# CS 350 Programming Language Design Spring 2021

4th Quiz Guide

#### Date and time

Mon. April 12<sup>th</sup>, 1:30 – 2:00 P.M. (LA 16)

### Major topics:

## **Chapter 11: Abstract Data Types**

- 11.2 Data abstraction
- 11.4 language Examples: C++, Java, and Ruby

#### **Chapter 12: Support for OOP**

- 12.1 Introduction
- 12.2 Object-Oriented Programming
- 12.3 Design Issues for Object-Oriented Languages
  - The Exclusivity of Objects
  - Single vs. multiple inheritance
  - Allocation of objects
  - Dynamic vs. static binding
  - Nested classes
  - Initialization of objects
- 12.5 Implementation of Object-Oriented Constructs: C++, Java and Ruby

# **Chapter 13: Concurrency**

- 13.1 Introduction
- 13.2 Subprogram-Level Concurrency
  - Multiprocessor Architectures
  - Task states and scheduling
- Thread programming using OpenMP
  - Directives and clauses
  - Data sharing directives
  - Parallel for
  - Synchronization