

## 2110622: Data Management

First Semester, 2002

### Instructors:

1. Dr. Taratip Suwannasart (อ.ดร. ทาราทิพย์ สุวรรณศาสตร์)  
Office: 18-03 Engineering Building 4  
Phone: 218-6975  
E-mail: [staratip@chula.ac.th](mailto:staratip@chula.ac.th)  
URL: <http://www.cp.eng.chula.ac.th/~tsw>
2. Assistant Prof. Wiwat Vatanawood (ผศ. วิวัฒน์ วัฒนาวุฒิ)  
Office: 18-14 Engineering Building 4  
Phone: 218-6975  
E-mail: [wiwat@chula.ac.th](mailto:wiwat@chula.ac.th)  
URL: <http://www.cp.eng.chula.ac.th/~wiwat>

### Grading:

Midterm Exam	35% (July 22, 2002)
Final Exam	35% (September 16, 2002)
Homework Assignments	20%
Class Participation and Quiz	10%

### Text Book:

Mark Allen Weiss, Data Structures and Algorithm Analysis in C, Addison-Wesley, 1997.

### References:

1. Thomas A. Standish, Data Structures, Algorithms & Software Principle in C, Addison-Wesley, 1995.
2. Michael J. Folk and Bill Zoellick, File Structures Second Edition, Addison-Wesley, 1992.
3. Robert L. Kruse, Bruce P. Leung, and Clovis L. Tondo, Data Structures and Program design in C, Prentice-Hall, 1991.
4. Thomas R. Harbron, File Systems Structures and Algorithm, Prentice-Hall, 1988.

## Outline of Topics:

1. Introduction and Mathematics Review
2. Algorithm Analysis
3. Lists, Stacks, Queues
4. Trees
  - Binary Trees
  - Binary Search Trees
  - Splay Trees
  - B-Trees
5. Hashing
6. Priority Queues (Heaps)
  - Binary Heaps
  - Application of Priority Queues
  - d-Heaps
  - Leftist Heaps
  - Skew Heaps
  - Binomial Heaps (Optional)
7. Sorting
  - Insertion Sort
  - Shell Sort
  - Heap Sort
  - Merge Sort
  - Quick Sort
8. The Disjoint Set ADT
9. Definitions of Graphs
10. File Management