




LESSON PLAN, SESSION-WINTER-2023-24
SWAMI VIVEKANANDA SCHOOL OF ENGG & TECH, BBSR

DISCIPLINE- ETC ENGG.	SEMISTER- 5TH	NEME OF THE FACULTY-ER. SRIDHARA KUMAR RATH
SUBJECT- VLSI	NO OF CLASS ALLOTTED/WEEK-4	SEMESTER FROM-01.08.2023 TO 30.11.2023.
WEEK	DATE	TOPICS
1ST	02.08.23	Introduction to VLSI & MOS Transistor
	03.08.23	Historical perspective- Introduction
	05.08.23	Classification of CMOS digital circuit types
2ND	07.08.23	Introduction to MOS Transistor & Basic operation of MOSFET.
	09.08.23	Structure and operation of MOSFET (n-MOS enhancement type) & COMS
	10.08.23	
	12.08.23	MOSFET V-I characteristics
3RD	14.08.23	Working of MOSFET capacitances
	16.08.23	Modelling of MOS Transistors including Basic concept the SPICE level-1 models, the level-2 and level-3 model.
	17.08.23	Modelling of MOS Transistors including Basic concept the SPICE level-1 models, the level-2 and level-3 model.
	19.08.23	Flow Circuit design procedure
4TH	21.08.23	VLSI Design Flow & Y chart
	23.08.23	Design Hierarchy
	24.08.23	VLSI design styles-FPGA, Gate Array Design, Standard cells based, Full custo
	26.08.23	VLSI design styles-FPGA, Gate Array Design, Standard cells based, Full custo
5TH	28.08.23	REVISION
	30.08.23	Fabrication of MOSFET
	31.08.23	Simplified process sequence for fabrication
1ST	02.09.23	Basic steps in Fabrication processes Flow
2ND	04.09.23	Fabrication process of nMOS Transistor
	06.09.23	CMOS n-well Fabrication Process Flow
	07.09.23	MOS Fabrication process by n-well on p-substrate
	09.09.23	MOS Fabrication process by n-well on p-substrate
3RD	11.09.23	CMOS Fabrication process by P-well on n-substrate
	13.09.23	Layout Design rules
	14.09.23	Stick Diagrams of CMOS inverter
	16.09.23	Stick Diagrams of CMOS inverter
4TH	18.9.23	MOS Inverter
	20.09.23	Basic nMOS inverters
	21.09.23	Working of Resistive-load Inverter
	23.09.23	Inverter with n-Type MOSFET Load – Enhancement Load, Depletion n-MOS inverter
	25.09.23	Inverter with n-Type MOSFET Load – Enhancement Load, Depletion n-MOS inverter
	25.09.23	CMOS inverter – circuit operation and characteristics and interconnect effects: Delay time definitions

5TH	27.09.23	CMOS inverter – circuit operation and characteristics and interconnect effects: Delay time definitions
	28.09.23	CMOS Inventor design with delay constraints – Two sample mask lay out for p-type substrate
	30.09.23	CMOS Inventor design with delay constraints – Two sample mask lay out for p-type substrate
1ST	04.10.23	CLASS TEST
	05.10.23	Static Combinational, Sequential, Dynamics logic circuits & Memories
	07.10.23	Define Static Combinational logic ,working of Static CMOS logic circuits (Two input NAND Gate)
2ND	09.10.23	CMOS logic circuits (NAND2 Gate)
	11.10.23	CMOS Transmission Gates(Pass gate)
	12.10.23	Complex Logic Circuits - Basics
	14.10.23	Classification of Logic circuits based on their temporal behaviour
3RD	16.10.23	INTERNAL
	17.10.23	INTERNAL
	18.10.23	INTERNAL
	19.10.23	INTERNAL
4TH	21.10.23 - 28.10.23	PUJA HOLIDAYS
5TH	30.10.23	Classification of Logic circuits based on their temporal behaviour
1ST	01.11.23	SR Flip latch Circuit
	02.11.23	Clocked SR latch only
	04.11.23	CMOS D latch
2ND	06.11.23	Basic principles of Dynamic Pass Transistor Circuits
	08.11.23	Dynamic RAM, SRAM
	09.11.23	Dynamic RAM, SRAM
	11.11.23	Flash memory
3RD	13.11.23	System Design method & synthesis
	15.11.23	Design Language (SPL & HDL)& HDL & EDA tools & VHDL and packages Xlinx
	16.11.23	Design strategies & concept of FPGA with standard cell based design
	18.11.23	VHDL for design synthesis using CPLD or FPGA
4TH	20.11.23	Raspberry Pi - Basic idea
	22.11.23	Introduction to Embedded Systems
	23.11.23	Embedded Systems Overview,list of embedded systems,characteristics ,example – A Digital Camera
	25.11.23	Embedded Systems Technologies--Technology – Definition -Technology for Embedded Systems -Processor Technology -IC Technology
5TH	27.11.23	Design Technology-Processor Technology,General Purpose Processors – Software, Basic Architecture of Single Purpose Processors – Hardware
	29.11.23	Application – Specific Processors, Microcontrollers, Digital Signal Processors(DSP)
	30.11.23	Cell), PLD (Programmable Logic Device) Basic idea of Arduino micro controller


H. O. D.


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