Lecture Plan

Subject: **Data Structures (CSR13101) - Capsule Course [L-T-P = 3-0-0]**
Class: **III Semester B.Tech (ECE / E&I)**

Sl. No.	Name of the Topics	Number of Lectures
1	**Introduction to Data Structures** (Data structure overview, Data types, Creation and analysis of programs, Algorithm analysis)	02
2.	**Linear Data Structures - ARRAY** (Linear Array & its Representation, Two Dimensional Array & its Representation, Multi-Dimensional Array, Operations on Arrays, Applications – Linear System Equations, Polynomials, Sparse Matrix)	04
3.	**Linear Data Structures - STACK** (Stacks & its Representation, Operations on Stacks, Applications – Arithmetic Expression Evaluation, Parenthesis Matching, Recursion, Tower of Hanoi)	04
4.	**Linear Data Structures - QUEUE** (Queues & its Representation, Operations on Queues, Circular Queues, Double Ended Queue, Priority Queue)	03
5.	**Linear Data Structures – LINKED LIST** (Linked List, Operations on Linked List, Circularly Linked List, Doubly Linked List, Representing Stacks & Queues, Representing Polynomial, Applications – Polynomial Manipulation, Ordered Polynomial)	05
6.	**Non-Linear Data Structures - TREE** (Binary Tree & its Representation, Traversal Operation, Complete Binary Tree, Binary Search Tree, Height Balanced Tree, AVL Tree)	06
7.	**Non-Linear Data Structures - GRAPH** (Graph & its Representation, Graph Traversal, Shortest Path Algorithms - Bellman Ford and Dijkstra's)	04
8.	**Sorting & Searching** (Selection Sort, Bubble Sort, Quick Sort, Heap Sort, Merge Sort, Insertion Sort, Radix Sort, Linear and Binary Search)	03
9.	**Hashing** (Hashing, Hashing Techniques, Applications)	01
	TOTAL	**32**