Subject Code : RCCSIT4

CORE COURSE VI - DATA STRUCTURE & ALGORITHMS

Unit I:

Data Structures - Concept – Overview – Implementation.
Arrays: Definition –Terminology -One dimensional array - Memory Allocation – Operations – Applications - Multidimensional Arrays - Two dimensional arrays -Three dimensional and n - Dimensional arrays
Linked Lists: Definition - Single Linked List - Circular Linked List - Double Linked List

Unit II:

Stacks: Introduction-Definition - Representation of Stack - Operations on Stacks - Applications of Stack - Evaluation of Arithmetic Expressions - Factorial Calculation-Quick Sort
Queues: Introduction – Definition - Representation of Queues - Various Queue Structures – Application of Queues - CPU scheduling - Round Robin algorithm.

Unit III:

Tables - Rectangular Tables – Jagged Tables- Inverted Tables - Hash Tables
Trees - Basic Terminologies - Definition and Concepts – Representation of Binary Tree – Operations on Binary Tree

Unit IV:

Types of Binary Trees - Binary Search Tree - Heap Tree - B Tree – B Tree Indexing – Operations on a B Tree – B+ Tree Indexing – Trie Tree Indexing – Trie Structure- Operations on Trie

Unit V:

Graphs- Introduction – Graph Terminologies – Representation of Graphs – Operations on Graphs

Text Book:

1. Samanta. D, Classic data structures, Prentice-Hall of India, 2007(ISBN 978-81-203-1874-8)

Reference Books:

1. Langsem, Augenstein, Tenenbaum, Data structures using C and C++, Prentice Hall of India/Pearson education, ISBN 81-203-1177-9.
2. ISRD Group, Data structures using C, Tata McGrawHill, 2006, ISBN 0-07-059102-4.
3. Kamthane. Ashok N., Introduction to Data structures in C, Pearson education, ISBN 81-317-1392-X, 2007