19CS12P2 - DATA STRUCTURES LABORATORY

(Common to ECE &EEE)

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| **Course Category:** | Professional Core | **Credits:** | 1.5 |
| **Course Type:** | Laboratory | **Lecture – Tutorial – Practical:** | 0-0-3 |
| **Pre-requisite:** | Basic programming knowledge and C language fundamentals | **Sessional Evaluation:**  **External Exam Evaluation:**  **Total Marks:** | 40  60  100 |

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| **Objectives:** | * To learn the various data structures and their implementation. . |
| **Course Outcomes:** | Upon successful completion of the course, the students will acquire knowledge on types of data structures and the operations that could be performed on them. |
| **Course Content:** | 1. Write a C program to implement Stack operations using arrays. 2. Write a C program to implement Queue operations using arrays. 3. Write a C program to implement various operations on a Singly Linked list. 4. Write a C program to implement the creation of following:    1. Doubly Linked list    2. Circular Linked list 5. Write a C program for    1. Bubble Sort.    2. Insertion Sort 6. Write a C program for    1. Linear Search    2. Binary Search |
| **Text Books & References:** | **TEXT BOOKS:**     1. D. Samanta, “Classic Data Structures”, Prentice Hall of India, 2nd Edition 2009. 2. S. Lipschutz, “Data Structures using C”, Tata McGraw Hill, Special Indian Edition 2012. |
| **E-Resources:** | 1. <https://nptel.ac.in/courses> 2. <https://freevideolectures.com/university/iitm> |