Welcome to CS 171

Textbook:

Michael Goodrich and Roberto Tamassia, Data Structures & Algorithms in Java, 4th edition, Wiley, isbn 0-471-73884-0

Text website: http://ww3.datastructures.net/

Instructor:

Dr. Jianmin Ma
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Meeting: 1130-1245 TuTh
Lab: 230-330 W
Hours: M Th 2-3PM, or by appointment

Prerequisite: Our prerequisite is CS170, or an equivalent introduction to Java (such as AP credit). In particular you should have seen programming structures such as if and while-loop, classes, and inheritance. CS171 is a prerequisite for CS253, where you will study more advanced data structures and algorithms.

Course Content: This course is about algorithm design and analysis. For this purpose, we will study various data structures including arrays, linked lists, stacks, queues, trees, etc. We will cover various searching and searching algorithms.

We will use both empirical and analytic techniques. Much of our work will be in Java, but there will also be some written work, and some work in the C language.

Book and Rough Syllabus Our textbook is "Data Structures & Algorithms in Java", 4th edition, by Michael Goodrich and Roberto Tamassia. The book is quite detailed, and has much more material than we can hope to cover in a semester. Nevertheless we will attempt to cover at least the core topics of Chapters 3-8, 10, and 11. In order to get at some practical issues, we will also do some work in the C programming language. Therefore, you need a C language reference; I recommend The C Programming Language by Kernighan and Ritchie, but any modern reference should suffice.

Class Attendance is mandatory. If you must miss class due to illness or other valid excuse (e.g. athletic event) please send me email with explanation. An inordinate number of absences will be handled in accordance with the College's policy.

Being late for classes is quite annoying. Being late twice carries a penalty of <u>one percent of overall points</u>.

Evaluation: Your course grade is based on written exercises, projects, and tests.

- Homework (58 %) Mid-term (2 x 12%) Final (18 %)
- 90 - 100 A | 80 - 89 B | 70 - 79 C | 60 - 69 D | 0 - 59 F

<u>Projects and written exercises</u>, unless otherwise specified by the instructor, are to be completed individually. You will turn in your projects with scripts on a Unix machine. Late assignments will not be accepted without permission. If permission is given, the following penalties will be assigned:

- 1 day late: 10% reduction
- 2 days late: 20% reduction
- 3 days late: 30% reduction
- Not accepted after 3 days late.

Exams cannot be made up without prior arrangement with the instructor with the exception of Emergency. Two in-class exams are on the Tuesdays of the following dates: **March 2, April 18**

Beware! The exams will be more conceptual than the programming assignments. Therefore doing well on your programs will not suffice to prepare you for the exams; you must also keep up with the concepts in lectures in order to do well on the exams.

Honor Code

THE HONOR CODE OF OXFORD COLLEGE APPLIES TO ALL WORK SUBMITTED FOR CREDIT IN THIS COURSE. BY YOU SIGNATURE ON SUCH WORK YOU PLEDGE THAT WORK WAS DONE IN ACCORDANCE WITH RULES STIPULATED ON THE WORK OR IN THIS SYLLABUS.