COURSE TOPICS::

UNIT-I

Algorithms, problems and instances, average and worst case analysis, elementary operations, Specifying an algorithm, Euclid's algorithm, data structures, asymptotic notation, Recursion and iteration, recurrence equation, Master's theorem.

UNIT-II

Divide and conquer: Sorting-Quick sort, Heap sort, Merge sort, Searching, binary search, changing two section of an array, finding the Median, matrix multiplication, string processing algorithms.

Greedy algorithms-Minimal spanning tree, shortest path, scheduling, and knapsack problem.

UNIT-III

Dynamic Programming: Shortest paths and 0/1 Knapsack, Traveling Salesman problem. Graphical algorithms-Traversing trees, Depth–First and Breadth–First search.

Backtracking: 8–queens' problem, sum of subsets.

Problems classes P, NP and NP–completeness.

READINGS
TEXTBOOK:: Introduction to algorithms by Coreman, PHI, IIIrd Edition.