CSCI 340   **Course Outline**
                    Data Structures and Algorithm Analysis

I.   STANDARD TEMPLATE LIBRARY
- Containers
  - ◇ **Sequence containers:** string, vector, stack, queue, deque, list
  - ◇ **Associative containers:** set, multiset, map, multimap
- Iterators
- Algorithms
  - ◇ Non-modifying sequence operations
  - ◇ Modifying sequence operations
  - ◇ Sorting

II.   BINARY TREES
- Trees, Binary Trees, and Binary Search Trees
- Implementing Binary Trees
- Insertion and Deletion

III. BALANCING A TREE – AVL TREES

IV.   HEAPS
- Heaps as Priority Queues
- Organizing Arrays as Heaps

V.   B-TREES

VI.   HASHING
- Hash Functions
- Collision Resolution
- Deletion

VII. GRAPHS
- Graph Representation
- Graph Traversals
- Shortest Paths
- Spanning Trees
- Topological Ordering
- Cycle Detection