

Lesson Plan

Name of the Faculty:		Ms. Harish Verma	
Discipline:		BCA	
Semester:		4th	
Subject:		Data Structures and Applications (B23-CAP-401)	
Work Load(Lecture/Practical) per week(In hours):		Lecture-4	
S. No	Lecture No.	Theory	
		Topic(Including Assignment/Test/Quiz)	Pedagogy (PPT/Chalk and Board/Video Recording /Activity/Case Study)
1.	L1.	Data Structure Definition, Data Type vs. Data Structure	Chalk and Board and PPT
2.	L2.	Classification of Data Structures, Data Structure Operations,	Chalk and Board and PPT
3.	L3.	Applications of Data Structures.	Chalk and Board and PPT
4.	L4.	Algorithm Specifications: Performance Analysis and Measurement	Chalk and Board
5.	L5.	Time and Space Analysis of Algorithms- Average, Best and Worst Case Analysis	Chalk and Board
6.	L6.	Arrays: Introduction, Linear Arrays,	Chalk and Board
7.	L7.	Representation of Linear Array in Memory	Chalk and Board and PPT
8.	L8.	Two Dimensional Arrays	Chalk and Board and PPT
9.	L9.	Multidimensional Arrays	Chalk and Board
10.	L10.	Sparse Matrix and its Representation	Chalk and Board and PPT
11.	L11.	Operations on Array: Algorithm for Traversal, Selection,	Chalk and Board
12.	L12.	Insertion, Deletion	Chalk and Board and PPT
13.	L13.	String Handling: Storage of Strings	Chalk and Board and PPT
14.		Assignment1	On Paper

15.	L14.	Operations on Strings viz., Length, Concatenation, Substring	Chalk and Board and PPT
16.	L15.	Insertion, Deletion	Chalk and Board
17.	L16.	Replacement, Pattern Matching	Chalk and Board
18.	L17.	Linked List: Introduction	Chalk and Board
19.	L18.	Array vs. linked list	Chalk and Board and PPT
20.	L19.	Representation of linked lists in Memory	Chalk and Board and PPT
21.	L20.	Traversing a Linked List, Insertion	Chalk and Board
22.	L21.	Deletion, Searching into a Linked list	Chalk and Board and PPT
23.	L22.	Type of Linked List	Chalk and Board and PPT
24.	L23.	Stack: Array Representation of Stack	Chalk and Board and PPT
25.	L24.	Linked List Representation of Stack	Chalk and Board
26.	L25.	Algorithms for Push and Pop,	Chalk and Board
27.	L26.	Application of Stack: Polish Notation,	Chalk and Board and PPT
28.	L27.	Postfix Evaluation Algorithms,	Chalk and Board and PPT
29.		Assignment2	On Paper
30.	L28.	Infix to Postfix Conversion	Chalk and Board and PPT
31.	L29.	Infix to Prefix Conversion,	Chalk and Board and PPT
32.	L30.	Recursion.	Chalk and Board and PPT
33.	L31.	Introduction to Queues: Simple Queue, Double Ended Queue,	Chalk and Board
34.	L32.	Circular Queue,	Chalk and Board and PPT
35.	L33.	Priority Queue,	Chalk and Board and PPT
36.	L34.	Representation of Queues as Linked List and Array,	Chalk and Board and PPT
37.	L35.	Applications of Queue.	Chalk and Board and PPT

38.	L36.	Algorithm on Insertion and Deletion in Simple Queue	Chalk and Board and PPT
39.	L37.	Algorithm on Insertion and Deletion in Circular Queue.	Chalk and Board and PPT
40.	L38.	Priority Queues.	Chalk and Board and PPT
41.	L39.	Tree: Definitions and Concepts, Representation of Binary Tree	Chalk and Board and PPT
42.	L40.	Binary Tree Traversal (Inorder, postorder, preorder)	Chalk and Board and PPT
43.		Assignment3	On Paper
44.	L41.	Binary Search Trees – Definition, Operations	Chalk and Board and PPT
45.	L42.	searching, insertions and deletion	Chalk and Board and PPT
46.	L43.	Sorting Techniques: Bubble sort	Chalk and Board and PPT
47.	L44.	Merge sort	Chalk and Board
48.	L45.	Insertion Sort.	Chalk and Board
49.	L46.	Selection sort,	Chalk and Board and PPT
50.	L47.	Quick sort,	Chalk and Board and PPT
51.	L48.	Searching Techniques: Sequential Searching, Binary Searching	Chalk and Board and PPT