• Generally the assignments will be fairly challenging. It is often helpful to look at the problems early; even if you don’t spend a lot of time on them right away, it helps to have the problems stewing in your head for a few days. Do not try to start the night before it is due.

• Unless stated otherwise, when asked to “give an algorithm” for something, you should also provide a proof of correctness and an analysis of its running time. Assume that when we ask for an “efficient algorithm,” we’re looking for an algorithm that runs in polynomial time.

• You’ll notice that some of the questions consist mainly of an English description, without much mathematical notation. This is intentional—part of the point of the problem sets is to practice formalizing algorithmic problems that are initially described in free text.

You can see examples of this process in the book for the course—the problems considered are initially described informally, then formalized using mathematical notation. You should do the same, defining enough notation to be able to express the problem and its solution carefully, and explaining the meaning of all the notation you use.

• Typically, the clearest way to explain an algorithm is in English, with the use of some notation. A clear explanation followed by annotated pseudo-code is also fine.

Proofread your solutions. Put thought into writing clear, concise solutions with consistent variables and coherent organization. Define your variables, state your assumptions, and explain what you’re doing. Good solutions and proofs should use both English explanations and mathematical notation as appropriate. Unformatted, rambling walls of text with little or no mathematical notation should be avoided – these solutions are usually vague, imprecise, and are rarely correct.

Similarly, long pieces of pseudo-code with no accompanying explanation tend to be basically indecipherable by anyone but the author (and usually indecipherable by the author as well, after a few days pass). Moreover, our experience is that solutions like this usually turn out to have inaccuracies that render them incorrect. We reserve the right to deduct a significant number of points for solutions that consist only of pseudo-code with no explanation, even if they turn out to be correct. Long chains of equations should similarly include a justification of key steps.

It’s in your interest to write up solutions neatly—this makes it easier to understand what’s going on in your solution, and to assign partial credit even if it isn’t completely correct.

• There are a number of problems at the end of the chapters in the book. These represent a good way to get more practice solving problems related to the material (for example, to help in studying for the tests). If you do work on any of these problems, I will be happy to discuss your solutions with you in office hours.

If you want to use a result claimed in one of these end-of-chapter problems as part of the solution to one of the assigned homework problems for the course, you must include a proof
of this result with your solutions. (I.e. you can’t simply cite the fact that the question was asked in the book and rely implicitly on the answer. This is, of course, in contrast to the rest of the text, which you should feel free to cite as part of homework solutions.)

A few general reminders about the homework policy:

**Format and Handin:** Assignments are to be typeset with LaTeX. Hints for getting started with LaTeX and a template can be found on the course homepage. Each problem must be printed on a separate page with your name, the assignment and problem number, student collaborators, and the honor code at the top. Print front and back. If you need multiple sheets for a problem, use a staple. Printers are fickle, so don’t try to print 10 minutes before class.

**Late Submissions:** Late homeworks (anything handed in after the start of class) may be handed in within 24 hours of their deadline for half credit. After 24 hours no credit is given. The first two late assignments (up to 24 hours) incur no penalty. Let me know if you’re handing an assignment in late, and put a printed copy in my mailbox – emailed solutions are filtered as spam.

**Group Work:** This is a class where working with your peers is not only allowed, it is encouraged. However, the assignments you hand in must be written up by yourself and represent your own thoughts and work. More concretely, while you may discuss ideas with your classmates, no one may leave a meeting with notes or solutions written down on paper or digitally. If you use a board, erase your work when you’re done. If you really understand the discussion, you should be able to reconstruct it on your own. You may not use the Internet or other references other than the textbook, unless told otherwise.

Groups can involve at most four students. In my experience, groups of two or three work best. All students working in a given group must be actively participating. A student who has completed a problem should not lead another student through their solution.