Algorithms and Data Structures

Fall 2009, CIS 3223

http://www.ist.temple.edu/~hbling/Teaching/09F_3223/

Lectures: Tue, Thu 2-3:20, TL 001B
Lab Times: Mon 1-2:50pm, CC 104
Instructor: Haibin Ling (http://www.ist.temple.edu/~hbling/)
Office: Wachman Hall, Room 305, 215-204-6973
Email: hbling AT temple.edu
Office Hours: Tue, Thu 3:30-4:30pm. Other hours by appointment that should be scheduled at least one day in advance.

TA: Vuk Malbasa (http://www.vukmalbasa.com/)
Office, Wachman Hall, Room 321, 215-204-7230
Email: vmalbasa AT gmail.com
Office Hours: Mon 3-4:30pm, Fri 1-2:30pm. Other hours by appointment that should be scheduled at least one day in advance.

PREREQUISITES

Grade of C or better in C+IN SC 2166 (0166) or Mathematics 3098 (W205) and C+IN SC 2168 (0068); Grade of C or better in Mathematics 1042 (0086).

TEXT

The major textbook for the class is:


Recommended textbooks:


DESCRIPTION

Students will learn to analyze algorithms and their associated data structures to determine their correctness and efficiency. The algorithms studied will include brute-force, greedy, divide-and-conquer, and back-tracking. Algorithms using numbers, trees and graphs will be studied. Finally limitations on algorithms will be introduced.

The course will cover the following topics:

• Mathematical Foundations of Algorithms
• Divide-and-Conquer Algorithms
• Data Structures
• Graph Algorithms
• Greedy Algorithms
• Dynamic Programming
• Network Flow and Linear Programming
• NP-Complete Problems

GRADING
• Lab assignment and homework: 30%
• Projects: 10%
• Midterm exam: 20%
• Final exam: 30%
• Quiz and attendance: 10%

MISCELLANEOUS
• Any student who has a need for accommodation based on the impact of a disability should contact me privately to discuss the specific situation as soon as possible. Students with documented disabilities should contact Disability Resources and Services at 215-204-1280 in 100 Ritter Hall to coordinate reasonable accommodations
• The homework assignments are due in class, on the specified due date. No late assignments will be accepted unless there are legitimate circumstances. All assignments are individual, except when collaboration is explicitly allowed. All the sources used for problem solution must be acknowledged, e.g. web sites, books, research papers, personal communication with people, etc. Academic honesty is taken seriously.