CS111 Guidelines for Preparing Homework Assignments

In this class you will be expected not only to master the material, but also learn how to write with clarity and rigor. Your homework papers must be readable, written in grammatically correct English, and aesthetically formatted. You must use standard notation and terminology and your solutions should be complete, clear, and rigorous.

Three basic principles:

The purpose of writing down your solution is not to just record your thoughts -- it is to communicate the solution to others.

The way you arrive at the solution is not necessarily the best way to describe it. After you solve each homework problem, spend some time thinking about the best way to present your solution.

If you cannot find an elegant way to explain your solution, then you don't really understand it. Quite likely, your solution may be just wrong.

Other rules:

Notation and terminology.

o Make sure that all terms and notations that are not standard or common knowledge (within the given subject) are clearly defined.

o Avoid notation clashes. There should be a one-to-one correspondence between the notations and concepts. (Occasional exceptions are acceptable. For example, some letters, like i,j, typically used for indices, are often recycled.)

o Use standard and mnemonic notation whenever possible. Notation should be "sticky" -- in a reader's mind, the notation should stick to the concept. If it's a graph, denote it G. If it's an edge, call it e. Sometimes hard choices need to be made, but at least give it some thought instead of simply choosing letters at random.

o Make sure your subscripts and superscripts show correctly in text. Their font size should be some 10-30% smaller and they need to be visibly lowered (subscripts) or raised (superscripts). LaTeX will do it for you automatically.

o It is strongly recommended that you use italicized fonts for most mathematical terms (other fonts are also occasionally useful). Keep in mind that the font choice is *part of the notation*. For example, $\boldsymbol{X}$ is a different notation than X (also, of course, different from $\boldsymbol{x}$). LaTeX will italicize math notation automatically -- you just need to enclose all mathematical terms and formulas in a math environment.

Figures. Pictures are always helpful. This is particularly true for problems involving graphs. You can use any drawing software to produce pdf files that can be embedded in a LaTeX document (other formats are allowed too).