COMP 413 Test 1 Study Guide

Here are some specific things you need to study for test 1 on September 27:

- From week 1: types of requirements (eg, functional vs. non-functional), testability, tradeoffs between various non-functional requirements like performance and maintainability
- From week 2-3: equality vs. identity, value semantics vs. reference semantics (eg, what things can and cannot change based on using a variable that refers to a Java primitive or an object)
- From weeks 3 and 4: interfaces and why they are useful in programming, plus how to design or reverse-engineer from a JUnit TDD (test-driven development) test script to produce an interface and a concrete implementing class; in particular, being able to fully specify a concrete class that implements a given interface, whether that class is "normal" or generic (that is, with a type **<T>**)

Test 1 Roadmap

Test 1 is scheduled for the first 45-50 minutes of week 5's class (September 27). It is open-book/open-notes and will emphasize topics from weeks 1 through 4. There will be a combination of true/false, multiple-choice, modeling, and coding/code completion problems.

You will be allowed to refer to electronic resources for the course as follows:

Open-book/open-notes tests will include the following section:

You may use your computer or e-reading device while taking this test, provided it is not used for any other purpose other than reading course textbooks and other course-related textual materials including the code examples provided for this course. That is, it must not be used for communication, programming, or anything that would specifically help you to answer the questions. As a clarifying example, a lookup in a general API reference is permitted, while a problem-specific internet search violates the communication restriction. If you are unable to work within these constraints, you are required to turn off the computer/device at this time and rely on your own memory and/or printed materials.

By signing below, you agree that you have acted ethically while preparing for and taking this exam and agree to be bound by the applicable university academic integrity policies and procedures. (Please do not forget to print your name above.)

Please focus mainly on these topics from the weekly schedule categorized according to the following Bloom taxonomy levels: **Bloom's taxonomy in the cognitive domain** (in successively advanced levels)
K = know/remember
C = comprehend/understand
A = apply

These are defined here:
http://en.wikipedia.org/wiki/Bloom's_Taxonomy#Cognitive

- requirements: functional versus nonfunctional (K)
- nonfunctional requirements: role of testability (C)
- nonfunctional requirements: tension between performance and various others (C)
- automated testing (A)
- test code coverage (K)
- data structures and data abstraction (A)
- basics of oop (A): value versus reference semantics, equality versus identity, genericity, relationships between classes and interfaces

Please let me know if you have any questions. In general, you should view tests not just as an evaluation tool but also as a mechanism for receiving feedback and revisiting some topics in more depth.