COP 3330 – Object Oriented Programming in Java
Exam 2 Review

Date: 10/19/2026
Time: 12:00 pm – 1:15 pm (come early)
Location: HS1-119

Outline of course material thus far:

1. Defining Your Own Class
    a. How to choose and list instance variables
    b. Defining Constructors
    c. Defining Instance Methods
    d. Method Overloading
    d. Role of static variables
    e. Role of static methods
    f. How to add methods to an incomplete class
    g. HAS-A relationship
2. Inheritance + Polymorphism
    a. Syntax for defining a class that inherits from another class.
    b. Role of protected instance variables.
    c. When and how super() gets called for constructors.
    d. How to override a method from a base class
    e. How to decide when it's necessary to override a method from a base class.
    f. Distinction between reference types and object types.
    g. Coordinate/ColorCoordinate example
    h. fraction/mixedfraction example
    i. Pacman example
    j. Polymorphism definition
    k. Rules for compilation of code with inheritance
    l. Rules for how a method call at compile time is bound to a specific method signature.
    m. Once bound at compile time, rules for which method IS ACTUALLY executed.
    n. Understanding the advantages of inheritance via code reuse
    o. Tracing Examples!
3. Interface and Comparable Interface
    a. Rules for defining an interface (syntax)
    b. Rules for building a class that implements an interface
    c. Shape2D example
    d. Comparable interface in Java and use of generic
    e. Sorting Student Presentation example
    f. Other examples: Sideways Sorting, Sort of Sorting
4. Abstract Classes
    a. Similar to Interface with "more substance"
    b. Allowed to specify instance variables.
    c. Allowed to specify code for methods.
    d. Allowed to have abstract methods which subclasses must implement.

Exam Format

Short Answer
Coding Questions – write code segments, fill in solutions to full programs, won't have to write boring template code (public static void main...)
Tracing questions

100 points

Defining Your Own Classes and Inheritance – 40 points
Inheritance and Polymorphism Tracing Question – 25 points
Interfaces, Comparable Interface, Abstract Classes – 35 points

Quiz Aids
Necessary Java documentation will be provided.