Title	**Data Structures and Algorithms Lab**
Code	**CMP-411**
Credit Hours	1
Category	Computing
Prerequisite	CMP-342: Object Oriented Programming
Co-Requisite	None
Follow-up	None
Course Description	**Topics:** Implementation of the concepts studied in "CMP210-Data Structures and Algorithms" Performance Analysis/Measurement Sparse Matrices N-Dimensional Arrays Stack ADT, Expressions Evaluation Recursion: Backtracking Queue: Double Ended Queue. Self-Referencing Classes and Dynamic Memory Allocation. Linked List: Singly Linked Lists, Circular Lists, Linked Stacks and Queues (Double Ended List), Doubly Linked Lists. Trees: Binary Trees Binary Search Tree Introduction to Height Balanced and AVL Trees. Heaps and Heaps as Priority Queues, Double Ended Priority Queue. Searching: Linear Search, Binary Search, and Types of Indexing. Hashing: Hash Functions, Collision Resolution: Open Hashing, Chaining Sorting types and Techniques: Logical and Algorithmic Implementation of Selection, Bubble, Insertion, Shell, Radix, Merge, Quick, Heap Sort Graphs: Graph terminology, Adjacency List and Adjacency Matrix and Adjacency list representation of Graph; Elementary Graph Operations: Breadth First Search and Depth First Search, Spanning Trees (BFSST, DFSST).
Text Book(s)	
Reference Material	