CSC 20 – Program Concepts and Methodology II
Midterm Exam Study Guide
(Tentative list – 2/23/18)

Materials: Coverage from Jan 22nd – Feb 28th

General:

To be well prepared for the midterm exam, please review your lab assignments 1, 2, 3, 4, 5, and 6. Understand how they worked and implemented. In addition, please also study the lecture materials and make reference to chapters in book where recommended.

Specific materials:

1. Know the Java fundamentals for programming: the parts of a Java program, the Scanner class and System.out.println method, variables and literals, primitive data types (byte, short, int, double, etc) and reference types (Array, Strings), and operators.

2. Java statements: Simple statements, compound statements, alternative statements: if, switch, repetitive statements: for, while, do/do-while. Know the ordering of operator precedence & associativity. Given an expression, evaluate its outcome's value. Know data conversion rules (widening and narrowing).

3. Be able to explain and apply the stepwise refinement process. Know how to work with coding optimization scenarios.

4. Array and String: Declaration and initialization. Use assignment operator with array. Array cloning, and equality. String concepts, declarations, and operators.

5. Java classes: classes and object, instance fields and methods, constructors, overloading methods and constructors. Package and import statements. Passing objects as arguments to methods.

6. Inheritance: Define inheritance, calling the Superclass Constructor, overriding superclass methods. Know two access specifications within a class: private and public. Know how to write a setters/getters methods.

7. Linked Lists: Understand concepts. Familiar with operations on linked list (traversing, addFirst, addLast, insertBefore, insertAfter, backward, forward, etc). Concepts of a node stored as an object (i.e CsusStudent) with pointer.