

CS303 Algorithms and Data Structures

Spring 2008

3B MW 5:30-6:45

SEE THE MASTER SYLLABUS ONLINE FOR MORE DETAIL

Prerequisites : CS250, 302 & MA 126 with "C" or better in each. 4 hours

Instructor : Kenneth Sloan <sloan@uab.edu>, 133 Campbell Hall

Office Hours : Mondays 2-3pm

Text : Sedgewick, *Algorithms in Java*, Parts 1-4,
Sedgewick, *Algorithms in Java*, Part 5.

- I. Introduction - Math review, review of the programming process
- II. Algorithm Analysis - $O()$
- III. List, Stacks, Queues
- IV. Trees
- V. Hashing
- VI. Priority Queues, Heaps
- VII. Sorting
- VIII. Sets
- IX. Graphs
- X. Algorithm Design Techniques
- XI. Advanced Topics (as time allows)

This course is accompanied by CS303L. Algorithms and Data Structures Laboratory. The class work will be language independent and concentrate on design and analysis. The laboratory will concentrate on practical application, with many written and programming exercises.

There will be two in-class Quizzes and a Final Examination:

Quiz1: Monday, 11 February (subject to change)

Quiz2: Monday, 17 March (subject to change)

Final Exam: Wednesday 30 April 4:15-6:45 p.m.

Grades are based on both the assignments administered through the Lab and the examinations administered through the main class. There is ONE grade assigned for the course - please do not expect the lab instructor to be able to tell you anything about your likely grade. Exams are graded on a very wide scale (often, 50% is a B; do not attempt to compute your likely grade. You may, of course, discuss your progress/performance in the course with either the Lab instructor or the professor at any time.

All Quizzes and exams are open book, open notes. All are "comprehensive".

Class attendance is mandatory. There will be frequent short quizzes at the start of class. Schedule changes will be announced well in advance - in class.

Lab attendance is mandatory - all lab assignments/quizzes will be handed in/out at the scheduled lab times. See the lab instructor for details. DO NOT ASK for assignments to be e-mailed to you and DO NOT ASK to submit assignments outside normal lab hours.

Lab assignments will be of two types: [homework](#) and [programming](#). *Programming assignments include a WRITING component: you will be required to write a free-standing document reporting on your methods and results.* This is in addition to normal documentation of the code itself. This writing component will be graded on both technical content and on the quality of the writing. The reader should be able to appreciate what you did, how you did it, and what your results were WITHOUT LOOKING AT THE CODE.

All cell phones and pagers must be turned OFF or set to SILENT during class or lab.

Computers in the classroom are to be turned OFF - before, during, and after class. The lecture is not the right place to work on your homework, read e-mail, or Google answers to questions. Students may use personal laptops TO TAKE NOTES - but not to work on homework, read e-mail, or Google answers to questions. Personal laptops will NOT be allowed during exams.

All work handed in must be your own work. If the assignment involves any sort of research or re-use of other people's work, that work must be appropriately cited. Plagiarism is a serious offense and violators will be handled according to strict UAB procedures.