Computer Science Laboratory Course-I
(Data Structures Using C)

Semester: III	Subject Code: BSP41608	Lectures: 60

Objectives:
The syllabus aims in equipping students to, • Design and implement Data structures and related algorithms • Understand several ways of solving the same problem. • Continuous assessment of the students. • Providing ready references for students while working in the lab.

Unit 1: Searching techniques-Linear and Binary with time complexity	**4**
Unit 2: Sorting algorithms -Bubble sort, insertion sort, quick sort and merge sort	**12**
Unit 3: Linked List Implementation: singly ,doubly Application :Polynomial addition	**12**
Unit 4: Stack Implementation: static ,dynamic Application: infix to postfix conversion and postfix evaluation	**8**
Unit 5: Queue Implementation :Linear(static and dynamic),circular(static),priority queue	**8**
Unit 6: Tree-BST creation and operations	**8**
Unit 7: Graph Indegree, outdegree(using adjacency matrix) Matrix to adjacency list conversion BFS,DFS using adjacency matrix	**8**

Computer Science Laboratory Course-I
(Object Oriented Concepts using C++)

Semester: IV	Subject Code: BSP41608	Lectures: 60

Objectives:
The syllabus aims in equipping students with, • To acquire an understanding of basic object oriented concepts and the issues involved in effective class design • To write C++ programs that use object oriented concepts such as information hiding, inheritance, polymorphism etc. • Understand several ways of solving the same problem. • Continuous assessment of the students. • Providing ready references for students while working in the lab.

Unit 1: Class , object and methods implementation , array of objects	4
Unit 2: Constructor: copy constructor, default constructor, parameterized constructor	4
Unit 3: Memory Allocation: new and delete operators , dynamic constructor	4
Unit 4: Functions: Inline function, function overloading, default argument function and friend function	10
Unit 5: Operator overloading	10
Unit 6: Inheritance: Single, multiple, multilevel, hierarchy, Constructor and destructor in derived class ,virtual and pure virtual function	12
Unit 7: File Handling ,usage of formatting functions and manipulators	8
Unit 8: Mini project	8