

## C Language

Day	Chapter	Topics	Hours	
Day 1	<b>Computer Basics</b>	Block diagram, CPU & Memory Unit	1	
Day 2		What is S.W, types of S.W introduction to programming languages	1	
Day 3		Steps involved in program development	1	
Day 4		Algorithms & Flow Charts		2
Day 5				
Day 6	<b>Introduction to c</b>	History , Features, C program rules	1	
Day 7		Structure of c program	1	
Day 8		C Tokens (Identifiers, Keywords, Constants, Operators, Special characters)	1	
Day 9		C Data Types (Primitive, Derived, User Defined)	1	
Day 10	<b>Basic programs</b>	I/O statements (printf, scanf)	2	
Day 11		Programs to perform various calculations		
Day 12		Operators (Arithmetic, Relational, Logical, Assignment, Increment and Decrement, Bit-wise, Ternary, sizeof() )	2	
Day 13				
Day 14		Programs using operators	2	
Day 15				
Day 16	<b>Control statements</b>	Conditional control statements	3	
Day 17		If else, switch		
Day 18				
Day 19		Loops	3	
Day 20		while, do-while, for		
Day 21				
Day 22		Jumping Statements Goto, Continue, Break	1	

Day	Chapter	Topics	Hours
Day 23 Day 24 Day 25	<b>Arrays</b>	Array definition, Advantages, types implementing Single dimensional arrays implementing Multi-dimensional arrays	3
Day 26 Day 27 Day 28 Day 29	<b>Functions</b>	Function definition, Advantages  Types of functions Functions classification (return value, not return value, parameters, without parameters)  Implementing various kinds of functions Recursion, storage classes	4
Day 30		Applying Math functions	1
Day 31 Day 32 Day 33	<b>Strings</b>	Definition, declaration Applying various operations on strings Applying predefined string functions	3
Day 34 Day 35 Day 36 Day 37	<b>Pointers</b>	Definition, advantages Declaration, assigning address, accessing data using pointers, pointer operations, array implementation with pointer, call by reference, Dynamic memory allocation	4
Day 38 Day 39 Day 40	<b>Structures</b>	Definition, advantages, Structure definition, implementation of structure, array of structures, structure as return type & parameters to function, pointer implementation using structures, Dynamic Memory Allocation using structures	3
Day 41	<b>Unions</b>	Definition, Definition and implementation, Difference between structures and unions	1
Day 42 Day 43 Day 44	<b>Files</b>	Definition, advantages, Performing various operations on files(write, read, modify, search) Command line arguments,	3

# Data structures

Day	Topics	Options Covered	Hours
Day 1	<b>Introduction</b>	Definition, Advantages Classification of Data Structures i) Primitive data structures ii) Non primitive data structures  a) Linear data structures b) Nonlinear data structures	1
Day 2	<b>Stacks(LIFO's)</b>	Definition, advantages, operations implement Stack using array	1
Day 3 Day 4	<b>Queues(FIFO's)</b>	Definition, advantages, operations Types(linear, circular) Implement Linear Queue using array Implement Circular Queue using array	2
Day 5 Day 6 Day 7 Day 8 Day 9	<b>Linked lists</b>	Definition, advantages, Linked List Structure Types of Linked Lists 1) Singular Linked List Implementing create, insert, search, delete operations on singular linked lists  Implementing create, insert, search, delete operations on single circular linked lists  2) Double Linked List Implementing create, insert, search, delete operations on double linked lists  Implementing create, insert, search, delete operations on double circular linked lists  Implementing Stack operations using linked list Implementing Queue operations using linked list Implementing DEQueue operations using linked list	5

<b>Day</b>	<b>Topics</b>	<b>Options Covered</b>	<b>Hours</b>
Day 10 Day 11	<b>Searching's</b>	Definition of Linear search, implementing of Linear search Definition of Binary search, implementing Binary search	2
Day 12 Day 13 Day 14	<b>Sorting's</b>	Implementing various sorting techniques Linear sort, selection sort, bubble sort, insertion sort, merge sort, quick sort, Radix sort Comparing time complexities of sorting's	3
Day 15 Day 16 Day 17 Day 18	<b>Trees</b>	Definition, terminology (siblings, root, branch, leaf, degree) Binary Tree definition, representation of binary tree(sequential, linked list), Traversals, complete binary tree, full Binary Tree, Binary Search Tree. Implementing Binary Search Tree operations, insert, display, delete, search	4
Day 19 Day 20 Day 21	<b>Graphs</b>	Definition, advantages, types(directed, undirected), graph representations(Adjacency Matrix, Adjacency List, Graph Traversals(DFS, BFS) implementing DFS & BFS, Spanning Tree definition, Kruskal's Algorithm, Warshall's Algorithm, Dijkstra's Algorithm	3