## **CSE215:DATA STRUCTURES AND ALGORITHMS LABORATORY**

L:0 T:0 P:2 Credits:1

**Course Outcomes:** Through this course students should be able to

- Code the standard algorithms for manipulating data organized in different structures
- Implement the problem solution with the use of basic data structures such as Arrays, Linked List, Stacks, Queues, Trees and Graphs
- Classify the efficient implementation of linear and non linear data structures

## List of Practicals / Experiments:

#### **Basics**

- · Array of structures and pointers
- · Pointers and records

## **Arrays**

- Dynamic creation of arrays
- · Linear Search and Binary Search
- Bubble sort
- Insertion
- Deletion

## **Searching and Sorting techniques**

• Implementation of all searching and sorting techniques

#### **Linked Lists**

- Two-way lists
- Traversal
- Insertion
- Deletion
- · Header linked list
- Circular linked list

# **Stacks and Queues**

- Tower of Hanoi
- Insertion
- Deletion
- Traversal

## **Trees**

- · BST insertion
- BST creation
- Heap insertion
- Heap deletion
- Heap sort

## **Text Books:**

1. DATA STRUCTURES USING C by REEMA THAREJA, OXFORD UNIVERSITY PRESS

#### References:

1. DATA STRUCTURES, ALGORITHMS AND APPLICATIONS IN C++ by SARTAJ SAHNI, UNIVERSITIES PRESS PVT. LTD

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