CMSC 251: Algorithms

Spring 1994

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Office hours: Monday: 2pm–3pm, Wednesday: 3pm–4pm.

Class Time: Tu Th, 11:00–12:15, Room: CLB 0111.

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Office Hours: Monday: 10am–11am, 3:30pm–4:30pm, Friday: 10am–11am.
Also by appointment. The BEST way to contact the TA is to send him email. You are also encouraged to go to the Tutorial Room 1109, between 9 and 5 (weekdays) to get help from Tutors.

Course Overview: This course presents fundamental techniques for designing and analysing efficient computer algorithms, and proving their correctness. General topics include growth of functions, summations, recurrences, sets, basic probability, sorting and selection.

Text: Thomas Cormen, Charles Leiserson, Ron Rivest, *Introduction to Algorithms*, McGraw Hill and MIT Press, 1990.

Prerequisites: CMSC 112, CMSC 150, Each student is expected to know the basic concepts of programming (e.g. loops, pointers, recursion), discrete mathematics (proof by induction), and calculus (logarithms, differentiation, integration).

Course Work: Course work will consist of 12 homework assignments, and 3 exams (2 midterm's and a comprehensive final).

The midterm's will be in class on Feb 22 and April 5. The final exam will be on May 13. Homework problems will generally be mathematically oriented (some of the homeworks may involve programming). Only the best 10 homeworks will be taken into account for the final grade, however you should do all the homework's. Homeworks are to be turned in at the start of class on the due date. Homeworks will usually be given out on Tuesday's and will be due a week later. Since homework solutions may be discussed in class, NO LATE HOMEWORKS WILL BE ACCEPTED. (In other words, hand in whatever you have finished.) All class work is to be done independently. Plagiarism will be treated very seriously. Assignments are to be written up NEATLY. Badly written assignments may not be graded. Please staple your homework.

It is your responsibility to make sure that you pick up all homeworks and handouts.

Grading: Final grades will be based on homework assignments, the midterm exams, and the comprehensive final exam. The relative weights of these will be 10% for the homework total, 25% for each midterm, and 40% for the final exam.

Syllabus: The topics and order listed below are tentative and subject to change.

1. Introduction to algorithm design and analysis, and review of mathematical preliminaries.
2. Order notation.
3. Summations.
4. Recurrences.
5. Sets, etc.
6. Basic Probability.
7. Sorting and Selection.