Module No.	Unit No.	Details of Topic	Hrs.
1.0		**Introduction**	(02)
	1.1	**Introduction to Data Structure** Types of Data Structure, , ADT (Abstract data type)	
2.0		**Linear data structure: Linked Lists**	(10)
	2.1	Linked list as ADT, Memory allocation & De-allocation for a Linked List, Linked List operations, Types of Linked List, Implementation of Linked List. Circular linked list, doubly linked list Application of Linked List: Polynomial manipulation Sparse matrix addition.	
3.0		**Linear data structure: Stacks and Queues**	(10)
	3.1	**Stack**: The Stack as an ADT, Stack operations, Array Representation of Stack, Linked Representation of Stack, Application of stack – Polish Notation application of stack- recursion	
	3.2	**Queues**: The Queue as an ADT, Queue operation, Array Representation of Queue, Linked Representation of Queue, Circular Queue. Priority Queue, Application of Queues – Simulation Double ended queue	
4.0		**Non-Linear data structures: Trees, Graph**	(06)
	4.1	**Trees**: Basic trees concept, Binary tree representation, Binary tree operation, Binary tree traversal, Binary search tree implementation, AVL tree Application on trees- Expression tree, Threaded binary trees	
	4.2	**Graph**: Basic concepts, Graph Representation, Graph traversal (DFS & BFS)	
5.0		**Searching and Sorting**	(04)
	5.1	**Sorting :**Sort Concept, Selection sort, Insertion Sort	
	5.2	**Searching :** Search concept, Hashed List Search, Hashing Methods , Collision Resolution	
6.0		**Advanced Data Structures**	(04)
	6.1	Heap , B Trees, B+ Trees	
		heap applications- priority queue	
		Total	**36**