Semester V

ISCP CSE

Industry Standard Coding Practices – 2023

Day 1

Algorithms - Dynamic Programming I

Problem Solving using Dynamic Programming, Memoization and Tabulation methods, Overlapping sub problems, forming Sub structures, Problem solving on Dynamic Knapsack, Trip optimization problem, Grid Based coding solutions, Subsets problem, scenario based problem solving using Dynamic Programming approaches

Day 2

Algorithms - Dynamic Programming II

Problem solving on Longest Common Sub string, Longest Common subsequence, Minimum Edit Distance problems, Longest Increasing Sub sequences, Min sum path matrix, Max sum Sub square, Problem solving on, Scenario based problem solving using Dynamic Programming approaches

Day 3

Backtrack Algorithms

Problem Solving through backtracking, differences between backtracking and brute force methods, State space diagram, N Queens problem, Finding a way, Solving Grid based backtracking problems, practice problems

Day 4

Non-Linear Datstructures – Graph Theory

Introduction to Graphs Problems, Types of graphs, Problem solving on graph traversals, Checking the degree sequence, , DFS, BFS, Scenario based problem solving implementing graphs, Practice Problems

Day 5

Non-Linear Datstructures – Graph Algorithms I

Problem Solving on Spanning Trees, Graph Reduction, Scenario based problem solving implementing graphs, Practice Problems

Day 6

Non-Linear Datstructures – Graph Algorithms II

Problem solving on Graph Coloring, Introduction to DAG, Topological sorting on DAGs, Scenario based problem solving implementing graphs, Practice Problems