LESSON PLAN-2021-22 (WINTER-2021)

SWAMI VIVEKANANDA SCHOOL OF ENGG & TECH, BBSR

DISCIPLINE-ETC	Semester-5TH	Name of teaching faculty-JAYALAXMI DAS
SUBJECT-VLSI &EMBEDDED SYSTEM	No of days/ per week class alloted-5	SEM From date- 01/09/2021 No of weeks-16
Week	**Class day**	**Theory Topics**
1ST	02.10.21	Historical perspective- Introduction
2ND	04.10.21	Classification of CMOS digital circuit types
	05.10.21	Introduction to MOS Transistor& Basic operation of MOSFET.
	06.10.21	Structure and operation of MOSFET (n-MOS enhancement type) & COMS
	07.10.21	MOSFET V-I characteristics,
	09.10.21	Working of MOSFET capacitances
	11.10.21	Modelling of MOS Transistors including Basic concept the SPICE level-1 models, the level-2 and level-3 model.
3RD	12.10.21 to 20.10.21	DUSSERA modelling of MOS Transistors including Basic concept the SPICE level-1 models, the level-2
4TH	21.10.21	Flow Circuit design procedures
	23.10.21	VLSI Design Flow & Y chart
5TH	25.10.21	Design Hierarchy
	26.10.21	VLSI design styles-FPGA, Gate Array Design, Standard cells based, Full custom
	27.10.21	Simplified process sequence for fabrication
	28.10.21	Basic steps in Fabrication processes Flow
	30.10.21	Fabrication process of nMOS Transistor
1ST	01.11.21	CMOS n-well Fabrication Process Flow
	02.11.21	MOS Fabrication process by n-well on p-substrate
	03.11.21	MOS Fabrication process by n-well on p-substrate
	06.11.21	Layout Design rules
2ND	08.11.21	Stick Diagrams of CMOS inverter
	09.11.21	Basic nMOS inverters,
	10.11.21	Working of Resistive-load Inverter
	11.11.21	Inverter with n-Type MOSFET Load – Enhancement Load, Depletion n-MOS inverter
	13.11.21	CMOS inverter – circuit operation and characteristics and interconnect effects: Delay time definitions
3RD	15.11.21	CMOS Inventor design with delay constraints – Two sample mask lay out for p-type substrate.
	16.11.21	Define Static Combinational logic ,working of Static CMOS logic circuits (Two-input NAND Gate)
	17.11.21	CMOS logic circuits (NAND2 Gate)
	18.11.21	CMOS Transmission Gates(Pass gate)
	20.11.21	Complex Logic Circuits - Basics
4TH	22.11.21	Classification of Logic circuits based on their temporal behaviour
	23.11.21	SR Flip latch Circuit,
	24.11.21	Clocked SR latch only.
	25.11.21	CMOS D latch.

P	27.11.21	Basic principles of Dynamic Pass Transistor Circuits
TH	29.11.21	Dynamic RAM, SRAM,
	30.11.21	Flash memory
1ST	01.12.21	Design Language (SPL & HDL)& HDL & EDA tools & VHDL and packages Xlinx
	02.12.21	VHDL for design synthesis using CPLD or FPGA
	04.12.21	Raspberry Pi - Basic idea
2ND	06.12.21	Embedded Systems Overview,list of embedded systems,characteristics ,example – A Digital Camera
	07.12.21	2 Embedded Systems Technologies--Technology – Definition -Technology for Embedded Systems -Processor Technology -IC Technology
	08.12.21	Processor technology
	09.12.21	IC technogy
	11.12.21	Design Technology-
3RD	13.12.21	Processor technology
	14.12.21	General purpose processors-Software
	15.12.21	basic architecture of single purpose processor
	16.12.21	Application – Specific
	18.12.21	Microcontrollers
4TH	20.12.21	Digital signal processing(DSP)
	21.12.21	Specific processor
	22.12.21	IC Technology
	23.12.21	Full custom VLSI
5TH	27.12.21	Semi custom VLSI
	28.12.21	Gate Array & Standard Cell
	29.12.21	Programmable logic device(PLD)
	30.12.21	Basic idea of Arduino micro controller

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