

GOVT. POLYTECHNIC MANDI ADAMPUR

LESSON PLAN (EVEN SEMESTER)

Name of The Faculty : Gajender Singh
Discipline: Computer Engg.
Semester: 4th
Subject: Data Structure Using 'C'
Lesson Plan Duration: 15 Weeks
Work Load(Lecture/Practical)per week(In hours): 03-Lectures/ 02-Practicals

Week	Theory		Practical	
	Lecture Day	Topic(including assignment/Test)	Practical Day	Topic
1st	1st	Fundamental Notations -Problem solving concept, top down and bottom up design, structured Concept of data types, variables and constants,Concept of pointer variables and constants	1st	Introduction to the students 'C'- Concept of data types, variables and constants,Concept of pointer variables and constants Practice of the basic programs of 'C' language
	2nd			
	3rd	Introduction to data Structure(Linear, Non Linear, Primitive, Non Primitive), Concepts of Data Structure(Array, Linked List, Stack, Queue, Trees, graphs)		
2nd	4th	Arrays-Concept of Arrays, Single dimensional array	3rd	Practice of the basic programs of 'C' language
	5th	Two dimensional array	4th	The addition of two matrices using functions
	6th	Representation of Two dimensional Array(Base Address, LB, UB)		
3rd	7th	Operations on arrays with Algorithms (searching, traversing)	5th	Revision of the Practical covered in Last Hour and Checking of Parctical Files.
	8th	Operations on arrays with Algorithms (inserting, deleting)	6th	Inserting and deleting elements in array
	9th	Revision of Unit-1 & Unit-2 Assignment No: 1(Includes Unit-1 & Unit 2)		
4th	10th	Pre-sessional Test	7th	Revision of the Practical covered in Last Hour and Checking of Parctical Files.
	11th	Linked Lists -Introduction to linked list and double linked list, Representation of linked lists in Memory, Comparison between Linked List and Array	8th	Concept of Pointer, Structures, functions in 'C' Langugae etc.
	12th	Traversing a linked list, Searching linked		

		list		
5th	13th	Insertion and deletion into linked list (At first Node, Specified Position, Last node	9th	Insertion and Deletion of elements in linked list
	14th	Application of linked lists	10th	Revision of the Practical covered in Last Hour and Checking of Parctical Files.
	15th	Doubly linked lists-Traversing a doubly linked lists		
6th	16th	Insertion and deletion into doubly linked lists	11th	Insertion and Deletion of elements in doubly linked list
	17th	Revision of Unit-3	12th	Revision of the Practical covered in Last Hour and Checking of Parctical Files.
	18th	Seminar		

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7th	19th	Introduction to stacks, Representation of stacks with array and Linked List	13th	Push and pop operation in stack
	20th	Implementation of stacks	14th	Revision of the Practical covered in Last Hour and Checking of Parctical Files.
	21st	Application of stacks-Polish Notations, Converting Infix to Post Fix Notation		
8th	22nd	Application of stacks-Evaluation of Post Fix Notation, Tower of Hanoi	15th	Conversion from in-fix notation
	23rd	Recursion: Concept and Comparison between recursion and Iteration	16th	Revision of the Practical covered in Last Hour and Checking of Parctical Files.
	24th	Introduction to queues-Implementation of queues (array and Linked List with algorithm)		
9th	25th	Circular Queues, De-queues	17th	The factorial of a given number using recursion
	26th	Revision of Unit-4 Assignment No: 2(Includes Unit-3 & Unit 4)	18th	Revision of the Practical covered in Last Hour and Checking of Parctical Files.
	27th	Pre-sessional Test		
10th	28th	Trees: Introduction ,Concept of Binary Trees	19th	Insertion and Deletion of elements in queue using pointers
	29th	Complete, Extended Binary Tree	20th	Revision of the Practical covered in Last Hour and Checking of Parctical Files.
	30th	Concept of representation of Binary Tree		
11th	31st	Concept of balanced Binary Tree	21st	Insertion and Deletion of elements in circular queue using pointers
	32nd	Traversing Binary Trees (Pre order, Post order)	22nd	Revision of the Practical covered in Last Hour and Checking of Parctical Files.
	33rd	Traversing Binary Trees -In order		
12th	34th	Searching, inserting in binary search trees	23rd	The linear search procedures to search an element in given list
	35th	Deleting in binary search trees	24th	Revision of the Practical covered in Last Hour and Checking of Parctical Files.
	36th	Revision of Unit-5		
13th	37th	Seminar	25th	The binary search procedures to search an element in a given list
	38th	Sorting and Searching -Introduction, Search algorithm (Linear Search)	26th	Revision of the Practical covered in Last Hour and Checking of Parctical Files.
	39th	Search algorithm (Binary Search)		
14th	40th	Concept of sorting-Sorting algorithms (Bubble Sort)	27th	The bubble sort techniques
	41st	Insertion Sort, Selection Sort	28th	Revision of the Practical covered in Last Hour and Checking of Parctical Files.
	42nd	Merge Sort, Radix Sort		

	43rd	Quick Sort, Heap Sort	29th	The selection sort techniques
15th	44th	Revision of Unit-6 Assignment No: 3(Includes Unit-5 & Unit 6)	30th	Revision of the Practical covered in Last Hour and Checking of Parctical Files.
	45th	Pre-sessional Test		