Algorithm Analysis and Design

Syllabus

Module 1: Introduction to Algorithms

Introductions to Algorithm and Analysis:-Design of Algorithms,Growth of functions,Complexity of Algorithms,Asmptotic Notations,Recurrences

Sorting:- Insertion Sort,Quick Sort,Merge sort,Radix sort

Module 2: Advance Data Structure

Advanced Data Structure:-Binary Search Trees,Red Black Trees,B-Trees,Fibonacci Heap

Module 3: Advance Design and Ananysis Techniques

Advance Design and Analysis Techniques:- Dynamic Programming,Greedy algorithm,BackTracking,Branch & Bound

Module 4: Graph Algorithms

Graph Algorithms:-Elementary Graph Algorithms,Breadth First Search,Depth First Search,Minimum Spanning Tree,Kruskal’s Algorithms,Prim’s Algorithms,Single source shortest path,all pair shortest path

Module 5: Special topics in AAD

String matching,Introduction to NP Hard and NP-Completeness, Matrix Operations, Number theotrci algorithms