# Lesson Plan

**Name of Faculty**   :   **Dr. Sanjay Dahiya, Associate Professor of CSE**
**Discipline**   :   **Computer Science and Engineering**
**Semester**   :   **3rd (Odd)**
**Subject**   :   **Data Structure & Algorithm Lab using C/C++ (CSE-201- P)**
**Lesson Plan Duration**   :   **15 weeks (from August-December-2020)**
**Work Load (Lecture/Practical) per week (in hours): Lectures-08 hours (04hours of G-I & 04hours of G-II)**

| Week | Theory/ Practical (Group-I/ II) | | Topic Covered Date and Remarks | | |
|------|-----------------|------------------|------|-----|--------------------|
| | **Practical Day** | **Topics/ Programs** | **Date** | **HOD** | **Director-Principal** |
| 1st | 1 | **Two assignments related to creating and manipulating matrices and linear lists.** Write the programs in C/C++ to find Matrix Addition, Subtraction, Transpose, Multiplication, Inverse and Solution of Simultaneous Equations | | | |
| 2nd | 2 | **Two assignments associated with linked list, operations on linked lists and their applications.** Write the programs in C/C++ to Creating a linked list, Inserting and Deletion an element in a linked list | | | |
| 3rd | 3 | **Two assignments on array and linked implementation of stacks and queues** Write the programs in C/C++ to Implement Push and Pop operation on Stack using Array and Linked List | | | |
| 4th | 4 | **Two assignments on trees and their applications.** Write the programs in C/C++ to traverse a tree in Pre-order, In-order and Post-order manner | | | |
| 5th | 5 | **Two assignments on graphs and their applications.** Write the programs in C/C++ to Implement Depth First and breadth First Search in a Graph | | | |
| 6th | 6 | | | | |
| 7th | | **Minor test 1st** | | | |
| 8th | 7 | **Two assignments on different searching and sorting methods along with their complexity analysis.** Write the programs in C/C++ to Implement Linear and Binary Search. | | | |
| 9th | 8 | Write the programs in C/C++ to Implement Bubble, Selection, Insertion Sort and Radix Sort | | | |
| 10th | 9 | **One assignment on challenging problems on data structures to be given in groups.** | | | |
| 11th | 10 | Write the programs in C/C++ to Inset and Delete an element from Binary Search tree | | | |
| 12th | 11 | Write the programs in C/C++ to find shortest path in a weighted/directed Graph using Warshall's Technique. | | | |
| 13th | 12 | Write the programs in C/C++ to Implement Insertion and deletion operation on Queue using Array and Linked List | | | |
| 14th | | **Minor test 2nd** | | | |
| 15th | 13 | Write the programs in C/C++ to Implement Merge, Quick, Heap and Shell Sort. | | | |