Lesson Plan

Name of Faculty : **Dr. Sanjay Dahiya, Associate Professor of CSE**
Discipline : **Computer Science and Engineering**
Semester : **3rd (Odd)**
Subject : **Data Structure & Algorithm (CSE-201- T)**
Lesson Plan Duration : **15 weeks (from August-December-2020)**
Work Load (Lecture/Practical) per week (in hours): **Lectures-03 hours**

Week	Theory		Topic Covered Date and Remarks		
	Lecture-Day	Topic (Including Assignment/Test)	Date	HOD	Director- Principal
1st	1	Data Structure: Definition and its types			
	2	Abstract Data Types			
	3	Static and dynamic memory storage			
	4	Query and Solution			
2nd	5	Array and Matrices			
	6	Sparse matrices			
	7	Multi-dimensional arrays			
	8	Operations on arrays: Linear search			
3rd	9	Binary search			
	10	Selection sort			
	11	Bubble sort			
	12	Insertion sort			
4th	13	Merge Sort			
	14	Linked List: Type (singly, circular, header, doubly)			
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	16	Operations on Lists — create, Insert, display			
5th	17	Operations on Lists —Search, delete			
	18	Application of Linked List			
	19	Stacks: Definition, POP and PUSH operation			
	20	Array implementation of stacks			
6th	21	Linked implementation of stacks			
	22	Applications of Stacks: Infix, Prefix expression			
	23	Applications of Stacks: Postfix expression			
	24	Conversion and Evaluation of Expression			
7th		**1st Minor Test**			
8th	25	Recursion			
	26	Quick Sort			
	27	Queues: Definition, Array implementation of queues			
	28	Linked implementation of queues			
9th	29	Circular queues			
	30	Double-ended queues			
	31	Priority Queue			
	32	Query and Solution			
10th	33	Tree : Binary tree and their Properties			
	34	Complete Binary Tree and Threaded Tree			
	35	Linked and static representation of binary trees			
	36	Query and Solution			
11th	37	Different tree traversal algorithms (non-recursive)			
	38	Different tree traversal algorithms (non-recursive)			
	39	Binary Search Tree (create, delete, search, insert, Display)			
	40	Heap Sort and its complexity analysis			
12th	41	AVL Trees			
	42	Balanced multi-way search trees			
	43	Graphs: Definition, Array and linked representation of graphs			
	44	Traversal (BFS and DFS)			
13th	45	Adjacency matrix and adjacency lists, path matrix			
	46	Finding Shortest Path - Warshall's Algorithm			
	47	Hashing, Hash table, Hash functions.			
	48	Running time: Time Complexity			
14th		**2nd Minor Test**			
15th	49	Big-Oh - notation, Best Case, Worst Case, Average Case			
	50	Factors depends on running time			
	51	Evaluating time Complexity			
	52	Query and Solution			