CSE 361: Advanced Sequential and Parallel Algorithms
Fall 2006

Course Information: *http://www.engr.uconn.edu/~ykim/cse361/*

Instructor:

Yoo-Ah Kim — Office: ITEB 239. Office phone: (860)486–1458.
E-mail: ykim@engr.uconn.edu.
Office hours: Tue and Thu 10 - 11 am (or by appointment)

Class Time:

Tuesday and Thursday, 2:00-3:15 CAST 206

Text:

Required:

- Thomas Cormen, Charles Leiserson, Ron Rivest, and Cliff Stein. (Second Edition) *Introduction to Algorithms*, McGraw Hill and MIT Press, 2001.

Recommended:

- Computer Algorithms by E. Horowitz, S. Sahni, and S. Rajasekaran, Computer Science Press, 1998
- Network Flows: Theory, Algorithms, and Applications, by Ravindra K. Ahuja, Thomas L. Magnanti, and James B. Orlin, Prentice Hall, 1993.

Course Work: Course work will consist of homework assignments, and 2 exams (a midterm and a comprehensive final). Homeworks are to be turned in at the start of class on the due date. No late homeworks will be accepted. Assignments are to be written up *neatly*. Badly written assignments will not be graded. Please staple your homework.

All homeworks are expected to be done independently. You may discuss *general* solution strategies with classmates, but you must *write up the solutions in your own words*.

It is your responsibility to make sure that you pick up all homeworks and handouts. All course information and homeworks will be available on the web page. Solutions to homeworks will be given out in class.

Grading: Final grades will be based on homework assignments, a midterm exams, and a comprehensive final exam. The relative weights of these will be *roughly* 10% for the homework total, 40% for the midterm, and 50% for the final exam.

Syllabus: The topics and order listed below are tentative and subject to change.

1. Analysis of Algorithms: Basics
2. Advanced design techniques: Greedy algorithms, Dynamic programming
3. Graph algorithms: Matching, Network Flows.
4. NP-completeness: What does it mean for a problem to be NP-complete? Examples of NP-complete problems.
5. Randomized and Approximation algorithms
6. Parallel Algorithms
7. Other Advanced Topics: Linear Programming, Polynomials and FFT, String Algorithms