

ORISSA SCHOOL OF ENGINEERING & POLYTECHNIC
DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION

LESSON PLAN FOR THE SESSION 2023-24

SUBJECT- DIGITAL ELECTRONICS (TH-3)

BRANCH-E&TC

NAME OF THE FACULTY-MITHUN KUMAR SAHU

SEMESTER-3RD

UNIT	LECTURE NO.	DATE	TOPIC TO BE COVERED
1	1	9/10/23	<u>BASICS OF DIGITAL ELECTRONICS</u> NUMBER SYSTEM-BINARY, OCTAL, DECIMAL, HEXADECIMAL- CONVERSION FROM ONE SYSTEM TO DECIMAL SYSTEM.
	2	23/10/23	DECIMAL SYSTEM TO ANY BASE,
	3	1/11/23	BINARY TO OCTAL, OCTAL TO BINARY, BINARY TO HEXADECIMAL, OCTAL TO HEXADECIMAL, HEXADECIMAL TO OCTAL
	4	2/11/23	ARITHMETIC OPERATION-ADDITION, SUBTRACTION, MULTIPLICATION & DIVISION,
	5	3/11/23	1'S & 2'S COMPLEMENT OF BINARY NUMBERS & SUBTRACTION
	6	5/11/23	DIGITAL CODE & ITS APPLICATION & DISTINGUISH BETWEEN WEIGHTED AND NON-WEIGHTED CODE,
	7	6/11/23	BINARY CODES, EXCESS-3 AND GRAY CODES.
	8	8/11/23	LOGIC GATES-AND, OR, NOT, NAND, NOR, EX-OR, EX-NOR SYMBOL, FUNCTION, EXPRESSION, TRUTH TABLE AND TIMING DIAGRAM.
	9	9/11/23	UNIVERSAL GATES AND ITS REALIZATION (USING NAND).
	10	10/11/23	UNIVERSAL GATES AND ITS REALIZATION (USING NOR).
2	11	12/11/23	BOOLEAN ALGEBRA, BOOLEAN EXPRESSIONS, DEMORGAN'S THEOREM.
	12	13/11/23	REPRESENT LOGIC EXPRESSION-SOP
	13	15/11/23	REPRESENT LOGIC EXPRESSION-POS
	14	16/11/23	KARNAUGH MAP 3-VARIABLE & MINIMIZATION OF LOGICAL EXPRESSIONS.
	15	17/11/23	KARNAUGH MAP 3-VARIABLE & MINIMIZATION OF LOGICAL EXPRESSIONS.
	16	20/11/23	KARNAUGH MAP 4-VARIABLE & MINIMIZATION OF LOGICAL EXPRESSIONS
	17	22/11/23	KARNAUGH MAP 4-VARIABLE & MINIMIZATION OF LOGICAL EXPRESSIONS,
	18	23/11/23	DON'T CARE CONDITIONS.
	19	24/11/23	<u>COMBINATIONAL LOGIC CIRCUITS</u> HALF ADDER, FULL ADDER

	20	26/11/23	HALF SUBTRACTOR, FULL SUBTRACTOR
	23	27/11/23	SERIAL AND PARALLEL BINARY 4 BIT ADDER
	22	29/11/23	MULTIPLEXER (4:1), DE-MULTIPLEXER(1:4)
	23	30/11/23	DECODER, ENCODER,
	24	1/12/23	DIGITAL COMPARATOR (3 BIT)
	25	3/12/23	SEVEN SEGMENT DECODER (DEFINITION, RELEVANCE, GATE LEVEL OF LOGIC CIRCUIT, TRUTH TABLE AND ITS APPLICATIONS).
	26	4/12/23	PRINCIPLE OF OPERATION OF FLIP-FLOPS-SR FLIP-FLOP USING NAND,NOR LATCH(UN CLOCKED)
	27	6/12/23	CLOCKED SR FLIP-FLOP.
	28	7/12/23	CLOCKED D FLIP-FLOP.
	29	8/12/23	CLOCKED JK FLIP-FLOP.
3	30	10/12/23	CLOCKED T FLIP-FLOP.
	31	11/12/23	SYMBOL, LOGIC CIRCUIT, TRUTH TABLE AND APPLICATIONS OF MASTER SLAVE JK FLIP-FLOP.
	32	13/12/23	CONCEPT OF RACE AROUND CONDITION.
	33	14/12/23	CLASS TEST
	34	15/12/23	<u>REGISTERS, MEMORIES & PLD</u> SHIFT REGISTERS-SERIAL-IN SERIAL-OUT (SISO).
4	35	16/12/23	SERIAL-IN PARALLEL-OUT(SIPO)
	36	18/12/23	DISCUSSION OF CLASS TEST-1 QUESTION& DISTRIBUTION OF EVALUATED ANSWER SHEET TO THE STUDENT FOR THEIR REFERENCES
	37	20/12/23	PARALLEL-IN SERIAL-OUT (PISO)
	38	21/12/23	PARALLEL-IN PARALLEL-OUT (PIPO)
	39	22/12/23	UNIVERSAL SHIFT REGISTER AND ITS APPLICATION.
	40	24/12/23	DEFINE COUNTER, TYPES OF COUNTER AND ITS APPLICATIONS.
	41	27/12/23	BINARY COUNTER
	42	28/12/23	ASYNCHRONOUS RIPPLE UP-COUNTER
	43	31/12/23	ASYNCHRONOUS RIPPLE DOWN-COUNTER
	44	1/1/22	DECADE COUNTER
5	45	3/1/22	SYNCHRONOUS COUNTER
	46	4/1/22	RING COUNTER
	47	7/1/22	<u>A/D AND D/A CONVERTERS</u> NECESSITY OF A/D AND D/A CONVERTER
	48	8/1/23	D/A CONVERSION USING WEIGHTED RESISTORS.
	49	10/1/23	D/A CONVERSION USING R-2R LADDER (WEIGHTED RESISTORS) NETWORK.
	50	11/1/23	A/D CONVERSION USING COUNTER METHOD
	51	15/1/23	A/D CONVERSION USING SUCCESSIVE APPROXIMATE METHOD DISTRIBUTION OF ASSIGNMENT QUESTION

	52	17/1/23	<u>LOGIC FAMILIES</u> VARIOUS LOGIC FAMILIES & TYPES ACCORDING TO THE IC FABRICATION PROCESS.
	53	18/1/23	CHARACTERISTICS OF DIGITAL ICs-PROPAGATION DELAY, FAN-OUT, FAN-IN, POWER DISSIPATION, NOISE MARGIN, POWER SUPPLY REQUIREMENT, AND SPEED WITH REFERENCE TO LOGIC FAMILIES.
	54	21/1/23	FEATURES, CIRCUIT OPERATION AND VARIOUS APPLICATIONS OF TTL (NAND)
	55	22/1/23	FEATURES, CIRCUIT OPERATION AND VARIOUS APPLICATIONS OF CMOS (NAND)
	56	24/1/23	FEATURES, CIRCUIT OPERATION AND VARIOUS APPLICATIONS OF CMOS (NOR)
	57	25/1/23	CLASS TEST
	58	28/1/23	DISCUSSION OF CLASS TEST-2 QUESTION & DISTRIBUTION OF EVALUATED ANSWER SHEET TO THE STUDENT FOR THEIR REFERENCES
6	59	29/1/23	OMR TEST
	60	31/1/23	PREVIOUS SEMESTER QUESTION DISCUSSION

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