GANAPATI INSTITUTE OF ENGINEERING & TECHNOLOGY(POLYTECHNIC)
DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Discipline: **COMPUTER SCIENCE & ENGG.**	Semester: **3RD**	Name of the Teaching Faculty: **Smaranika Moharana, Lecturer(CSE)**
Subject: **Data Structure**	No. of days class allotted/week: **04**	Semester from date:01.07.2024 to 08.11.2024 No. of weeks: **15**
Week	**Class Day**	**Theory**
1ST	1st	Explain Data, Information ,Data type.
	2nd	Define data structure and Explain different Operations. Explain Abstract data type.
	3rd	Discuss algorithm and its complexity.
	4th	Explain time ,space, tradeoff.
2ND	1st	Explain Basic Terminology, Storing String.
	2nd	State character Data type, Discuss String Operation.
	3rd	Discuss String Operation.
	4th	Give introduction about Array, Discuss Linear arrays, representation of linear array in memory.
3RD	1st	Explain traversing linear arrays, inserting and deleting elements.
	2nd	Discuss multidimensional array, representation of two dimensional arrays in memory(row major order & column major order),and pointer.
	3rd	Discuss multidimensional array, representation of two dimensional arrays in memory(row major order & column major order),and pointer.
	4th	Discuss multidimensional array, representation of two dimensional arrays in memory(row major order & column major order),and pointer.
4TH	1st	Explain sparse matrices.
	2nd	Explain sparse matrices.
	3rd	Give fundamental idea about Stack and Queue.
	4th	Give fundamental idea about Stack and Queue.
5TH	1st	Explain array representation of Stack.
	2nd	Explain Arithmetic expression ,polish notation & Conversion.
	3rd	Explain Arithmetic expression ,polish notation & Conversion.
	4th	Discuss application of stack, recursion.
6TH	1st	Discuss queues, circular queue, priority queue.
	2nd	Discuss queues, circular queue, priority queue.
	3rd	Give introduction about linked list .Explain representation of linked list in memory.
	4th	Discuss traversing a linked list and searching.
7TH	1st	Discuss traversing a linked list and searching.
	2nd	Discuss garbage collection.
	3rd	Explain insertion into linked list ,Deletion from a linked list ,header linked list.
	4th	Explain insertion into linked list ,Deletion from a linked list ,header linked list.
8TH	1st	Explain insertion into linked list ,Deletion from a linked list ,header linked list.
	2nd	Explain insertion into linked list ,Deletion from a linked list ,header linked list.
	3rd	Explain Basic terminology of tree.
	4th	Explain Basic terminology of tree.
9TH	1st	Discuss Binary Tree ,its representation and traversal, binary search tree, searching.
	2nd	Discuss Binary Tree ,its representation and traversal, binary search tree, searching.

	3rd	Discuss Binary Tree ,its representation and traversal, binary search tree, searching.
	4th	Explain insertion, deletion in a binary search tree.
10TH	1st	Explain insertion, deletion in a binary search tree
	2nd	Explain insertion, deletion in a binary search tree
	3rd	Explain Graph terminology & its representation.
	4th	Explain Graph terminology & its representation
11th	1st	Explain Graph terminology & its representation
	2nd	Explain Adjacent Matrix, Path Matrix.
	3rd	Explain Adjacent Matrix, Path Matrix.
	4th	Explain Adjacent Matrix, Path Matrix.
12th	1st	Discuss Algorithms for Bubble Sort. Quick Sort.
	2nd	Discuss Algorithms for Bubble Sort. Quick Sort.
	3rd	Discuss Algorithms for Bubble Sort. Quick Sort.
	4th	Merging.
13th	1st	Merging.
	2nd	Linear searching, Binary Searching.
	3rd	Linear searching, Binary Searching.
	4th	Linear searching, Binary Searching.
14th	1st	Discuss different types of files organization and their access method.
	2nd	Discuss different types of files organization and their access method.
	3rd	Discuss different types of files organization and their access method.
	4th	Discuss different types of files organization and their access method.
15th	1st	Introduction to Hashing, Hash function, collision resolution, open addressing.
	2nd	Introduction to Hashing, Hash function, collision resolution, open addressing.
	3rd	Introduction to Hashing, Hash function, collision resolution, open addressing.
	4th	Introduction to Hashing, Hash function, collision resolution, open addressing.

REFERENCE BOOKS:

Verified

1. **"Data Structure" by S. Lipschutz**
2. **"Data Structure using C" Reema Thereja**

Sign of Faculty 29.06.24

Sign of Sr.Lect S.R.Pattnaik 29.6.24

Sign of Principal 29/6/24