CSCI 3352 Test 2 Review Sheet

The second test of the semester will cover everything we have talked about since the midterm. The format will be very similar to that on the midterm. The test will basically consist of short answer questions with the possibility of a little math. Because of the nature of chapter 8, I'm actually going to make this exam open book. It just doesn't seem practical to ask you to even write down all the different formulas on a cheat sheet. Following that logic, we'll make it open note as well. So you can bring in any notes that you have for this class. Lastly, you will be able to use a calculator. If you don't feel like bringing one, computers tend to have them.

Random Number Generation – Know what we want in a random number generator, the different types of random number generators, and how well the different types perform in different regards.

Random Variates – Know how we generate numbers from different distributions. Know the different ways that we describe distributions ($f(x)$ vs. $F(x)$). Know the significance of the different information presented in the chapter on this for how to fit a distribution to a set of input data and then how you would generate values from that distribution using only a U(0,1) generator.

Data Analysis – Understand how to analyze the data that comes out of a simulation.

Molecular Dynamics – Know the basics of atoms and molecules that help us figure out how we do MD simulations. Know what MD simulations are and how they are significant. What are the types of MD simulations and what can those types tell us? Have a basic idea of how we perform MD simulations.

Comparing Configurations – Understand the basic logic that goes into comparing pairs of simulation configurations to determine if one is better than the other. Know how that has to be altered when we are looking at suites of simulations.

Experiment Design – Know how you would go about setting up a basic round of simulations on k different factors. Know how you analyze the data from those simulations to get information. This latter task includes making metamodels, response surfaces, and optimization of configurations.