CSC 260.002 Study Guide for the final exam Exam Date: Tuesday, December 13, 10:10 am – 12:10 pm

This exam covers material from chapters 9-11 of the textbook, power point notes for these chapters, sample programs posted to the website, and programming assignments 8-10. Keep in mind though that the material is cumulative so you will still need to know the concepts of programming we've covered all semester. The exam is a paper-and-pencil exam, not on-line. It is closed book and closed note. Be able to read code and understand what the code does, read code to determine if it is syntactically correct (or identify any syntax errors), be able to write code based on the concepts below, and be able to answer questions regarding concepts.

Chapter 9

Be able to write classes including using the proper forms of visibility modifiers, writing appropriate constructors and writing appropriate accessor and mutator methods. Know how to read UML notation as presented in chapter 9 to write a class. Know why we need accessor and mutator methods. Know how to write toString and equals methods. Know how to use this both to call code from within this class (e.g., a 0-arg constructor invoking a 2-arg constructor) and for assigning instance data in constructors. Know how objects are passed as parameters and how this differs from primitive data. Know what garbage collection is. Know how to write a user/driver program for a given class. Know how to define and use arrays of objects. NOTE: you will not have to know anything about writing or using static methods of a class.

Chapter 10

Know what wrapper classes are and how to use them (particularly Integer and Double). Know the terms boxing and unboxing. Know how to use the BigInteger and BigDecimal classes including how to instantiate a variable of one of these types and how to use the methods add, subtract, multiply and divide. You will not need to know any other material from this chapter.

Chapter 11

Know how to extend a class and the changes you might need to make to a class to permit to be extended. Know what a polymorphic variable is. For a child class, know how to define new constructors, how to override a parent class method, and how to use the reserved word super, particularly to invoke a parent class' method in an overridden method (e.g., a toString) or child class' constructor. Know the difference between overriding a method and overloading a method. Know how to use final to prevent a class from being extended or a method from being overridden. Know how to use instanceof on a polymorphic variable and how to cast a polymorphic variable to assign it to another polymorphic variable or when calling a method of a polymorphic variable. You will not need to know about constructor chaining or the ArrayList class.

Other material

Be able to read and write code that includes declaring variables, assignment statements, if/ifelse/nested if-else statement, loops, method calls, methods, instantiating objects, passing objects methods, and 1-D arrays.