

CS202: Important Due Dates

Spring 2018

(The following dates are subject to change!)

<u>Program Number</u>	<u>Assignment Description</u>	<u>Due Date</u>	<u>Late Date</u>	<u>Due Time</u>
Program #1	Design and UML Diagram ¹	Mon 4/16	Wed 4/18	6pm
Program #1	Program ²	Mon 4/23	Fri 4/27	6pm
Program #2	Program ²	Wed 5/2	Mon 5/7	6pm
Program #3	Design and UML Diagram ¹	Fri 5/11	Mon 5/14	6pm
Program #3	Program ²	Fri 5/18	Wed 5/23	6pm
Programs #4-5	Design and UML Diagram ¹	Fri 5/25	Wed 5/30	6pm
Program #4	Program ²	Fri 6/1	Wed 6/6	6pm
Program #5	Program ²	Wed 6/13	No Late Program #5	6pm
Term Paper	OO Term Paper (4-7 pages)	Mon 6/11	None	6pm

<u>Quiz or Exam #</u>	<u>Topics</u>	<u>Date</u>	<u>Time</u>
Quiz #1	<ul style="list-style-type: none"> Inheritance Initialization Lists Copy Constructors Data Structures: LLL 	Tuesday 4/24	In-class (50 min)
Midterm Exam	<ul style="list-style-type: none"> Topics 1, 3, 4 and 5 Data Structures: LLL, CLL, DLL, ARR 	Tuesday 5/1	In-class (1 hr 50 min)
Quiz #2	<ul style="list-style-type: none"> Operator Overloading Rvalues vs Lvalues Constant Methods Data Structures: BST 	Tuesday 6/5	In-class (50 min)
Final Exam	<ul style="list-style-type: none"> Comprehensive Topics 1-8 Data Structures: LLL, BST 	Tuesday 6/12	5:30pm-7:20

¹ Design submission includes a 600 word write-up and a UML diagram

² Program submission includes .cpp and .h files, Efficiency write-up (400 words) and gdb write-up (200 words); please tar your submissions.

CS202: Course Outline: Lecture and Lab

Spring 2018

(The following dates are subject to change!)

Week: Topic:**Reading/Projects:****Week #1: Introduction**

4/3

Introduction

Objectives for the course

Discuss expectations

Review Outline

****Login to D2L**

****Get a CS Account**

(For a Review of C++
examine Prata Ch 1-8)

Week #1: Object Oriented Design: Concept

4/5

Topic #1 Responsibility Driven Design

What is Object Oriented Design?

Examples of how Abstraction can help

Identifying and Assigning Responsibilities

Determining Collaborations and Identifying their Purpose

Examining Relationships between Classes

Implementing the Design: Terminology & Concept

Inheritance

Polymorphism

Measuring the Quality of the Design

Alternatives?

Common Design Flaws

Week #1 Lab Session:

**By Lab#1 – Get a CS Account
(prior to your first lab!)**

Linux Lab #1 – For students new to PSU:

Putting the pieces together of a C++ Program

Linux Level #3.1 – vim Tips

*Students who have not completed the linux & vim exercises
from CS162 and CS163 must start with Level #1 and 2*

CS202 Lab #1 – Getting Started with OO Concepts

Read the background information prior to attending lab

Learn about UML Diagrams

There are NO Prelab Exercises for the first lab!

- If you can't complete the entire lab, consider attending a makeup session
- Complete the self-check quiz in the CS202 lab manual after you have finished the lab! Remember to work on the self-check quiz as closed-book, closed notes!

Advanced C++ Concepts: Inheritance and Copy Constructors

Week: Topic:

Week #2

4/10, 4/12 Topic #2 Remember C++...

Data Abstraction vs.
Object Oriented Programming

Reading/Projects:

Prata Chapter 10

Topic #3 Introduction to Inheritance

Terminology, Single Inheritance
Multiple and Virtual Inheritance

Prata Chapters 13-14

Copy Constructors

Week #2 Lab Session:

Bring completed Prelab Exercise!

Linux Exercise #3.2 – vim Tips

CS202 Lab #2 – Inheritance

- Bring your two Lab books and have the CS202 Lab #2 Pre-Lab exercises completed!
- Remember to read the background information before attending lab
- In review, pay close attention to the Linux exercises #1.4 and 1.5 on backing up and archiving
- Complete the self-check quiz in the CS202 lab manual after you have finished the lab! Remember to work on the self-check quiz as closed-book, closed notes!
- Bring your Pre-Lab exercise completed!
- Examine design methodologies
- *Building an employee OO program for a local department store*

Advanced C++ Concepts: Dynamic Binding

Week: Topic:

Week #3

Reading/Projects:

4/17, 4/19

**Topic #4 Dynamic Binding,
Run Time Type Identification**

Prata Chapter 13

Week #3 Lab Session:

Bring completed Prelab Exercise!

Linux Exercise #3.3 – File Types and Permissions

CS202 Lab #3 – Dynamic Binding

- Bring your Pre-Lab exercise completed!
- *Implement solutions using dynamic binding*
- Complete the self-check quiz in the CS202 lab manual after you have finished the lab! Remember to work on the self-check quiz as closed-book, closed notes!
- And, remember to program every day!!

User Defined Conversions and Exception Handling

Week: Topic:

Week #4

Reading/Projects:

4/24, 4/26 Topic #4 User Defined Conversions

**Topic #5 Exception Handling
Namespaces**

**Prata Chapter 15
Prata Chapter 9**

4/24 Quiz #1

Week #4 Lab Session:

Bring completed Prelab Exercise!

Linux Exercise #3.4 – Utilities

CS202 Lab #4 – Review Data Structures and Recursion

- Bring your Pre-Lab exercise completed!
- Remember to read the background information in the lab manual prior to completing the prelab exercises
- *Practice recursive solutions with linear, circular, and doubly linked lists*
- Use the self-check quiz after the lab is over to determine your level of proficiency!
- *** Pay particular attention to the CS202 CS Midterm Proficiency Demonstration section

Building User Defined Data Types

Week: Topic:

Week #5

Reading/Projects:

Midterm is 5/1

5/3 Topic #6 C++ Dynamic Memory Issues & Operator Overloading

Constructors allocating memory

Destructors and Dynamic memory

The Behavior of Objects

Constant Objects, Logical Constness

Midterm Proficiency Practice and Demonstrations

Demonstrations are required to pass this class and are by appointment. Watch **D2L mail** for an appointment schedule.

Students will be demonstrating C++, data structures, recursion, and gdb at the midterm demonstration. All students should be fluent with either vi, vim, or emacs and will be asked to demonstrate features of the editors such as navigation, search and replace.

Week #5 Lab Session:	Bring completed Prelab Exercise!
Linux Exercise #3.5 – Searching with grep	
CS202 Lab #5 – Exception Handling	

- Bring your Pre-Lab exercise completed!

Building User Defined Data Types: Introduction

Week: Topic:

Week #6

Reading/Projects:

5/8, 5/10

Continue with Topic #6

Topic #6 C++ Dynamic Memory Issues & Operator Overloading

Operator Overloading

Rules, Guidelines

Rvalues, Modifiable Lvalues

Constant References

Constant Member Functions

Prata Chapter 11

Lecture Notes #3, 4

Examples

Week #6 Lab Session:

Bring completed Prelab Exercise!

Linux Exercise #3.6 – Make

CS202 Lab #6 – Operator Overloading

- Bring your Pre-Lab exercise completed!
- *Experience operator overloading*

The Process of Learning other Programming Languages

Week: Topic:

Week #7

5/15, 5/17

Topic #8 Learning Programming Languages
Compare and contrast Java and C++
Discuss Garbage Collection
Discuss References

Week #7 Lab Session:

**Bring completed Prelab Exercise!
Install an IDE prior to Lab!**

Linux Exercise #3.7 –Revision Control

**CS202 Lab #7 – IDE Tutorial
Begin Lab #8 – Java Workshop**

- Bring your Pre-lab exercise completed!
- Begin the Java Workshop(Lab 8)
- *Aimed at first time IDE users*

Object Oriented Programming in Practice

Week: Topic:

Week #8

5/22, 5/24

Analyze OOP solutions
Examine OOP solutions and design OOP alternatives in class
Group activities to investigate how to learn other programming languages

Week #8 Lab Session:

Bring completed Lab #8 Prelab Exercise!

**Linux Exercise #3.8 – vim Preparation
Lab #8 – Java Workshop**

- *Aimed at first time Java programmers*
- *Students that already know Java should assist other students*

Preparation for the Upper Division Classes

Week #9

**5/29, 5/31 Topic #7 Friends, Nesting, Static Members
Template Functions and Classes**

Week #9 Lab Session:

Bring completed Lab #9 Prelab Exercise!

Linux Level #3 Self Check Exercises

CS202 Lab #9-Recursion in Java

- Bring your Pre-Lab exercise completed!
- Review and Practice for the final proficiency demonstration

Completion of CS202!

Week #10

**6/5 Prepare for the Final Exam
Quiz #2**

6/7 Review

**Week #10 Lab Session: Bring completed Prelab #10 Exercise!
CS202 Lab #10 – BST Review**

*****Important to prepare for final prof. Demos!**

- Practice for Proficiency demos
- Bring your Pre-Lab exercise for the lab being made up
- *Review and Practice for the final proficiency demonstration*

Final's Week

Comprehensive Final Exam:

- **Final Exam: Tuesday June 12th – 5:30pm-7:20pm*** Notice the time!**

**Final Proficiency Demos take place
BY APPOINTMENT ONLY.**

Final Proficiency Demonstrations take place by appointment during finals week.

All Testing Center exams must be completed by Wednesday June 13th and should be taken at the same time as the in-class students.

All Proficiency Demos must be completed by Wednesday June 13th