

PADMASHREE KRUTARTHA ACHARYA INSTITUTE OF ENGINEERING & TECHNOLOGY, BARGARH



LESSON PLAN Session-2023-2024

Discipline: Computer Sc. & Engg Engg. Semester: 3rd

Subject: Digital Electronics

Name of the Teaching Faculty: Niranjan Behara

Subject: Digital Electronics No. of Days/per week class allotted 04

Semester From Date: 01/08/2023 To Date: 30/11/2023 No. of Weeks: 15

Week	Class Day	Theory / Practical Topics
01	01	Basics of Digital Electronics, Number Systems Decimal Number System
	02	Binary, octal and Hexadecimal number System
	03	Arithmetic operation 1's and 2's complement Method of Binary number and subtraction
	04	Conversion from one system to another system
02	05	Revision and Discussion of Number System
	06	Digital code & its application, weighted and non-weighted code, XS-3 code
	07	Gray code. Logic gate and truth table
	08	Universal gate and Realisation
03	09	Boolean Algebra and Boolean Expression
	10	Represent Logic Expression: SOP and POS Forms
	11	K-map (2, 3 & 4 Variable), Minimization of logic expression
	12	Don't care and Practise of k-map

Niranjan Behara
Signature of the Faculty

Subject: Digital Electronics No. of Days/per week class allotted 04

Semester From Date : 01/08/2023 To Date : 30/11/2023 No. of Weeks : 15

Week	Class Day	Theory /Practical Topics
04	13	Half adder, Full adder
	14	Half subtractor and full subtractor
	15	Serial and Parallel 4 bit adder
	16	Revision
05	17	Revision
	18	Multiplexor (4:1)
	19	De-multiplexor (1:4)
	20	De-coder
06	21	Encoder
	22	Digital comparator (3 bits)
	23	Seven segment decoder
	24	Revision of Unit 1 and 2

Niranjan Behera
Signature of the Faculty

Subject: Digital Electronics No. of Days/per week class allotted 04

Semester From Date: 01/08/2023 To Date: 30/11/2023 No. of Weeks: 15

Week	Class Day	Theory / Practical Topics
07	25	Principle of flip-flop operation
	26	SR FIF using NAND and NOR gate
	27	NOR LATCH (unlocked)
	28	Clocked SR
08	29	D flip-flop
	30	J-K flip-flop
	31	J-K master-slave flip-flop
	32	T flip-flop
09	33	Conversion one FIF to another FIF
	34	Concept of racing & how it can be avoided
	35	Revision
	36	Revision

Niranjana Behera
Signature of the Faculty

Subject: Digital Electronics No. of Days/per week class allotted 04

Semester From Date: 01/08/2023 To Date: 30/11/2023 No. of Weeks: 15

Week	Class Day	Theory / Practical Topics
10	37	Shift register - SISO, SIPO
	38	PISO and PIPO
	39	Universal shift register and its applications
	40	Counter
11	41	Binary counter, Asynchronous ripple counter (UP & DOWN)
	42	Decade counter
	43	Synchronous counter
	44	Ring counter, concept of memories RAM and ROM
12	45	Necessity of A/D and D/A conversion
	46	D/A conversion using weighted resistor method
	47	D/A conversion using successive approx. method
	48	D/A conversion using R-2R ladder (weighted resistor network)

Niranjan Behera
Signature of the Faculty

Subject: Digital Electronics No. of Days/per week class allotted 04

Semester From Date: 01/08/2023 To Date: 30/11/2023 No. of Weeks: 15

Week	Class Day	Theory / Practical Topics
13	49	Repeat D/A conversion using R-2R ladder
	50	A/D conversion using counter method
	51	A/D conversion using counter method
	52	Revision of unit-5 & logic families
14	53	Logic families categories to IC fabrication process
	54	Characteristics of Digital ICs propagation delay
	55	Fan-in and fan-out
	56	Power Dissipation, Noise margin
15	57	Power supply requirement & Speed with reference to logic families
	58	TTL (NAND), CMOS (NAND & NOR)
	59	Revision and question discussion of previous question
	60	Revision and question discussion of previous question

Niranjana Behara
Signature of the Faculty