FALL 2022 – CT-159 DSAA COURSE OUTLINE

Week No.	TOPICS	NO. OF PERIODS
1	Abstract data types, Arrays, Pointers, linear search, binary search	03
2	Elementary Sorting Techniques – bubble sort, insertion sort, selection sort	03
3	Linked List - Insertion, Deletion, Search, and Sorting	03
4	Doubly and Circular Linked Lists	03
5	Stack – Implementation using array and linked list	03
6	Queue and Priority Queue – Implementation using array and linked list	03
7	Recursion – its types, issues, examples	03
8	**Mid-term Examination**	03
9	Advanced sorting techniques – Merge sort, quick sort	03
10	Binary Tree – Properties and its types	03
11	Binary Search Tree – Operations and applications	03
12	Binary Search Tree – Issues, Balance in binary search trees	03
13	Hashing – hash function, collision resolution technique, rehashing	03
14	Graph – representation and traversal, shortest path algorithm	03
15	Graph – Minimum spanning tree, graph algorithms, topological sorting	03
	Total per Semester:	45

BOOKS:

- Data Structures and Algorithms in C++, 4th edition, by Adam Drozdek.
- Open Data Structures (in C++) by Pat Morin.

SESSIONAL MARKS CRITERIA:

Assessment Type	Marks	Schedule (Week No.)
Mid-term Examination	20	8th week
Assignment	5 + 5	5th and 15th week
Quiz	2.5 + 2.5	6th and 14th week
Class Performance	5	-
Total Sessional Marks	**40**	