

**SES's L.S. RAHEJA COLLEGE OF ARTS AND COMMERCE
(AUTONOMOUS)**



BOARD OF STUDIES: Information Technology and Data Science

Programme: B.Sc. (Artificial Intelligence & Data Science)

Semester: II

Nomenclature of the Course: Data Structures & Algorithms Lab

NEP Vertical: Major

Credit: 01

Total Marks: 25

Academic Year: 2026–27

(As per Choice Based Credit System under NEP 2020)



List of Practical

1. Array Operations

- Insertion, Deletion, Traversal in Array
- Program to find maximum and minimum element

2. Linear Search

- Implement Linear Search
- Count number of comparisons

3. Binary Search

- Implement Binary Search on sorted array
- Compare with Linear Search

4. Stack Implementation

- Stack using Array
- Push, Pop, Display operations

5. Stack Application

- Parenthesis Checking
- Infix to Postfix Conversion

6. Queue Implementation

- Linear Queue using Array
- Enqueue and Dequeue operations

7. Sorting Algorithms

- Bubble Sort
- Selection Sort
- Display number of passes

8. Linked List (Basic)

- Create and Traverse Singly Linked List
- Insert node at beginning

9. Binary Search Tree (BST)

- Insert elements into BST
- Inorder Traversal

10. Graph Traversal (Basic)

- Represent graph using adjacency matrix
- Implement BFS or DFS (basic level)

Learning Objectives

1. To implement fundamental data structures.
2. To apply searching and sorting algorithms.
3. To understand stack and queue applications.
4. To implement basic tree and graph traversals.

Course Outcomes (CO)

CO No.	Course Outcome	Bloom's Level
CO1	Implement array and linked list operations	Apply (L3)
CO2	Develop stack and queue based solutions	Apply (L3)
CO3	Implement searching and sorting algorithms	Apply (L3), Analyze (L4)
CO4	Construct basic tree and graph traversal programs	Apply (L3)
CO5	Compare performance of algorithms practically	Analyze (L4)

Evaluation Scheme

Continuous Evaluation (Internal – 25 Marks)

Component	Marks
Journal	5
Viva	5
Practical Exam	15
Total	25