Course: Data Structures

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1. Course Objectives

   The course is the third course of the Computer Science curriculum. The outline of
   the course corresponds to the course C2 recommended by the ACM (Association of
   Computing Machinery). The course introduces and develops methods for designing and
   implementing abstract data types using the C++ programming language. The main focus
   is on the object-oriented design and programming in problem solving, and the
   fundamental concepts, tools and techniques in the design of data structures and
   associated operations. The course assumes students have a strong background in
   structured programming and some object-oriented programming experience. The
   requirements include programming assignments and written exercises, a midterm, and a
   final exam.

2. Textbook

   F. M. Carrano, "Data Abstraction and Problem Solving with C++: Walls and

3. Reference

   E. Horowitz, S. Sahni and D. Metha, "Fundamentals of Data Structures in C++",
   1995.

4. Subjects

   • Software development life cycle
   • Recursive programming
   • Performance analysis and measurement
   • ADTs Array, Stack and Queue
   • ADT Lists
   • ADT Trees
   • ADT Graphs
   • Sorting
   • Hashing
   • AVL Trees
5. Grading

- Homeworks (10): 20%
- Programming Assignments (3): 15%
- Midterm (11/17/2008) 30%
- Final: (1/12/2009) 35%

6. On-line Class Notes

(a) go to http://www.im.ntu.edu.tw/~sunny
(b) select “Courses Teaching” link
(c) select “Data Structures”

7. Teaching Assistants

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