Panipat Institute of Engineering & Technology
Department of CSE-AI&DS
LESSON PLAN

Subject: Data Structures and Algorithm **Subject code:** PC-CS-AIDS-205A
Semester: 3rd

S.No	Topic	CO Covered	Assignment No.	Teaching Methodology
1	Introduction to data structure, Data type, built in and user defined data type, Application of data structure	CO1	1	Power point, White Board and Marker
2	Algorithm Analysis	CO1	1	Power point, White Board and Marker
3	Worst case analysis, Best and average case analysis, notation of space and time complexity	CO1	1	Power point, White Board and Marker
4	Basic of recursion	CO1	1	Power point, White Board and Marker
5	Array (one-Dimensional)	CO1	1	Power point, White Board and Marker
6	2D and Multidimensional array	CO1	1	Power point, White Board and Marker
7	Sparse Matrix, Linear Search	CO1	1	Power point, White Board and Marker
8	Binary Search algorithm	CO1	1	Power point, White Board and Marker
9	Sorting using insertion sort	CO1	1	Power point, White Board and Marker
10	Sorting using bubble sort, radix sort	CO1	1	Power point, White Board and Marker
11	Stacks Introduction, Implementation of stacks and operations	CO2	2	Power point, White Board and Marker
12	Evaluation of postfix and prefix notation	CO2	2	Power point, White Board and Marker
13	Interconversion of prefix to infix and postfix	CO2	2	Power point, White Board and Marker
14	Quicksort Algorithm	CO2	2	Power point, White Board and Marker
15	Queues introduction, Sequential Implementation of Linear Queues	CO2	2	Power point, White Board and Marker
16	operation of queues	CO2	2	Power point, White Board and Marker
17	Circular Queue and Its Implementation	CO2	2	Power point, White Board and Marker
18	Priority Queues and Its Implementation	CO2	2	Power point, White Board and Marker
19	Applications of queues	CO2	2	Power point, White Board and Marker
20	Introduction Linked List, Need of Dynamic Data Structures, Single Link List and its Dynamic Implementations	CO3	3	Power point, White Board and Marker
21	Traversing, Insertion, Deletion Operations on Single Link Lists.	CO3	3	Power point, White Board and Marker
22	Comparison between Static and Dynamic, Implementation of Linked List	CO3	3	Power point, White Board and Marker

23	Doubly Link List and its Dynamic Implementations	CO3	3	Power point, White Board and Marker
24	Circular Link List and its Dynamic Implementations	CO3	3	Power point, White Board and Marker
25	Dynamic Implementation of Stacks and Queues	CO3	3	Power point, White Board and Marker
26	Trees: Definition, Basic Terminology, Binary Tree	CO4	4	Power point, White Board and Marker
27	External and Internal Nodes, Static and Dynamic Implementation of a Binary Tree	CO4	4	Power point, White Board and Marker
28	Primitive operations on binary tree	CO4	4	Power point, White Board and Marker
29	Binary Tree traversals: Preorder, In order and Post order, Representation of Infix-prefix and postfix expressions	CO4	4	Power point, White Board and Marker
30	Introduction to BST: B+ Trees,	CO4	4	Power point, White Board and Marker
31	AVL Trees	CO4	4	Power point, White Board and Marker
32	Threaded Binary Tree, Balanced m-way Tree	CO4	4	Power point, White Board and Marker
33	Heap sort	CO4	4	Power point, White Board and Marker
34	Graphs: Basic Terminology, Definition of Undirected and directed graph,	CO4	4	Power point, White Board and Marker
35	Memory representation of graphs	CO4	4	Power point, White Board and Marker
36	MST, Warshall’s Algorithm	CO4	4	Power point, White Board and Marker
37	Graph Traversal Algorithms: BFS and DFS	CO4	4	Power point, White Board and Marker