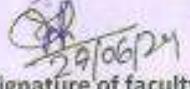


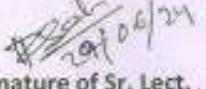


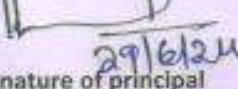
## LESSON PLAN

Discipline: ETC	Semester: 5 <sup>th</sup>	Name Of The Teaching Faculty: SUGANDHA PUSPITA MADHUJHARA
Subject: VLSI&ES (TH-2)	No. Of Days Per Week Class Allotted: 04 P	Semester From Date: 01.07.2024 To Date: 08.11.2024 No. of weeks: 15
<b>Week</b> <b>Class Day</b> <b>Theory Topic</b>		
1 <sup>st</sup> week	1 <sup>st</sup>	➤ Introduction to VLSI
	2 <sup>nd</sup>	➤ Classification of CMOS digital circuits
	3 <sup>rd</sup>	➤ Introduction to MOS transistor, structure
	4 <sup>th</sup>	➤ Basic operation of MOS
2 <sup>nd</sup> week	1 <sup>st</sup>	➤ MOS I-V characteristics
	2 <sup>nd</sup>	➤ MOS capacitance
	3 <sup>rd</sup>	➤ Modelling of MOS
	4 <sup>th</sup>	➤ Flow of circuit design procedure
3 <sup>rd</sup> week	1 <sup>st</sup>	➤ Y-chart
	2 <sup>nd</sup>	➤ Design hierarchy
	3 <sup>rd</sup>	➤ VLSI design style-FPGA, gate array design, Standard cell-based design, full custom design
	4 <sup>th</sup>	➤ Fabrication of MOSFET, Basic steps of fabrication
4 <sup>th</sup> week	1 <sup>st</sup>	➤ Fabrication of nMOS
	2 <sup>nd</sup>	➤ Fabrication of pMOS
	3 <sup>rd</sup>	➤ Some important terms related to fabrication
	4 <sup>th</sup>	➤ MOS fabrication process by n-well on p-substrate
5 <sup>th</sup> week	1 <sup>st</sup>	➤ MOS fabrication process by n-well on p-substrate
	2 <sup>nd</sup>	➤ MOS fabrication process by p-well on n-substrate
	3 <sup>rd</sup>	➤ MOS fabrication process by p-well on n-substrate
	4 <sup>th</sup>	➤ Layout design rule
6 <sup>th</sup> week	1 <sup>st</sup>	➤ Stick diagram
	2 <sup>nd</sup>	➤ nMOS inverter
	3 <sup>rd</sup>	➤ VTC of nMOS inverter
	4 <sup>th</sup>	➤ Resistive load nMOS inverter
7 <sup>th</sup> week	1 <sup>st</sup>	➤ Inverter with MOSFET load
	2 <sup>nd</sup>	➤ Inverter with MOSFET load
	3 <sup>rd</sup>	➤ CMOS inverter
	4 <sup>th</sup>	➤ CMOS inverter
8 <sup>th</sup> week	1 <sup>st</sup>	➤ Delay time definitions
	2 <sup>nd</sup>	➤ Inverter with delay constraints
	3 <sup>rd</sup>	➤ Static combinational digital logic design
	4 <sup>th</sup>	➤ 2 i/p CMOS NAND gate
9 <sup>th</sup> week	1 <sup>st</sup>	➤ Layout of simple CMOS logic gates
	2 <sup>nd</sup>	➤ Complex logic circuits
	3 <sup>rd</sup>	➤ CMOS transmission gate
	4 <sup>th</sup>	➤ Sequential MOS logic circuits
10 <sup>th</sup> week	1 <sup>st</sup>	➤ S-R latch circuit
	2 <sup>nd</sup>	➤ Clocked S-R latch
	3 <sup>rd</sup>	➤ Dynamic logic circuits
	4 <sup>th</sup>	➤ Dynamic pass transistor circuits
11 <sup>th</sup> week	1 <sup>st</sup>	➤ Semiconductor memories, DRAM
	2 <sup>nd</sup>	➤ DRAM
	3 <sup>rd</sup>	➤ SRAM, Flash memory
	4 <sup>th</sup>	➤ Design Language (SPL & HDL) & HDL

12 <sup>th</sup> week	1 <sup>st</sup>	➤ EDA tools & VHDL and packages Xilinx
	2 <sup>nd</sup>	➤ Design strategies & concept of FPGA with standard cell-based design
	3 <sup>rd</sup>	➤ VHDL for design synthesis using CPLD or FPGA
	4 <sup>th</sup>	➤ Raspberry Pi - Basic idea
13 <sup>th</sup> week	1 <sup>st</sup>	➤ Embedded Systems Overview, list of embedded systems, characteristics, example
	2 <sup>nd</sup>	➤ Digital camera
	3 <sup>rd</sup>	➤ Embedded system technology- definition, processor technology, IC technology, Design technology
	4 <sup>th</sup>	➤ General Purpose Processors - Software, Basic Architecture of Single Purpose Processors - Hardware
14 <sup>th</sup> week	1 <sup>st</sup>	➤ Application - Specific Processors, Microcontrollers, Digital Signal Processors (DSP)
	2 <sup>nd</sup>	➤ Application - Specific Processors, Microcontrollers, Digital Signal Processors (DSP)
	3 <sup>rd</sup>	➤ Basic idea of Arduino micro controller
	4 <sup>th</sup>	➤ IC Technology- Full Custom / VLSI, Semi-Custom ASIC (Gate Array & Standard Cell), PLD
15 <sup>th</sup> week	1 <sup>st</sup>	➤ IC Technology- Full Custom / VLSI, Semi-Custom ASIC (Gate Array & Standard Cell), PLD
	2 <sup>nd</sup>	➤ Basic idea of Arduino micro controller
	3 <sup>rd</sup>	➤ Basic idea of Arduino micro controller
	4 <sup>th</sup>	➤ REVISION

  
Signature of faculty

  
Signature of Sr. Lect.

  
Signature of principal

~~29/06/21~~  
29/06/21  
Signature of Sr. Lect.  
Chair of Dept. HOD  
Technical & ETC Faculty  
2021-22