

5th ETC

BHARAT INSTITUTE OF ENGINEERING & TECHNOLOGY

**SIVARAM VIHAR, GHATAKESWAR HILLS
MOHADA, BERHAMPUR (GM.)**



STUDENT'S ATTENDANCE REGISTER

Time	9:05	9:55	10:45	11:35	12:25
Day	9:55	10:45	11:35	12:25	01:15
Tue			✓		
Thue				✓	
Fri	✓				
Sat		✓			

Year/ Session	3rd year , 2021-22
Semester & Branch	5th Sem & E&TC
Subject with Code	VLSI & Embedded System & Th-2
Name of the Faculty Member	Mandali Padhy

B.I.E.T. SYLLABUS COVERAGE

TOPIC	DATE	SIGNATURE OF THE FACULTY	SIGNATURE OF THE H.O.D.
<u>Unit - 1</u>			
<u>Introduction to VLSI & MOS Transistor</u>			
1.1 Historical perspective - Introduction	15/9/22	M. P. Pathy	
1.2 Classification of CMOS digital circuit types.	16/9/22		
1.3 Introduction to MOS transistor & basic operation of MOSFET.	20/9/22		
1.4 Structure and operation of MOSFET (n-mos enhancement type) & CMOS.	22/9/22	M. P. Pathy	
1.5 MOSFET V-I characteristics.	23/9/22		
1.6 Working of MOSFET capacitance	24/9/22	M. P. Pathy	K. Pradeep 12/9/22
1.7 Modelling of MOS Transistors including basic concept the SPICE. level-1 models, the level-2 & level-3 model.	27/9/22	M. P. Pathy	
1.8 Flow circuit design procedure.	30/9/22	M. P. Pathy	M. P. Pathy 12/9/22
Seen		K. Pradeep 12/9/22	

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1.9 VLSI design flow & Y chart.	20/9/22	<i>[Signature]</i>	
1.10 Design Hierarchy.			
1.11 VLSI design styles - FPA, Gate Array design, standard cells based, Full custom.	21/10/22	<i>[Signature]</i>	
<u>Unit :- 2</u>			
<u>Fabrication OF MOSFET</u>			
2.1 Simplified process sequence for fabrication.	13/10/22	<i>[Signature]</i>	<i>[Signature]</i> 12/9/22
2.2 Basic steps in fabrication process flow.	14/10/22	<i>[Signature]</i>	
2.3 Fabrication process of nmos Transistor.	15/10/22		
2.4 CMOS n-well Fabrication Process flow.	18/10/22	<i>[Signature]</i>	
2.5 MOS fabrication process by n-well on P-substrate.	20/10/22	<i>[Signature]</i>	

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2.6 CMOS fabrication process by p-well on n-substrate.	21/10/22 22/10/22	<i>Mpachy</i>	
2.7 Layout design rules.	22/10/22	<i>Mpachy</i>	
2.8 Stick diagram of CMOS inverter.			

Unit :- 3

MOS Inverter

3.1 Basic nmos inverters.	22/10/22	<i>Mpachy</i>	<i>4pmachy 12/9/22</i>
3.2 Working of Resistive-load inverters.	22/10/22	<i>Mpachy</i>	
3.3 Inverter with n-type MOSFET load - Enhancement load, Depletion n-mos inverter	29/10/22 1/11/22	<i>Mpachy</i>	
3.4 CMOS inverter - circuit operation and characteristics and interconnect effects : Delay time, definitions.	3/11/22 9/11/22	<i>Mpachy</i>	<i>Mpachy 12/9/22</i>

*Seen
12.9.22*

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TOPIC	DATE	SIGNATURE OF THE FACULTY	SIGNATURE OF THE H.O.D.
3.5 CMOS inverter design with delay constraints - Two sample mask layout for P-type substrate.	11/11/22 12/11/22	(Signature)	
<u>Unit - 4</u>			
<u>Static Combinational, Sequential, Dynamics logics circuits and Memory.</u>			
4.1 Define static combinational logic, Working of static CMOS logic circuits (Two-input NAND Gate)	11/11/22 12/11/22 13/11/22	(Signature)	(Signature) 12/11/22
4.2 CMOS logic circuits (NAND2 Gate)	12/11/22	(Signature)	
4.3 CMOS Transmission Gates (pass gates)	17/11/22	(Signature)	

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	TOPIC	DATE	SIGNATURE OF THE FACULTY	SIGNATURE OF THE H.O.D.
4.4	Complex logic circuits - Basics	22/11/22	<i>[Signature]</i>	<i>[Signature]</i> 12/9/22
4.5	Classification of Logic Circuits based on their temporal behaviour	24/11/22	<i>[Signature]</i>	
4.6	SR flip-flop - latch circuit.	26/11/22	<i>[Signature]</i>	
4.7	Clocked SR latch Only.	29/11/22	<i>[Signature]</i>	
4.8	CMOS D-latch.			
4.9	Basic principles of Dynamic pass transistor Circuits.	1/12/22		
4.10	Dynamic RAM, SRAM.	2/12/22	<i>[Signature]</i>	
4.11	Flash memory.			

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TOPIC	DATE	SIGNATURE OF THE FACULTY	SIGNATURE OF THE H.O.D.
<u>Unit - 5</u> <u>System Design method & Synthesis</u>			
5.1 Design Language (SPL & HDL) & HDL & EDA tools & VHDL & packages xlinx.	3/12/22 6/12/22	Mpaathu	
5.2 Design Strategies & Concept of FPGA with standard cell based design.	8/12/22 9/12/22	Mpaathu	G. Prakash 12/12/22
5.3 VHDL for design Synthesis using CPLD or FPGA.	10/12/22	Mpaathu	
5.4 Raspberry Pi - Basic idea			

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TOPIC	DATE	SIGNATURE OF THE FACULTY	SIGNATURE OF THE H.O.D.
<u>Unit-6</u>			
<u>Introduction to Embedded Systems</u>			
6.1 Embedded Systems overview, list of embedded systems, Characteristics, example - A digital camera.	13/12/22	<i>Upadhyay</i>	
6.2 Embedded Systems Technologies Technology definition - Technology for embedded system	15/12/22	<i>Upadhyay</i>	<i>Prakash</i> 12/5/22
- Processor Technology - IC Technology	16/12/22		
6.3 Design Technology - processor Technology, General purpose processors - SW basic architecture of single purpose processor - H/w.	17/12/22	<i>Upadhyay</i>	<i>Upadhyay</i> 12/9/22

18/12/22

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TOPIC	DATE	SIGNATURE OF THE FACULTY	SIGNATURE OF THE H.O.D.
6.4 Application - Specific processors, microcontrollers, Digital signal Processors (DSP)	20/12/22	Upadhyay	
6.5 Ic Technology - full custom/ VLSI, semi-custom ASIC (Gate Array & standard cell), PLD (programmable Logic Device)	22/12/22	Upadhyay	Prasanna 22/12/22
6.6 Basic Idea of Arduino micro Controller.	Seen Pradyun 12.9.22	Upadhyay 18/11/22	Upadhyay 22/9/22