



DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING - CYBER SECURITY

Course with Code: Data Structures Laboratory – 1BCSL306				Faculty: Ms. Bhavana V R			Semester & Section: III	
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
IA -1								
1.		Develop a Program in C for the following: a. Define a structure Book with the following fields: Book_ID, Title, Author, Price, Availability Status (Available/Issued) b. Dynamically allocate memory to store the details of N books, where N is entered by the user. c. Implement the following functions: d. Provide a menu-driven interface with the following options:	PPT					
2.		Develop a menu driven Program in C for the following operations on STACK of Integers (Array Implementation of Stack with maximum size MAX)	PPT					
3.		Develop a program in C for simulating a Printer Queue using Queue data structure with the following operations:	PPT					
4.		Develop a menu-driven Program in C for the following operations on a Singly Linked List of Student Records:.	PPT					
5.		Develop a Program in C for the following: a. Create a Binary Tree by inserting integer elements entered by the user in level order. Implement the following functions: b. Provide a menu-driven interface with the following options:	PPT					





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6.		Develop a Program in C for the following operations on Graph(G) of Cities a. Create an Adjacency Matrix representing the graph of N cities b. Print all the nodes reachable from a given starting node in a digraph using DFS/BFS method.	PPT					
IA-2								
7.		Develop a C program to: a. Read two sparse matrices of the same order. b. Convert both into 3-tuple representation. c. Perform matrix addition. d. Display the resultant matrix in both normal matrix form and 3-tuple form	PPT					
8.		Develop a C-based Expression Conversion tool that uses stack data structure to convert arithmetic expressions from infix notation to postfix notation. The tool should support alphanumeric operands, parentheses, and the operators (+, -, *, /, %, ^). Analyze the correctness of the conversion by testing various valid expressions.	PPT					
9.		Develop a menu-driven Program in C for the following operations on Circular Queue (integer/floating point data): a. Insert an element into the Circular Queue. b. Delete an element from the Circular Queue. c. Display the contents of the Circular Queue. d. Demonstrate overflow and underflow conditions. e. Exit.	PPT					



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10.		Develop a menu driven Program in C for the following operations on Doubly Linked List (DLL) of Employee Data with the fields: SSN, Name, Dept, Designation, Sal, PhNo etc.	PPT					
11.		Develop a menu driven Program in C for the following operations on Binary Search Tree (BST) of Integers.	PPT					
12.		Develop a Program in C for an Employee Record Management System using Hashing with the following operations:	PPT					





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