

Computer Engineering Department
Session Jan2025-July2025
Lesson Plan

Subject:-Data Structure using C
Lesson Plan Duration:- 15 weeks

Semester:-4th
Load :- Lecture 03, Practical -04

We ek	Theory		Practical	
	Lecture Day	Topic (Including assignment/test)	Practical	Topic
1st	1st	Problem solving concept , top down and bottom up approach	1st	Introduction of programming language 'C'
	2nd	structured programming ,Concept of data types,variables , constants,		
	3rd	Revision of above topics		
2 nd	4th	concept of pointer variables and constants ,Introduction to data structure (linear, non-linear,primitive , non primitive)	2 nd	Programming in C language
	5 th	Concept of data structure (Array , linked list ,stack,Queue)		
	6 th	Concept of data structure (stack , Queue)		
3 rd	7 th	Concept of data structure (Trees, Graphs)	3 rd	The addition of two matrices using functions
	8 th	Revision of unit first		
	9 th	Concept of Array, Single Dimensional Array,two dimensional array)		
4 th	10 th	Representation of Two dimensional Array(Base Address,LB,UB)	4 th	Inserting elements in Array
	11 th	Operations on arrays with Algorithms (searching, traversing)		
	12 th	Operations on arrays with Algorithms (inserting)		
5 th	13 th	Operations on arrays with Algorithms (deleting)	5 th	Program Deleting an element from array
	14 th	Revision of topic Array full		
	15 th	Introduction to linked list and double linked list		
6 th	16 th	Representation of linked lists in Memory	6 th	Push operation on stack
	17 th	Comparison between Linked List and array , Traversing a linked list		
	18 th	Searching linked list , Insertion into linked list algorithm (At first Node)		
7 th	19 th	Insertion into linked list algorithms (Specified Position, Last node)	7 th	Pop operation on stack
	20 th	deletion into linked list algorithm (At first Node, Specified Position)		

	21	deletion into linked list algorithm (Last node), Application of linked lists		
8 th	22	Doubly linked lists, Traversing a doubly linked lists,	8 th	Conversion from in-fix notation
	23	Insertion and deletion into doubly linked list		
	24	Revision of linked list topic		
9 th	25	introduction to stacks, Representation of stacks with array and Linked List	9 th	Factorial of a given number using recursion
	26	Implementation of stacks Application of stacks - Polish Notations - Converting Infix to Post Fix Notation		
	27	Application of stacks -- Evaluation of Post Fix Notation - Tower of Hanoi		
10 th	28	Recursion: Concept and Comparison between recursion and Iteration		Insertion of elements in Queue using pointer
	29	Revision of topic stack		Deletion of elements in Queue using pointer
	30	Introduction to queues Implementation of queues (array with algorithm)		Insertion of elements in circular Queue using pointer
11 th	31	Implementation of queues (inked List with algorithm) Circular Queues		Deletion of elements in circular Queue using pointer
	32	Circular Queue ,De-queues,		Insertion of elements in Linked List
	33	Revision of topic Queue		Deletion elements in Linked List
12 th	34	Concept of Binary Trees (Complete, Extended Binary Tree)		Insertion of elements in doubly Linked List
	35	Concept of representation of Binary Tree,Concept of balanced Binary Tree		Deletion of elements in doubly Linked List
	36	Traversing Binary Trees (Pre order, Post order and In order)		
13 th	37	Searching in binary search trees)		Linear search to search a element into given list
	38	inserting in binary search trees algorithms		
	39	deleting in binary search trees algorithms		Binary search to search a element into given list
14 th	40	Revision of topic tree,		
	41	Sorting and Searching, Introduction Search algorithm (Linear)		
	42	Introduction Search algorithm (Binary search		
15 th	43	Concept of sorting ,Sorting algorithms (Bubble Sort)		Bubble sort techniques
	44	Sorting algorithms (Insertion Sort) Sorting algorithms (Heap sort		Selection sort techniques
	45	Revision of topic searching and sorting		

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