

Guru Daksh Govt. Polytechnic, Hisar

Lesson Plan (Even Semester)

Name of the Faculty: Dr. Ajit Kumar

Discipline: Computer Engg.

Semester: 4th

Subject: Data Structure Using 'C'

Lesson Plan Duration: 15 Weeks

WorkLoad per week (In hours): 03-Lectures / 04-Practicals

Week	Theory		Practical	
	Lecture Day	Topic(including assignment/Test)	Practical Day	Topic
1st	1	Fundamental Notations-Problem solving concept	1	Introduction to the students 'C'- Concept of data types
			2	
	2	Top down and bottom up design	3	Variables and constants, Concept of pointer variables and constants
	3	Structured Programming	4	
2nd	4	Concept of data types	5	Practice of the basic programs of 'C' language
			6	
	5	Variables and constants	7	Practice of the basic programs of 'C' language
	6	Concept of pointer variables and constants	8	
3rd	7	Arrays – Concept of Arrays	9	Sorting an array
			10	
	8	Storage representation of multi-Dimensional arrays	11	Revision of the Practical covered in Last Hour and Checking of Practical Files.
	9	Operations on arrays with Algorithms (searching, traversing)	12	
4th	10	Operations on arrays with Algorithms (inserting, deleting)	13	The addition of two matrices using functions
			14	
	11	Linked Lists – Introduction to linked list	15	Revision of the Practical covered in Last Hour and Checking of Practical Files.
	12	Representation of linked lists in Memory	16	
5th	13	Operations on Linked list - Insertion	17	The multiplication of two matrices
			18	
	14	Operations on Linked list - Deletion, Traversal	19	Revision of the Practical covered in Last Hour and Checking of Practical Files.
	15	Application of linked lists	20	
6th	16	Doubly linked lists	21	Insertion and Deletion of elements in Linked list
			22	
	17	Operations on Doubly Linked list - Insertion	23	Revision of the Practical covered in Last Hour and Checking of Practical Files.
	18	Operations on Doubly Linked list - Deletion, Traversal	24	
7th	19	Introduction to stacks	25	Insertion and Deletion of elements in Doubly linked list
			26	
	20	Representation of stacks	27	Revision of the Practical covered in Last Hour and Checking of Practical Files.
	21	Implementation of stacks	28	
8th	22	Application of stacks	29	Push and pop operation in stack
			30	
	23	Introduction to queues	31	Revision of the Practical covered in Last Hour and Checking of Practical Files.
	24	Implementation of queues	32	

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9th	25	Circular Queues, De-queues	33	Insertion and Deletion of elements in queue
			34	
	26	Application of Queues	35	Revision of the Practical covered in Last Hour and Checking of Practical Files.
	27	Recursion	36	
10th	28	Trees: Introduction	37	Insertion and Deletion of elements in Circular queue
			38	
	29	Concept of Trees	39	Revision of the Practical covered in Last Hour and Checking of Practical Files.
	30	Representation of Binary Tree in memory	40	
11th	31	Traversing Binary Trees - Preorder	41	The factorial of a given number using recursion & without recursion
			42	
	32	Traversing Binary Trees - Post order	43	Revision of the Practical covered in Last Hour and Checking of Practical Files.
	33	Traversing Binary Trees – In order	44	
12th	34	Searching in binary search trees	45	Fibonacci series with recursion & without recursion
			46	
	35	Inserting in binary search trees	47	Revision of the Practical covered in Last Hour and Checking of Practical Files.
	36	Deleting in binary search trees	48	
13th	37	Introduction to Heap	49	Program for binary search tree operation
			50	
	38	Introduction to Sorting and Searching, Search algorithm (Linear Search)	51	Revision of the Practical covered in Last Hour and Checking of Practical Files.
	39	Search algorithm (Binary Search)	52	
14th	40	Sorting algorithms (Bubble Sort)	53	The linear search procedures to search an element in given list
			54	
	41	Insertion Sort	55	The binary search procedures to search an element in a given list
	42	Selection Sort	56	
15th	43	Merge Sort	57	Revision of the Practical covered in Last Hour and Checking of Practical Files.
			58	The bubble sort, selection sort techniques
	44	Quick Sort	59	The Quick sort, merge sort techniques
	45	Heap Sort	60	Revision of the Practical covered in Last Hour and Checking of Practical Files.

Signature of the Faculty