Course Objective: Data structures and computer algorithms are the building blocks in computer programming. This course will give students a comprehensive introduction of common data structures, and algorithm design and analysis.

Prerequisite: E115 Introduction to Programming or knowledge of C++ programming

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(To shorten turn-around time, please include "CPE360" in the subject line for all the emails.)

Grader: Email: Phone:


Reference Books:

Course Website: http://www.ece.stevens-tech.edu/~ychen/cpe360/index.html

Main Topics:
- Review of C++
- Introduction of algorithm analysis
- Sorting and order statistics: heap sort, merge sort, bubble sort, quick sort, bucket sort
- Elementary data structures: arrays, stacks, queues, linked lists
- Advanced data structures: heaps, trees, hashing
- Searching algorithms: linear and binary search
- Elementary graph algorithms: representations, breath-first search, depth-first search
- Minimum spanning trees: Prim's Algorithm, Kruskal's Algorithm
- Single-source shortest paths and all-pairs shortest paths

Grading: The grade for the class will be based upon homework, quizzes, and exams.
- Homework: (25%) There will be regular homework assignments including theory problems and programming assignments.
- Quizzes: (15%) There will be two to three in-class quizzes to test students’ understanding of the current materials. For each quiz, a notice will be given one class ahead to allow students to prepare.
- Midterm: (25%) There will be one midterm exam.
- Final Exam: (35%) There will be a final exam. The final exam is comprehensive.

All exams and quizzes are closed book. Make certain to do the homework and everything should be fine!