Lesson Plan

Data Structure

Instructor: Manisha Chawla

Session: Jul-Dec 2024

Semester: 3rd

Number of classes planned: 27

Lecture No.	Unit No.	Topic to be covered
1-2	1	1.3 Declaring and initialising One-Dimensional Array and array Operations- Insertion, Searching
3	1	1.4 Multi-Dimensional Array and its Operations- Matrix operations
4	1	1.5 Drawbacks of Linear Arrays 1.6 Introduction to character arrays and strings.
5	2	2.1 Introduction to stack 2.2 Implementation of the stack 2.3 Operations on Stack-Push Pop

6-7	2	2.4 Application of Stack
		    Expression Evaluation
		    Infix to Postfix
		    Infix to Prefix

8	2	Recursion

9	2	2.4 Introduction to Queue
		2.5 Types of queue
		    Single-Ended Queue
		    Circular Queue
		    Double-Ended Queue.

10-11	2	2.6 Implementation of Queue 2.7 Application of the Queue
12-13	3	3.1 Introduction and Features of Pointers 3.2 Declaration of Pointer 3.3 Operations on Pointers 3.4 Array of Pointers
14	3	3.5 Pointers to Pointers 3.6 Passing an array to a function
15-16	3	3.7 Introduction and Features of Structure & Union 3.8 Declaration of Structure & Union 3.9 Operations on Structure & Union
17	3	3.10 Array of Structure & Union 3.11 Pointers to Structure & Union
18	4	4.1 Introduction of Linked List

		node,
		 next address
		 pointer,
		 null pointer
		 4.2 Types of Linked List
		     Singly Linked List
		     Doubly Linked List
		     Circular Linked List

19-20	4	4.3 Operations on Linked List
		     Searching
		     Insertion

21-22	4	Deletion 4.4 Applications of Linked List

23	5	5.1 Definition of graph
		 5.2 Representation of graph
		     Adjacency Matrix
		     Incidence Matrix
		     Adjacency List

24	5	5.3 Introduction to Tree
		 5.4 Type of tree
		     Binary Tree
		     Binary Search Tree (BST)

25	5	5.5 Operation on BST- Insertion
26-27	5	5.6 Operation on BST- Traversing Operation on BST- Deleting
		Internal Viva
		Presentation
		Viva Voce