

Data Structure And Algorithms Course Curriculum			
Induction Session Time & Link will be sent to you on 5th for Every Month"			
	SL.NO	DESCRIPTION	TIME
Week -1	1	Introduction to DSA & Arrays Why DSA? Time and space complexity	1 Hour
	2	Arrays: 1D & 2D, basic operations	1 Hour
	3	Introduction to Big-O Minor Project: Implement array-based problems(e.g., max subarray, rotate array, 2D matrix search)	1 Hour
Week -2	4	Strings & Recursion String manipulation	1 Hour
	5	Palindromes, substring problems	1 Hour
	6	Recursion vs Iteration Minor Project: Recursive string compression and pattern matching project.	1 Hour
Week -3	7	Linked Lists (Singly & Doubly) Creating and traversing linked lists	1 Hour
	8	Reversal, detection of loops	1 Hour
	9	DLL operations Minor Project: Build a custom playlist system using singly/doubly linked lists.	1 Hour
Week -4	10	Stacks and Queues	1 Hour
	11	Stack and Queue operations (using arrays & linked lists)	1 Hour
	12	Applications in parsing and scheduling	1 Hour
	13	Minor Project: Implement a browser navigation system (back/forward buttons).	1 Hour
Week -5	14	Trees and Binary Trees Tree terminology	1 Hour
	15	Binary Tree vs Binary Search Tree	1 Hour
	16	In-order, Pre-order, Post-order traversal Minor Project: Create a BST to store and search dictionary words efficiently.	1 Hour
Week -6	17	Heaps & Hashing Min/Max Heaps	1 Hour
	18	Priority Queue	1 Hour
	19	Hashing & HashMaps Minor Project: Implement a job scheduler using a priority queue(heap-based).	1 Hour
Week -7	20	Graphs & Greedy Algorithms	1 Hour
	21	Graph representation (Adjacency list/matrix) BFS, DFS	1 Hour
	22	Greedy algorithms: Activity selection, coin change Minor Project: Built a route-finder(shortest path using BFS) in a simple map/grid.	1 Hour
Week -8	23	Dynamic Programming & Final Project	1 Hour
	24	DP Basics (memoization & tabulation) Classic problems: Knapsack, Fibonacci, LIS	1 Hour
	25	DSA Interview questions practice Minor Project: Implement a DP-based solution to a real-world optimization problem(e.g., event scheduling or budget allocation).	1 Hour