CSI 503 – Data Structures and Algorithms – Fall 2009

General Instructions For all Homeworks and Examinations

1. For problems requiring proofs, rigorous proofs must be provided. *Informal explanations or examples will not receive any credit.*

2. If you are presenting a proof by induction or a proof by contradiction, say so at the beginning of your proof.

3. If a problem requires you to use a certain method, no credit will be given to solutions not using that method.

4. In proofs by induction:
   (a) Clearly state and verify the base case(s).
   (b) Clearly state the inductive hypothesis (what is being assumed).
   (c) Clearly state what you will be proving in the inductive step.
   (d) Provide a proof of the statement given for (c). If the proof involves a sequence of calculations, indicate how the current step was obtained from the previous step.

5. For “prove or disprove” problems:
   (a) The first line of your answer must clearly indicate whether you are trying to prove or disprove the given statement.
   (b) If you are trying to prove the given statement, as indicated before, your proof must be rigorous. To disprove a statement, you must provide a counter-example and explain why it is a counter-example.

6. In problems involving calculations, show your work clearly. No credit will be given if you merely state the answer without showing how you arrived at the answer.

7. If a problem asks you to give an algorithm, your answer should *not* start with code written in a language such as C, C++ or Java. You should first give a brief overview, conveying the main idea behind the algorithm and any data structures that the algorithm may need. This should be followed by the pseudocode for the algorithm. The pseudocode should be understandable to someone who may not have a detailed understanding of the semantics of programming languages such as C, C++ or Java.