

Course with Code: Data Structures and Applications (Laboratory)-BCSL305				Faculty: Arjun G S			Semester : 3	
Class No.	Date planned (DD/MM)	Topics to be covered	TLP Planned	Class No.	Date of Conduction (DD/MM)	Topics Covered	TLP Executed	Remarks if any deviation
1	B1 15/11/23 B2 16/11/23	Sample Programs	PPT, C&B					
2	B1 22/11/23 B2 23/11/23	<b>1.</b> Design, Develop and Implement a menu driven Program in C for the following Array Operations a. Creating an Array of N Integer Elements b. Display of Array Elements with Suitable Headings c. Exit. Support the program with functions for each of the above operations.	PPT, C&B					
3	B1 29/11/23 B2 30/11/23	<b>2.</b> Design, Develop and Implement a menu driven Program in C for the following Array operations a. Inserting an Element (ELEM) at a given valid Position (POS)	PPT, C&B					

		b. Deleting an Element at a given valid Position POS) c. Display of Array Elements d. Exit. Support the program with functions for each of the above operations.						
4	B1 6/12/23  B2 7/12/23	<b>3.</b> Design, Develop and Implement a menu driven Program in C for the following operations on STACK of Integers (Array Implementation of Stack with maximum size MAX) a. Push an Element on to Stack b. Pop an Element from Stack c. Demonstrate Overflow and Underflow situations on Stack d. Display the status of Stack e. Exit Support the program with appropriate functions for each of the above operations	PPT, C&B					
5	B1 13/12/23 B2 14/12/23	<b>4.</b> Design, Develop and Implement a Program in C for the following Stack Applications a. Evaluation of Suffix expression with single digit operands and operators: +, -, *, /, %, ^ b. Solving Tower of Hanoi problem with n disks	PPT, C&B					
6	B1 20/12/23 B2 21/12/23	<b>5.</b> Singly Linked List (SLL) of Integer Data a. Create a SLL stack of N integer. b. Display of SLL c. Linear search. Create a SLL queue of N Students Data Concatenation of two SLL of	PPT, C&B					

		integers.						
7	B1 27/12/23 B2 28/12/23	<p>6. Design, Develop and Implement a menu driven Program in C for the following operations on Doubly Linked List (DLL) of Professor Data with the fields: ID, Name, Branch, Area of specialization</p> <p>a. Create a DLL stack of N Professor's Data.</p> <p>b. Create a DLL queue of N Professor's Data Display the status of DLL and count the number of nodes in it.</p>	PPT, C&B					
8	B1 3/1/24 B2 4/1/24	<p>7. Given an array of elements, construct a complete binary tree from this array in level order fashion. That is, elements from left in the array will be filled in the tree level wise starting from level 0.</p> <p>Ex: Input : arr[] = {1, 2, 3, 4, 5, 6}</p> <p>Output : Root of the following tree 1 /\ 2 3 /\ 4 5 6</p>	PPT, C&B					

9	B1 10/1/24 B2 11/1/24	<b>8.</b> Design, Develop and Implement a menu driven Program in C for the following operations on Binary Search Tree (BST) of Integers a. Create a BST of N Integers b. Traverse the BST in Inorder, Preorder and Post Order	PPT, C&B					
10	B1 17/1/24 B2 18/1/24	<b>9.</b> Design, Develop and implement a program in C for the following operations on Graph (G) of cities a. Create a Graph of N cities using Adjacency Matrix. b. Print all the nodes reachable from a given starting node in a diagraph using DFS/BFS method.	PPT, C&B					
11	B1 24/1/24 B2 25/1/24	<b>10.</b> Design and develop a program in C that uses Hash Function $H:K \rightarrow L$ as $H(K)=K \bmod m$ (reminder method) and implement hashing technique to map a given key K to the address space L. Resolve the collision (if any) using linear probing.	PPT, C&B					
12	B1 31/1/24 B2 1/2/24	<b>11.</b> Develop a program in C for the graph operations on cities by creating adjacent matrix and print all reachable nodes using DFS/BFS method.						

	Activity	Planned	Actual	Remarks
1	No of Labs	12		
2	Assignments/ Quizzes/ Self-study	-		
3	Tutorials/ Extra classes	-		
4	Internal Assessments	1		
5	ICT based Teaching (% of usage in Curriculum)	100%		
Planning			Execution	
Faculty Signature:			Faculty Signature:	
HoD Signature:			HoD Signature:	