

PANIPAT INSTITUTE OF ENGINEERING & TECHNOLOGY

Department of Information Technology

LESSON PLAN

Subject: Data Structures

Subject code: PC-IT-205A

Semester: III

SN o	Topic	No. of Lec	CO Covered	Teaching Methodology
1	Unit - 1 Data Structure - Definition, Classification and its application	1	CO1	PPT, Chalk And Talk
2	Data Structure - Application	1		PPT, Chalk And Talk
3	Array - its application,	1		PPT, Chalk And Talk
4	Array - implementation,	1		PPT, Chalk And Talk
5	addressing of element in 1D array	1		PPT, Chalk And Talk
6	Addressing of elements in 2D array, practice questions	1		PPT, Chalk And Talk
7	Sparse Matrix and implementation of transpose	1		PPT, Chalk And Talk
8	Introduction to algorithm and Linear search	1		PPT, Chalk And Talk
9	Binary search and its complexity	1		PPT, Chalk And Talk
10	Introduction to Sorting	1		PPT, Chalk And Talk
11	Insertion and Selection sort	1		PPT, Chalk And Talk

12	Bubble sort and Quicksort	1		PPT, Chalk And Talk
13	Merge sort, comparative study of sorting methods	1		PPT, Chalk And Talk
14	Unit - 2 Introduction to Stacks, its implementation memory representation and application	1	CO2	PPT, Chalk And Talk
15	Evaluation of postfix expression, Converting Infix to Prefix	2		PPT, Chalk And Talk
16	Introduction to linear Queue and its implementation and application	1		PPT, Chalk And Talk
17	Circular queue, push and pop algorithm and memory representation	2		PPT, Chalk And Talk
18	Priority queue: memory representation and push/pop operations	1		PPT, Chalk And Talk
19	UNIT - 3 Need of dynamic data structures, operation on lists	1		CO3
20	Dynamic implementation of linked lists, Comparison between Array and Dynamic implementation of linked list	1	PPT, Chalk And Talk	
21	Link list implementation of stack and queue	1	PPT, Chalk And Talk	
22	Singly link list: insertion, deletion, traversal algorithm	2	PPT, Chalk And Talk	
23	Doubly link list: insertion, deletion, traversal algorithm	1	PPT, Chalk And Talk	
24	Circular link list: insertion, deletion, traversal algorithm	1	PPT, Chalk And Talk	
25	Doubly link list: insertion, deletion, traversal algorithm	1		PPT, Chalk And Talk
26	UNIT - 4 Tree: Definition, Basic terminology, Classification	1	CO4	PPT, Chalk And Talk

27	Tree traversal methods, Construction of Tree from postorder/preorder and inorder	1	PPT, Chalk And Talk
28	Representation of infix, postfix and prefix expressions using tree	1	PPT, Chalk And Talk
29	Binary Tree: implementation, insertion and deletion operation/algorithm	1	PPT, Chalk And Talk
30	B+ trees, AVL Trees, threaded trees	1	PPT, Chalk And Talk
31	Graph: Basic terminology, Representation of graphs	1	PPT, Chalk And Talk
32	Graph Traversal: DFS and BFS	1	PPT, Chalk And Talk
33	Minimum spanning tree	1	PPT, Chalk And Talk