COMPSCI 242-001 Data Structures and Algorithms (Fall 2007)

Instructor: Dr. Jyh-haw Yeh
Office: MEC 302B   Phone: 426-3034    email: jhyeh@cs.boisestate.edu
URL: http://cs.boisestate.edu/~jhyeh/teaching.html
Office Hours: MW: 4:30pm-6:00pm  TTH: 10:00am-10:30am
Class Time: TTH 10:40am-12:30pm  Location: MEC 114

Textbook:


Course Objectives

At the end of the course, students will be capable of

• applying the most efficient known algorithms to solve problems such as searching, sorting, scheduling, and optimization.

• choosing appropriate data structures to implement algorithms.

Catalog Description

Basic data structures (continued from COMPSCI 225), introduction to design and analysis of algorithms, fundamental algorithms for sequences, sets, graphs and combinatorial problems, introduction to complexity of problems and to parallel and distributed algorithms. Examples are drawn from various areas of computer science.

Prerequisites

• COMPSCI 225: Introduction to Computer Science II

• MATH 170: Calculus I

• MATH 187: Discrete and Foundational Mathematics I

Course Outline Topics:

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Number of Lectures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter 2, 3, 4</td>
<td>5</td>
</tr>
<tr>
<td>Chapter 6, 7, 8</td>
<td>5</td>
</tr>
<tr>
<td>Chapter 11, 12, 18 or balanced search tree(s)</td>
<td>7</td>
</tr>
<tr>
<td>Chapter 15</td>
<td>4</td>
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<tr>
<td>Chapter 22, 23, 24</td>
<td>7</td>
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<tr>
<td>Exams &amp; reviews</td>
<td>4</td>
</tr>
</tbody>
</table>
Design and Analysis:

- Students will get algorithm design experience in this course.
- Students will get running time analysis experience in this course.

Grades and Grading Policies

Grading:
- Homeworks/Programs: 40%
- Test 1: 15%
- Test 2: 15%
- Final: 30%

Final Grade: You are guaranteed to receive at least the grade as follows (I reserve the right to lower the cutoffs if I feel it is appropriate).

- $88 \leq A^- < 90 \leq A < 95 \leq A^+$
- $78 \leq B^- < 80 \leq B < 85 \leq B^+$
- $68 \leq C^- < 70 \leq C < 75 \leq C^+$
- $58 \leq D^- < 60 \leq D < 65 \leq D^+$
- $F < 58$

Grading Policy:
- Homeworks will not be accepted late.
- Programming assignments must be submitted electronically to the instructor by 11.00PM of the due date to avoid any penalty. Every extra 10% (accumulated) late submission penalty will be incurred for every class past after the deadline. 50% is the maximum accumulated penalty. For example, suppose the deadline is on Tuesday of week 5, the following table shows the late submission penalty.

<table>
<thead>
<tr>
<th>Turn in before</th>
<th>Penalty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuesday 11.00PM (week 5)</td>
<td>0%</td>
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<tr>
<td>Thursday 11.00PM</td>
<td>10%</td>
</tr>
<tr>
<td>Tuesday 11.00PM (week 6)</td>
<td>20%</td>
</tr>
<tr>
<td>Thursday 11.00PM</td>
<td>30%</td>
</tr>
<tr>
<td>Tuesday 11.00PM (week 7)</td>
<td>40%</td>
</tr>
<tr>
<td>Thursday 11.00PM</td>
<td>50%</td>
</tr>
</tbody>
</table>

All students should submit correct and complete files to the instructor. Any accidentally wrong or incomplete submission may need to submit again and incur some late submission penalty.

The points you can get for incorrect programs are as follows.
- Can not be compiled or run time error: no points.
- Wrong answer: Varying from 0% to 80% points depends on the answer.

Collaboration: Each student must work independently unless specified otherwise.