

ORISSA SCHOOL OF ENGINEERING & POLYTECHNIC
DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION
LESSON PLAN FOR THE SESSION- 2023-24

SUBJECT: VLSI & EMBEDDED SYSTEM

BRANCH: E&TC

NAME OF THE FACULTY: ER. MITHUN KUMAR SAHU

SEMESTER: 5TH

DATE	LECTURE NO.	TOPIC TO BE COVERED
01/08/2023	1	Introduction to VLSI
02/08/2023	2	Classification of CMOS digital circuits
03/08/2023	3	Introduction to MOS transistor, structure
04/08/2023	4	Basic operation of MOS
08/08/2023	5	MOS I-V characteristics
09/08/2023	6	MOS capacitance
10/08/2023	7	Modelling of MOS
11/08/2023	8	Flow of circuit design procedure
16/08/2023	9	Y-chart
17/08/2023	10	Design hierarchy
18/08/2023	11	VLSI design style-FPGA, gate array design, Standard cell-based design, full custom design
22/08/2023	12	Fabrication of MOSFET, Basic steps of fabrication
23/08/2023	13	Fabrication of nMOS
24/08/2023	14	Fabrication of pMOS
25/08/2023	15	Some important terms related to fabrication
29/08/2023	16	Performance test
31/08/2023	17	MOS fabrication process by n-well on p-substrate
01/09/2023	18	MOS fabrication process by n-well on p-substrate
05/09/2023	19	MOS fabrication process by p-well on n-substrate
07/09/2023	20	MOS fabrication process by p-well on n-substrate
08/09/2023	21	Layout design rule
12/09/2023	22	Stick diagram
13/09/2023	23	nMOS inverter
14/09/2023	24	VTC of nMOS inverter
15/09/2023	25	Resistive load nMOS inverter
21/09/2023	26	Inverter with MOSFET load
26/09/2023	27	Inverter with MOSFET load
27/09/2023	28	CMOS inverter
28/09/2023	29	CMOS inverter
03/10/2023	30	Delay time definitions
04/10/2023	31	Inverter with delay constraints
05/10/2023	32	Static combinational digital logic design
06/10/2023	33	2 i/p CMOS NAND gate
10/10/2023	34	Layout of simple CMOS logic gates
11/10/2023	35	Complex logic circuits
12/10/2023	36	CMOS transmission gate
13/10/2023	37	Sequential MOS logic circuits
17/10/2023	38	Class test-I
18/10/2023	39	S-R latch circuit
19/10/2023	40	Clocked S-R latch
20/10/2023	41	Dynamic logic circuits
31/10/2023	42	Dynamic pass transistor circuits
01/11/2023	43	Semiconductor memories, DRAM
02/11/2023	44	DRAM
03/11/2023	45	SRAM, Flash memory
07/11/2023	46	Design Language (SPL & HDL) & HDL

08/11/2023	47	EDA tools & VHDL and packages Xilinx
09/11/2023	48	Design strategies & concept of FPGA with standard cell-based design
10/11/2023	49	CLASS TEST QUESTION DISCUSSION & DISTRIBUTION OF EVALUATED ANSWER SHEET TO THE STUDENT FOR THEIR REFERENCES
14/11/2023	50	VHDL for design synthesis using CPLD or FPGA
15/11/2023	51	Raspberry Pi - Basic idea
16/11/2023	52	Embedded Systems Overview, list of embedded systems, characteristics, example
17/11/2023	53	Digital camera
21/11/2023	54	Embedded system technology- definition, processor technology, IC technology, Design technology
22/11/2023	55	General Purpose Processors - Software, Basic Architecture of Single Purpose Processors - Hardware
23/11/2023	56	Application - Specific Processors, Microcontrollers, Digital Signal Processors (DSP)
24/11/2023	57	IC Technology- Full Custom / VLSI, Semi-Custom ASIC (Gate Array & Standard Cell), PLD
28/11/2023	58	Basic idea of Arduino micro controller
29/11/2023	59	Class test-II
30/11/2023	60	MCQ, Class test question discussion

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