Algorithms and Data Structures Topics Covered:

This course is intended to help you learn the basics of problem solving by going through various algorithms and data structures from basics to advanced concepts. Throughout the class we will tackle several problems in the whiteboard and as homework during the week.

Pre-requisites: Basic programming knowledge required

1. Introduction to Data structures
2. Analyze performance of data structures
3. Understand the implementation of arrays
4. Queue data structure
5. Stack data structure
6. Hashtable/Dictionary
7. Bit Manipulation
8. String manipulation
9. Understanding Binary trees and BSTs
10. Building a better BST
11. Linked List
12. Graph data structure
13. Kruskal and Prim's algorithm
14. Dijikstra's algorithm
15. Advanced sorting algorithms
    a. MergeSort
    b. HeapSort
    c. QuickSort
16. Permutations and Combinations
17. Recursion

Lab exercises will be given to you to be done on your own time.