SUBJECT NO-MA60002, SUBJECT NAME- DATA STRUCTURE AND ALGORITHM

LTP- 3-1-0,CRD- 4

SYLLABUS :-

Prerequisite: Programming LanguagesStack and queues, Linked list, Direct address tables, Indexing, hash tables, open addressing, trees, Binary search tree, height balanced tree, Red-black tree, B-tree. Basic concepts of algorithms, Complexity, Asymptotic notations, Trees: Binary tree, Binary Search Tree, Tree traversals. Heap as data structure. Basic sorting algorithms: selection sort, insertion sort. Greedy algorithms: Coin change problem, activity selection, Minimum Spanning Tree, Single source shortest path, knapsack problem. Divide â and â Conquer technique: Merge sort, quick sort. Solving Recurrence relations. Dynamic programming: matrix chain multiplication, all pair shortest path algorithm. Graph algorithms: Warshall s algorithm, Depth First Search, Breadth First Search. Branch and Bound technique, Backtracking. NP completeness.