CS202: Important Due Dates

Summer 2017

(The following dates are subject to change!)

Program Number	Assignment Description	Due Date	Late Date	Due Time
Program #1	Design and UML Diagram[1]	Fri 7/7	Wed 7/12	6pm
Program #1	Program[2]	Fri 7/14	Wed 7/19	6pm
Program #2	Program[2]	Fri 7/21	Wed 7/26	6pm
Program #3	Design and UML Diagram[1]	Mon 7/31	Wed 8/2	6pm
Program #3	Program[2]	Fri 8/4	Wed 8/9	6pm
Programs #4-5	Design and UML Diagram[1]	Fri 8/18	Mon 8/21	6pm
Program #4	Program[2]	Mon 8/21	Fri 8/25	6pm
Program #5	Program[2]	Wed 8/30	No Late Program #5	6pm
Term Paper	OO Term Paper (4-7 pages)	Mon 8/21	None	6pm

Quiz or Exam #	Topics	Date	Time
Quiz #1	• Inheritance • Initialization Lists • Copy Constructors • Data Structures	Tuesday 7/18	In-class (50 min)
Midterm Exam	• Topics 1, 3, 4 and 5 • Data Structures	Tuesday 7/25	In-class (1 hr 50 min)
Quiz #2	• Operator Overloading • Rvalues vs Lvalues • Constant Methods • Data Structures	Tuesday 8/22	In-class (50 min)
Final Exam	• Comprehensive • Topics 1-8 • Data Structures	Tuesday 8/29	4:45-6:35

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

Summer 2017

(The following dates are subject to change!)

Week: Topic: **Reading/Projects:**

Week #1: Introduction

6/27 **Introduction** ****Login to D2L**

Objectives for the course ****Get a CS Account**

(For a Review of C++

Discuss expectations examine Prata Ch 1-8)

Review Outline

Week #1: Object Oriented Design: Concept

6/29

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: **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:		Reading/Projects:
Week #2		
7/4 – PSU IS CLOSED – HAPPY 4th of JULY!		
7/6	**Topic #2 Remember C++...** Data Abstraction vs. Object Oriented Programming	Lecture Notes #1 **Prata Chapter 10**
	Topic #3 Introduction to Inheritance Terminology, Single Inheritance Multiple and Virtual Inheritance	**Prata Chapters 13-14** Lecture Notes #5, 6
	Copy Constructors	

Week #2 Lab: **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:		Reading/Projects:
Week #3		
7/11, 7/13	**Topic #4 Dynamic Binding, Run Time Type Identification**	**Prata Chapter 13** Lecture Notes #7

Week #3 Lab: **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:		Reading/Projects:
Week #4		
7/18, 7/20	**Topic #4 User Defined Conversions**	Lecture Notes #8
	Topic #5 Exception Handling	**Prata Chapter 15**
	Namespaces	**Prata Chapter 9**

Week #4 Lab: **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: **Reading/Projects:**

Week #5

Midterm is 7/25

7/27 Topic #6 C++ Dynamic Memory Issues & Operator Overloading

Constructors allocating memory Lecture Notes #2
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: **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: **Reading/Projects:**

Week #6

8/1, 8/3 **Continue with Topic #6**
Topic #6 C++ Dynamic Memory Issues & Operator Overloading

Operator Overloading **Prata Chapter 11**
Rules, Guidelines Lecture Notes #3, 4
Rvalues, Modifiable Lvalues
Constant References
Constant Member Functions

Examples

Week #6 Lab: **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: **Reading/Projects:**

Week #7

8/8, 8/10 **Topic #8** Learning Programming Languages
Compare and contrast Java and C++
Discuss Garbage Collection
Discuss References

Week #7 Lab: **Install an IDE prior to Lab!**

Linux Exercise #3.7 – Revision Control

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

- Bring your Pre-Lab exercise completed!
- Begin the Java Workshop (Lab 8)
- *Aimed at first time IDE users*
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Object Oriented Programming in Practice

Week: Topic: **Reading/Projects:**

Week #8

8/15 **Analyze OOP solutions**
Examine OOP solutions and design OOP alternatives in class
Group activities to investigate how to learn other programming languages

8/17 **NO LECTURE**

Week #8 Lab: **Bring completed Prelab Exercise!**

Linux Exercise #3.8 – vim Preparation

CS202 Lab #8 – Java Workshop (Continued)
CS202 Lab #9 – Recursion in Java

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

Preparation for the Upper Division Classes

Week #9

8/22, 8/24	**Topic #7 Friends, Nesting, Static Members**	Lecture Notes #9
	Template Functions and Classes	Lecture Notes #10, 11

Week #9 Lab: **Bring completed Prelab Exercise!**

*****THIS IS THE LAST LAB SESSION!!!!!!!!!!!!!!!!!**

Linux Level #3 Self Check Exercises

C202 Lab #10 – BST Review * Important to prepare for final prof. demos!**

- Bring your Pre-Lab exercise completed!
- *Experience returning references*

Completion of CS202!

Final Proficiency Demos take place August 30th
THEY ARE BY APPOINTMENT.

Week #10

8/29 **Comprehensive Final Exam:**

- **Final Exam: Tuesday August 29th 4:45pm – 6:35pm**