Lesson Plan

Program: BCA   **Semester:** I **Course Code**: BCA-204 **CourseName:** Digital Electronics and Computer Organization

Course Objectives

CO 1.   To study the concept of Boolean algebra and logic gates.
CO 2.   To apply the design procedure to construct basic combinational circuits.
CO 3.   Interpretation of various types of memories with their operations.
CO 4.   Analysis of synchronous and asynchronous sequential circuits using flip flops.
CO 5.   To discuss the various Memories.

SessionDuration:60 minutes
Participants: BCA Second Semester Students

Entry level knowledge and skills of students

     i.   Computer Fundamentals
     ii……

Equipment required in Classroom/Laboratory/Workshop

     i. Projector
     ii. White Board & Marker

Assessment Schemes

S. No.	Criteria	Marks(100)
1	**CCSU End Term Examination**	75
2	**Internal Evaluation Scheme**	25
2(a)	**Class Test**	10
2(b)	**Assignment -1**	15
2(b)(i)	**Assignment -2**	10
2(b)(ii)	**Attendance(compulsory)**	5

Course Outcomes

(CO1): Able to understand the types of logic gates, Boolean algebra. Application of circuit designing

     techniques   *Understanding (K2)*

(CO2): Understand the concept of Multiplexers, decoders, encoders   *Understanding (K2),*

(CO3): Interpretation of various types of memories with their operations.

                  Understanding (K2)

(CO4): Understand the concept of sequential circuits using flip flops. synchronous and asynchronous

     designing method   *Understanding(K2)*

(CO5): Able to understand I/O management and file system, concepts of protection and security

                  Understanding (K2)

Mangalmay Institute of Management Technology
Greater Noida (U.P.)

L. No.	Topics	SubTopics	Date ofImplementation	Pedagogy	CO-Covered	Faculty Sign	HoD'sRemark with Date
				Unit -1			
1.	Discussion aboutthe SubjectSyllabus andLearning outcomes	Course Objective&Course Outcome			**CO-1 TOCO-6**		
2.	**Logic gates and circuit**	Gates (OR, AND, NOT, NOR,		• Lecture	**CO-1**		
3		NAND, XOR & XNOR)					
4		Demorgan's laws;		• Lecture • Brainstorming	**CO-1**		
5.		Boolean laws,		• Lecture • BuzzGrouping	**CO-1**		
6.		Circuit Designing Techniques		• Lecture • Brainstorming	**CO-1**		
7.		SOP		• Lecture	**CO-1**		
8.		POS		• Lecture	**CO-1**		
9.		K-Maps		• Lecture • Brainstorming	**CO-1**		

			Unit -2				
10.	**Combinational Building Blocks**	Half Adder		• Lecture	**CO-2**		
11.		Full Adder		• Lecture • Brainstorming	**CO-2**		
12.		Half Subtractor		• Lecture	**CO-2**		
13.		Full Subtractor		• Lecture • Brainstorming	**CO-2**		
14.		Decoders		• Lecture • Brainstorming			
15.		Encoders		• Brainstorming			
16.		Multiplexer		• Lecture			
17.		Demultiplexer		• Lecture • Brainstorming			
			Unit -3				
18.	**Memories**	ROMs, PROMs, EPROMs		• Lecture • Brainstorming	**CO-3**		
19.		RAMs		• Lecture • Brainstorming	**CO-3**		
20.		Hard Disk, Floppy Disk and CD-ROM		• Lecture Brainstorming	**CO-3**		

21.		Types of O.S		• Lecture • Brainstorming	CO-3		
Unit –4							
22.	**Sequential Building Blocks**	Flip-Flop (RS, D, JK, Master-slave & T flip-flops		• Lecture • BuzzGrouping	CO-4		
23.		SR Flip Flop		• Lecture • Brainstorming	CO-4		
24.		J-K Flip Flop		• Lecture • Brainstorming	CO-4		
25.		D Flip Flop		• Lecture • Brainstorming	CO-4		
26.		T Flip Flop		• Lecture • Brainstorming			
27.		Registers & Shift registers		• Lecture • Brainstorming			
28.		Counters		• Lecture • Brainstorming			
29.		Synchronous		• Lecture • Brainstorming			
30.		Asynchronous Designing method		• Lecture • Brainstorming			

				Unit –5				
31.	**Memory Organization**	Basic cell of static and dynamic RAM		• Lecture • Brainstorming	**CO-5**		
32.		Building large memories using chips		• Lecture • Brainstorming	**CO-5**		
33.		Associative memory		• Lecture • Brainstorming	**CO-5**		
34.		Cache memory organization and Virtual memory organization					

TextBooks:

1. Digital Logic and Computer design (PHI) 1998: M.M. Mano
2. Computer Architecture (PHI) 1998: M.M. Mano

ReferenceBooks:

1. Digital Electronics (TMH) 1998: Malvino and Leach.
2. Computer Organization and Architecture: William Stallings.
3. Digital fundamentals (Universal Book Stall) 1998 : Floyd, L.Thomas.