/2022	Use of Weighted & unweighted codes Conversion of Binary to BCD, 8421,XS-3, Gray code & vice-versa

			20/10/2022	Logic Gates: AND, OR, NOT, NAND, NOR gates with truth table
			21/10/2022	MONTHLY TEST-1
			21/10/2022	Logic gates: XOR & XNOR with Truth tables
	5th	4	26/10/2022	Realize AND, OR, NOT operations using NAND, NOR gates
			27/10/2022	Different postulates and De-Morgan's theorems in Boolean algebra
			28/10/2022	Use Of Boolean Algebra For Simplification Of Logic Expression
NOVEMBER	6th	5	28/10/2022	SOP form
			01/11/2022	POS form
			02/11/2022	Karnaugh Map For 2,3,4 Variables
			03/11/2022	Simplification of SOP And POS Logic Expression using K-Map.
			04/11/2022	Simplification of SOP And POS Logic Expression using K-Map.
			04/11/2022	Concept of combinational logic circuits. Half adder circuit and verify its functionality using truth table. HA using NAND & NOR gates
	7th	4	09/11/2022	Operation of 4 X 1 Multiplexers and 1 X 4 demultiplexer
			10/11/2022	Working of Binary-Decimal Encoder & 3 X 8 Decoder
			11/11/2022	Working of Two bit magnitude comparator. Sequential logic circuits
			11/11/2022	Necessity of clock and concept of level clocking and edge triggering Clocked SR flip flop with preset and clear inputs
	8th	4	15/11/2022	Construct level clocked JK flip flop using S-R flip-flop and explain with truth table Concept of race around condition and study of master slave JK flip flop
			17/11/2022	Give the truth tables of edge triggered D and T flip flops and draw their symbols Applications of flip flops & Define modulus of a counter
			18/11/2022	Distinguish between synchronous and asynchronous counters
			18/11/2022	4-bit asynchronous counter and its timing diagram
	9th	5	22/11/2022	Asynchronous decade counter
			23/11/2022	4-bit synchronous counter
			24/11/2022	MONTHLY TEST-2
			25/11/2022	Need for a Register & Working of SISO, SIPO, PISO, PIPO Register with truth table using flip flop
			25/11/2022	Introduction to Microprocessors,

				Microcomputers
	10th	5	29/11/2022	Architecture of Intel 8085A Microprocessor and description of each block
			30/11/2022	Pin diagram and description
			01/12/2022	Stack, Stack pointer & stack top
			02/12/2022	Interrupts
			02/12/2022	Opcode & Operand
DECEMBER	11th	5	06/12/2022	Differentiate between one byte, two byte & three byte instruction with example.
			07/12/2022	Instruction set of 8085 example
			08/12/2022	Instruction set of 8085 example
			09/12/2022	Fetch Cycle, Machine Cycle, Instruction Cycle, T-State
			09/12/2022	Timing Diagram for memory read, memory write, I/O read, I/O write
	12th	5	13/12/2022	Timing Diagram for 8085 instruction
			14/12/2022	Counter and time delay
			15/12/2022	Simple assembly language programming of 8085.
			16/12/2022	Basic Interfacing Concepts, Memory mapping & I/O mapping
			16/12/2022	Functional block diagram and description of each block of Programmable peripheral interfaceIntel 8255
	13th	5	20/12/2022	Functional block diagram and description of each block of Programmable peripheral interfaceIntel 8255
			21/12/2022	Application using 8255: Seven segment LED display
			22/12/2022	Application using 8255: Square wave generator
			23/12/2022	MONTHLY TEST-3
			23/12/2022	Doubt Clearance and Revision

Shradha Patra 28/10/2022

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OSME KEONJHAR

28/10/2022

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Subject- DIGITAL ELECTRONICS & MICROPROCESSOR LAB Subject Code- Pr3	No. of days/week class allotted- 02	Semester From Date: 15/09/2022 To Date: 22/12/2022 Number of weeks- 15		
MONTH	WEEK	NO. OF PERIODS AVAILABLE	CLASS DAY	THEORY TOPICS TO BE COVERED
SEPTEMBER	1st	3	23/09/2022	**(I) Digital Electronics** Verify truth tables of AND, OR, NOT, NOR, NAND, XOR, XNOR gates.
	2nd	3	30/09/2022	Implement a 4-bit Binary to Gray code converter
OCTOBER	3rd	3	14/10/2022	Implement a Single bit digital comparator
	4th	3	21/10/2022	Implement half adder and Full adder using logic gates. Implement half subtractor and Full subtractor using logic gates
	5th	3	28/10/2022	Implement various gates by using universal properties of NAND & NOR gates andverify truth table.
NOVEMBER	6th	3	04/11/2022	Study Multiplexer and demultiplexer
	7th	3	11/11/2022	Study of flip-flops. i)S-R flip flop ii) J-K flip flop iii)D flip flop iv) T flip flop
	8th	3	18/11/2022	1)Realize a 4-bit asynchronous UP/Down counter with a control for up/down counting. 2)Realize a 4-bit synchronous UP/Down counter with a control for up/down counting.
	9th	3	25/11/2022	1)Implement Mode-10 asynchronous counters. 2)Study shift registers.
DECEMBER	10th	3	02/12/2022	**(II) Microprocessor** **(A) General Programming using 8085A development**

				board 1. a. 1'S Complement. b. 2'S Complement.
	11th	3	09/12/2022	2)a. Addition of 8-bit number. b. Subtraction of 8-bit number resulting 8/16 bit number. 3)a. Decimal Addition 8-bit number. b. Decimal Subtraction 8-bit number
	12th	3	16/12/2022	3)a. Compare between two numbers. b. Find the largest in an Array 4)Block Transfer.
	13th	3	23/12/2022	**(B)Interfacing using 8085** 1. Traffic light control using 8255. 2. Generation of square wave using 8255

Spatra
14/10/2022

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