SARASWATI MAHILA MAHAVIDYALAYA
SESSION: **2021-2022**

SEM: EVEN
(MARCH-JUNE)

LESSON PLAN

Name of faculty: Soniya Rani
Designation   :   Assistant Professor In Computer Science
Subject   :   Data Structures with C /C++
Class   :   Bsc 4th sem

Sr no	Topics/Chapters	Time Period	Academic Activities	Topics of Assignments /Test
1.	Data-Structure: Data-Structure operations, Algorithm, Complexity, Data structure and its essence, Introduction to Arrays, Array operations, Multi- dimensional arrays, sequential allocation, address calculations, sparse arrays, Stacks-Introduction to Stacks, primitive operations on stacks, representation of stacks as an array and stack-applications.	21 MAR- 15 APR	Discussion: Algorithms and their Complexity.	Test: Arrays and its operations. Assignment: Stack and its application.
2.	Queues:-Introduction to queues, operations on queue, circular queue, priority queue, Applications of queue. Linked List-introduction and basic operations, Header nodes, doubly linked list, circular linked list, Applications of linked list, Representation of linked list as an array, stacks and queues.	16APR-30APR	Presentation: Application of linked list.	Test: Queues and its operations. Presentation: Linked list.
3.	Tree structures: Basic terminology, binary trees and binary search trees, implementing binary trees, Tree traversal algorithms, threaded trees, trees in search algorithms, AVL Trees, Polish notation and expression trees, applications of binary trees.	01May- 20 MAY	Discussion: Binary seach tree. Presentation: Threaded Tree.	Test: Binary Tree and Tree traversal algorithms. Assignment: AVL Trees.
4.	Graph data structure and their applications. Graph traversals, shortest paths, spanning trees and related algorithms. Sorting: Internal and external sorting. Various sorting algorithms, Time and Space complexity of algorithms. Searching techniques. Applications of S orting and S earching in computer science.	20MAY – 15 JUNE	Discussion: Shortest Path Presentation: sorting algorithms.	Test: Graph Traversal and Spanning Trees. Assignment: Searching and Sorting.