Semester III

Subject Name: Data Structures Using C AND C++	**Duration: 4 hrs /Cycle**
Subject Code: 3PGM5(2015 on)	**Credit : 3**

Unit I: The Stack – Definition and example, representing stack in C, Infix, Prefix, and Postfix notations. Recursion – recursive definition and process of Fibonacci sequence, Binary search and Tower of Hanoi problem.

Unit II: Queues and Lists – The Queue and its sequential representation, Linked List, List in C, other List Structures-Circular List-Stack as Circular List-Queue as a Circular List-Primitive operations on Circular List.

Unit III: Trees – Binary Trees, Binary Tree representations, Huffman algorithm, Representing List as Binary Trees, Trees and their applications.

Unit IV: Sorting – Exchange Sorts, Selection and Tree Sorting, Insertion Sorts, Merge and Radix Sorts, Searching – Sequential searching – Indexed sequential search – Interpolation search.

Unit V: Graphs and their Applications - Graphs, A flow problem, Graph traversal and spanning Forests.

Text Book: Data Structures using C and C++ by Yedidyah Langsam, Moshe J. Augenstein, Aaron M. Tenenbaum, 2nd Edition 2000, PHI.

Chapter 2 (2.1,2.2,2.3), 3 (3.1,3.2,3.3) 4 (4.1,4.2,4.3,4.5) 5 (5.1,5.2,5.3,5.4,5.5) 6 (6.2,6.3,6.4,6.5) 7 (Relevant headings only) 8 (8.1,8.2,8.4)

Reference Books: 1. C and Data structures by P. Radha Ganesan, Scitech Publication (2000).

2. Data structures and program design in C by Robert L. Kruse, Bruce P. Leung and Clovis L. Tondo, Reprint Edition 1998, PHI.