



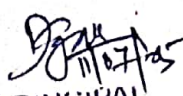
SYNERGY SCHOOL OF ENGINEERING
DEPARTMENT OF ELECTRICAL ENGINEERING

Discipline: Computer science Engineering	Semester: - 3 rd Sem CSE	Name of the teaching faculty: - PRAJNAPARAMITA KABI
Subject: - Digital Electronics and Computer Organization	No. of Days/week class Allotted: -3	No. of weeks: -15 SESSION-2025-2026 WINTER Starting date- 14/11/25 Closing date- 15/11/25
No. of week	No. of class	Topic to be Taught
1	1 ST	Difference Between Analog and Digital Signal Number systems
	2 ND	Number Systems Binary, Octal Conversion
	3 RD	Number Systems Signals Decimal, and Hexadecimal Conversion
2	1 ST	Binary Arithmetic Boolean Algebra
	2 ND	Binary Arithmetic Boolean Algebra
	3 RD	Boolean algebra
3	1 ST	Basic Operations Laws,
	2 ND	Basic Operations Laws, and Simplification
	3 RD	Logic Gates and Circuits AND, OR, NOT, NAND, NOR, XOR, XNOR,
4	1 ST	Symbol and truth table of all logic gates
	2 ND	Design and Simplification of Logic Circuits Using Boolean Algebra,
	3 RD	Karnaugh Maps (K-Maps)
5	1 ST	Karnaugh Maps for Simplification
	2 ND	K-Maps Practical Applications of Logic Gates in Real-World Circuits
	3 RD	K-Maps Practical Applications of Logic Gates in Real-World Circuits
6	1 ST	Combinational and Sequential Circuits
	2 ND	Combinational Circuits: Multiplexers, Demultiplexers
	3 RD	Encoders, and Decoders
7	1 ST	Sequential Circuits: Flip-Flops (SR, JK) and Their Applications
	2 ND	Sequential Circuits: Flip-Flops (D, T) and Their Applications
	3 RD	Counters and Their Applications
8	1 ST	Synchronous and Asynchronous Counters
	2 ND	Registers and Shift Registers: Types and Uses
	3 RD	Fundamentals of Computer
9	1 ST	Basic Structure of a Computer
	2 ND	Basic Structure of a Computer Organization CPU, Memory
	3 RD	Basic Structure of a Computer Input/Output Devices Instruction Cycle
10	1 ST	Basic Structure of a Computer Fetch, Decode, Execute Memory Organization
	2 ND	Types of Memory (RAM, ROM)
	3 RD	Memory Cache, Virtual Memory
11	1 ST	Introduction to Buses: Address Bus, Data Bus, and Control Bus
	2 ND	Processor Architecture and Control
	3 RD	Unit Introduction to Microprocessors

12	1 st	Unit Introduction to Microcontrollers
	2 nd	Basics of Arithmetic Logic Unit (ALU) and Control Unit
	3 rd	Instruction Set Architecture (ISA)
13	1 st	RISC vs CISC Pipelining
	2 nd	RISC vs CISC Pipelining and Performance Optimization in Processors
	3 rd	Input/Output Systems and Advanced Topics
14	1 st	I/O Devices and Interfaces: Keyboard, Mouse, Printers, and Storage Devices Interrupts, and DMA (Direct Memory Access)
	2 nd	I/O Devices and Interfaces: Keyboard, Mouse, Printers, and Storage Devices Interrupts and DMA (Direct Memory Access)
	3 rd	Overview of Modern Trends
15	1 st	Multicore Processors, GPUs, and Embedded Systems
	2 nd	Mini- Project: Design a Simple Digital Circuit or Simulate a Basic CPU Operation
	3 rd	Mini- Project: Design a Simple Digital Circuit or Simulate a Basic CPU Operation


Signature of the faculty


HOD EE


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