NM Institute Of Engineering and Technology, Bhubaneswar

DEPARTMENT:CSE

LESSON PLAN: Academic Year 2023-24 (Odd Semester) **COURSE: DIPLOMA** **SEMESTER: 3rd**

Subject/Code: DATA STRUCTURES **Faculty Name: Prangya P Srichandan**

Sl. No.	Name of the Topic to Cover	Text Book	Teaching Method	Course Progress	Remark
1	Explain Data, Information, data types	T1	P		
2	Define data structure & Explain different operations	T3	G		
3	Explain Abstract data types	T2	P		
4	Discuss Algorithm & its complexity	T2	G		
5	Explain Time, space tradeoff	T2	G		
6	String Processing	T3	G		
7	Explain Basic Terminology, Storing Strings	T2	P		
8	State Character Data Type,	T1	G		
9	Discuss String Operations	T1	G		
10	Implementation of String Operations	T3	P		
11	State classification of DS	T1	G		
12	Discuss all types Static and Dynamic DS	T2	P		
13	Give Introduction about array	T3	G		
14	Discuss Linear arrays	T2	G		
15	representation of linear array In memory	T2	G		
16	Explain traversing linear arrays	T1	G		
17	Explain traversing linear arrays inserting	T3	P		
18	Explain traversing linear arrays deleting elements	T1	G		
19	Discuss multidimensional arrays	T3	G		
20	representation of two dimensional arrays in memory	T2	G		
21	representation of two dimensional arrays in memory major order	T3	G		
22	representation of two dimensional arrays in memory column major order	T2	P		
23	Explain pointers and Implementation	T3	G		
24	Explain sparse matrices.	T2	G		
25	Give fundamental idea Stacks	T1	G		
26	Implementation of stack	T1	G		
27	Explain array representation of Stack	T2	P		
28	Explain arithmetic expression	T2	P		
29	Explain polish notation & Conversion	T1	G		
30	Discuss application of stack	T3	G		
31	Implementation recursion	T2	G		

32	Discuss queues, priority queues.	T1	G		
33	circular queue	T3	G		
34	Give Introduction about linked list	T3	P		
35	Explain representation of linked list	T2	P		
36	Explain representation of linked list in memory	T1	G		
37	Discuss traversing a linked list,	T3	G		
38	searching	T3	G		
39	Discuss garbage collection.	T3	P		
40	Explain Insertion into a linked list	T2	P		
41	Explain Deletion from a linked list	T1	G		
42	Explain header linked list	T2	G		
43	Explain Basic terminology of Tree	T3	G		
44	Discuss Binary tree	T1	G		
45	its representation and traversal	T2	P		
46	binary search tree, searching,	T1	P		
47	Explain insertion	T3	G		
48	Explain deletion in a binary search trees	T3	P		
49	Explain graph terminology & its representation,	T2	P		
50	Explain Adjacency Matrix	T1	G		
51	Path Matrix	T2	P		
52	Discuss Algorithms for Bubble sort,	T1	P		
53	Quick sort,	T2	G		
54	Merging	T1	P		
55	Linear searching	T2	P		
56	Binary searching.	T1	G		
57	Discuss Different types of files organization	T3	P		
58	Discuss their access method,	T1	P		
59	Introduction to Hashing, Hash function	T1	G		
60	collision resolution, open addressing.	T2	G		
			Method of Teaching		
			G: Green Board Teaching		
			P: Power Point Teaching		
Faculty Signature					

At the end of this course, students will be able to:

Understand the concepts of linear data structures, their operations and applications

Understand the operation in abstract data type like Stack and Queue.

Understand the concept of pointers and their operations in linked list

Know the concepts of non-linear data structures, their operations and applications in tree and graph

Understand the various sorting and searching techniques

Understand file storage and access techniques.

TEXT BOOKS:

S. Lipschutz Data Structure Schaum Series		
A.N.Kamthane Introduction to Data Structure in C Pearson Education		
Reema Thereja Data Structure using C Oxford University Press		