

LESSONPLAN

Department: CSE		Semester: 3 rd	Name of Faculty: Miss Khipita Mukhi
Subject: Algorithm (TH-5)	No. of days/ week Class allotted: 3	Effective From Date: 01.07.2026	
		Topic to be Covered:	
		Theory	
Week	Class Day	UNIT 1: Introduction to Algorithms:	
1 st	1 st	Definition of algorithm	
	2 nd	Criteria of algorithms – Input/output	
	3 rd	Criteria of algorithms – Input/output	
2 nd	1 st	Criteria of algorithms – finiteness, definiteness and effectiveness	
	2 nd	Criteria of algorithms – finiteness, definiteness and effectiveness	
	3 rd	writing an algorithm with pseudocode, algorithms and programs	
3 rd	1 st	writing an algorithm with pseudocode, algorithms and programs	
	2 nd	1. Doubt Clearing class 2. Quiz test 3. Assignment	
	3 rd	UNIT 2: Algorithmic Complexity: Concept of algorithmic complexity	
4 th	1 st	space complexity, time complexity	
	2 nd	worst case, average case and best-case analysis	
	3 rd	worst case, average case and best-case analysis	
5 th	1 st	Big-O notation	
	2 nd	Finding the complexity of an algorithm	
	3 rd	Finding the complexity of an algorithm	
6 th	1 st	1. Doubt Clearing class 2. Quiz test 3. Assignment	
	2 nd	UNIT 3: Recursive algorithms: Concept of iteration and recursion, examples of recursive algorithms	
	3 rd	Fibonacci series, factorial, Tower-of-Hanoi problem	
	1 st	Fibonacci series, factorial, Tower-of-Hanoi problem	
7 th	2 nd	Complexities of recursive algorithms	
	3 rd	Conversion of recursive algorithm to iterative algorithm.	
8 th	1 st	1. Doubt Clearing class 2. Quiz test 3. Assignment	
	2 nd	UNIT 4: Algorithm Paradigms: Greedy,	
	3 rd	Divide and Conquer	
	1 st	Divide and Conquer	
9 th	2 nd	Branch and Bound	
	3 rd	Dynamic Programming	
	1 st	Dynamic Programming	
10 th	2 nd	and Backtracking	
	3 rd	1. Doubt Clearing class 2. Quiz test 3. Assignment	

11 th	1 st	UNIT 5: Sorting: The sorting problem. Bubble sort, Selection sort, Insertion sort
	2 nd	The sorting problem. Bubble sort, Selection sort, Insertion sort
	3 rd	Merge sort, Quicksort, Heap sort, Radix sort
12 th	1 st	Merge sort, Quicksort, Heap sort, Radix sort
	2 nd	Searching: Symbol Tables
	3 rd	Binary Search Trees , Balanced Search Trees
13 th	1 st	Hashing, Hash Tables.
	2 nd	1. Doubt Clearing class 2. Quiz test 3. Assignment
	3 rd	UNIT 6: Graphs: Definition of a directed and undirected graph.
14 th	1 st	Paths, Cycles, spanning trees
	2 nd	Directed Acyclic Graphs.
	3 rd	Topological Sorting: Minimum Spanning Tree algorithms
15 th	1 st	Shortest Path algorithms: Dijkstra's algorithm
	2 nd	Flow-based algorithms
	3 rd	1. Doubt Clearing class 2. Quiz test 3. Assignment

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Signature of Faculty

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