Course Information

You are responsible for everything on this handout.

Time and place

Lecture are MWF 4–5 in 179 Chem. Discussion sections are: W 5-6 in 1132 Bainer; W 6-7 in 102 Hutch; R 5-6 in 102 Hutch. Go to whichever section you want.

Instructor

Phillip Rogaway. Engineering II, #3063. E-mail: `rogaway@cs.ucdavis.edu`.
URL: http://www.cs.ucdavis.edu/~rogaway/. Office hours: See the course Web page.

Teaching Assistant

Conrad Tse. E-mail: `cptse@cs.ucdavis.edu`. For office hours and office, see the course web page.

Course objectives

There are two objectives for this course: (1) for you to learn standard material in discrete math, particularly those concepts in discrete math which arise frequently in computer science; and (2) for you to gain some mathematical maturity, improving your ability to read and produce technical writing, to think creatively, and to craft correct proofs. The second goal is as important as the first. You will not succeed in this class by way of memorization or pattern matching. Your goal is to really understand what we cover.

Grading

Weekly problem sets — 20%
Midterm — 20%
Quizzes — 20%
Final — 40%

There will be a single midterm, given on Monday, May 15. There will be pop quizzes (probably three of them), each taking up about 20 minutes of the class. There is no making up a missed quiz. Quizzes may not be announced. All exams are closed book/closed notes.

It is possible that the grader will only grade a proper subset of the problems turned in.

Your grade could differ from what one gets by applying the above percentages. Among the factors that may cause this: (1) You must pass the final to pass the course. (2) You won't get a course grade more then one letter grade better than your grade on the final. (3) If you are missing a single quiz, I will find a way to effectively ignore it (that is, you won't be penalized).

All of the above should be interpreted as guidelines. It is subject to my discretion.

If you believe that a problem was misgraded you may submit it for regrading. This must be done within one week of when the material was returned to you. If something was just recorded wrong, or summed up in error, show it to me and I will fix it.

Avoiding taking this class

If you already know the material of this class, do not waste your time taking it. You can come discuss options with me.

Texts

There are lots of books on this topic, but none that I found to my liking. The book that I ordered, now at the bookstore, is

• Kolman, Busby, and Ross, *Discrete Mathematical Structures* (4-th edition). Prentice Hall.

I will consider the book recommended, not required. Some other books I might consult include:

◦ Goodaire and Parmenter, *Discrete Mathematics with Graph Theory*, Prentice Hall. *I recently found this book, which looks nice. Some interesting results and a good level of sophistication.*

◦ Graham, Knuth, and Patashnik *Concrete Mathematics: A Foundation for Computer Science*, Addison Wesley. *A lovely book, but way too sophisticated for this course.*

◦ Johnsonbaugh, *Discrete Mathematics* (4-th edition), Prentice Hall. *A quite standard text for this course.*

◦ Rosen, *Discrete Mathematics and its Applications* (4-th edition), McGraw Hill. *A quite standard text for this course. Pretty comprehensive.*

Course Web page

http://www.cs.ucdavis.edu/~rogaway/classes/20/spring00/

Access the page directly or navigate from my own home page. From this page you can retrieve homeworks, homework solutions, and get other course materials. You will even be able to check your grades from here. Most materials will be PostScript, so you may need to download a PostScript previewer and configure your browser to invoke it.

Course newsgroups

`ucd.class.ecs20` — This is for me or Kim to communicate things of general concern to the class. Please read this newsgroup regularly; you are responsible for anything on it. Don't post to this newsgroup. Use the following newsgroup instead.

`ucd.class.ecs20.d` — This is the "discussion" newsgroup which you may use to communicate among yourselves. Read this newsgroup or not — the choice is yours. Do not post what amounts to solutions to homework problems.

E-mail questions

Sorry, I do not not normally respond to questions on course material sent to me by e-mail. There isn't time. Please see me in office hours instead, or see the TA, or use the newsgroup. Similarly, I can't routinely see students outside of office hours—please stick to the times I've set up.

Problem sets

Homeworks will be due at 12:10 pm on the indicated date. Turn in homeworks in the marked box in Engineering II, #2131. No late homeworks are accepted.

Much of what one learns in this course comes from trying to solve the homework problems, so work hard on them. I intend for you to find some of the problems challenging. Doing a conscientious job on the homeworks is by far the best preparation for the exams, and it is essential for mastery of the material.

Your writeups should be clear, terse and neat. Aim for elegance. Typeset solutions are appreciated, and serious students are encouraged to learn to use LaTeX and a reasonable drawing tool. Understandability of the solution is as necessary as correctness. Don't be surprised to lose points if you provide a correct solution with a poor writeup.

If you can't solve a problem, indicate what you've tried and where the difficulty lies. Please don't try to bullshit your way to some points—know what you know and be clear about it.

Oddly (to me!) many students are happier to spend long hours hacking in front of a machine than peacefully thinking beneath a tree. Computer science is about thinking and problem solving. If you hate the material in this class or find it overly difficult, you should seriously reconsider if you are in the right major.

Collaboration

I permit, but discourage, collaboration on homeworks. I think that solitary struggling on homeworks is part of the value of this class.

If you do collaborate, the manner in which you collaborate will have a profound impact on how much you get out of the homeworks (and this, in turn, will have a big impact on how you do on the exams). First, think about the problems and try to solve them on your own. If, after giving a problem some real thought, you just can not get anywhere with it, then you might wish to discuss it with other students, with me, or with the TA. In any case, you must individually write up all solutions.

Many students try to get through the homeworks by forming study groups and jointly trying to solve the homeworks. Evaluate carefully if you are learning the desired problem solving skills better than if you were spending the same time trying to get it on your own. Your goal on the homeworks should not be to maximize your points, but to help you learn a certain set of material and skills.

Academic misconduct

If you discuss problems with anyone, acknowledge him/her/them. Also acknowledge any books which you consulted other than your own.

Write up problems entirely on your own (even if you discuss a problem with someone else). Don't look at other peoples' solutions. Highly similar writeups will be considered cheating.

Some homework questions will have been used in prior years. Do not consult old problem set solutions for this class—neither solutions of another student from a prior term, nor solutions handed out in class from a prior term. If your homework resembles the grader's solution he's bound to notice, and you'll have a problem you don't want to have.

Instances of academic conduct will be referred to Judicial Affairs.

Advising

If you have a problem, please come to see me. I never cook up and eat a student, even if I'm hungry. I am too too busy, and have a terrible memory for names and faces both, but it doesn't mean that I don't care. Please feel comfortable to come talk to me.