COP3331 Object-Oriented Software Design

COP3331.002S20 Object Oriented Sftware Design
Spring 2020 Course Syllabus
3 Credit Hours, Department of Computer Science and Engineering

Class Meeting Times: Mon, Wed 11:00AM - 12:15PM, ENC 1002

Instructor: Tempestt Neal
Instructor's Office: ENB 310
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1 University Course Description

Design of a computer program using an Object-Oriented programming language. Extension of programming knowledge from a procedural language to an object-oriented language. Analysis of program requirements.

2 Course Prerequisites

CDA 3103 Minimum Grade: B (may be taken during same term) and COP 3514 Minimum Grade: B

3 Course Objectives and Learning Outcomes

At the successful completion of the course, students can expect to:
1. Know the basic computing terminology and the concepts behind object-oriented design.

2. Understand what classes and objects are.
3. Know how to design and implement classes and objects in C++.
4. Know how to analyze, design and write software using the object-oriented language C++.
5. Understand function overloading and parameter passing.
6. Understand the concepts of Abstract Data types, encapsulation, inheritance and polymorphism.
7. Know how to use arrays, vectors and how to use the Standard Template Library.

4 Required Textbook

Mary Delamater and Joel Murach, *Murach's C++ Programming*, 2018, Mike Murach & Associates, Inc. ISBN 978-1-943872-27-5, Available **here**.

Additional Resources:

- `http://www.cplusplus.com/`

- `https://www.programiz.com/cpp-programming`

- `https://www.learncpp.com/`

- `http://www.functionx.com/cpp/index.htm`

- `https://www.youtube.com/watch?v=vLnPwxZdW4Y`

- `http://www.stroustrup.com/C++.html`

5 Grading Policy

There will be three grading categories weighted as follows:

- Exams: 45%

  - Exam 1 (15%, 2/12/20)
  - Exam 2 (15%, 3/11/20)
  - Exam 3 (15%, Final exam is scheduled for 5/4/20 10A-12P)

- Weekly Labs: 20% (Released every Monday, Due Wednesday the following week)

- Flex Project: 35%

Note:

- If you believe that an error has been made in grading, a request must be submitted to the TA **no later than one week (within 7 days)** after the assignment or exam is returned.

- There are **no guarantees** for extra credit.

- **Late assignments will not be accepted.** See late work policy below.

- Exam topics may vary depending on how quickly we cover material during class. You will be allowed one sheet (8.5 × 11, one side only) of notes for all exams that **must be** submitted with the exam.

Letter grades will be assigned according to the following scale (I **do not** curve grades!):

>= 93.0	A
90.0-92.9	A-
87.0-89.9	B+
83.0-86.9	B
80.0-82.9	B-
77.0-79.9	C+
73.0-76.9	C
70.0-72.9	C-
60.0-69.9	D
< 60.0	F

6   Attendance Policy

Attendance is not required, but we will use in-class time to discuss important topics and practice important concepts that may not be present in the book. Attendance is strongly encouraged. It also harder for me to help you during office hours if you have not been present for lecture.

7 Course Schedule

(Subject to Change)

Week	Textbook Coverage	Topics
1/13	Chapters 1, 2	Introduction, Setting up an IDE
1/20 (**No class 1/20**)	Chapters 3, 4, 6	Making decisions, Loops, Data types, Dynamic typing
1/27	Chapters 5, 7, 8	I/O streams and files, Functions, and Debugging
2/3	Chapters 9, 10	Structure, enumerations, STL containers and iterators
2/10	Chapter 11, 12, 13	STL algorithms, arrays, C strings, and exceptions, ***Exam 1***
2/17	Chapter 14	OOP: Intro to classes, Encapsulation, UML
2/24	Chapter 15	OOP: Inheritance and polymorphism
3/2	Chapter 16	OOP: Static members and functions, overloading
3/9	Chapters 14-16	Reviewing OOP, ***Exam 2***
3/16	-	**Spring Break**
3/23	Handouts	MVC Design Pattern
3/30	Chapter 17, 18	Pointers and memory, Templates
4/6	Handouts	Event-based Programming
4/13	Handouts	Event-based Programming
4/20	Handouts	Functional and Reactive Programming
4/27	-	Flex Project
5/4	-	***Exam 3***: Final exam, Monday May 4, 10A-12P

8 Standard University Policies

Policies about disability access, religious observances, academic grievances, academic integrity and misconduct, academic continuity, food insecurity, and sexual harassment are governed by a central set of policies that apply to all

classes at USF. These may be accessed at: https://www.usf.edu/provost/faculty/core-syllabus-policy-statements.aspx

9 Course Policies

9.1 Late Work Policy

All assignments are due by 11:59:59PM on Canvas. You will have a 10-minute grace period to submit any assignment; no points will be deducted for being late if submitted by 12:09:59A. At 12:10:00A, the assignment is considered late and WILL NOT be accepted.

9.2 Extra Credit Policy

Extra credit is not guaranteed.

9.3 Grades of "Incomplete"

The current university policy concerning incomplete grades will be followed in this course. For USF Tampa undergraduate courses and USFSM undergraduate and graduate courses: An "I" grade may be awarded to a student only when a small portion of the student's work is incomplete and only when the student is otherwise earning a passing grade. The time limit for removing the "I" is to be set by the instructor of the course. For undergraduate students, this time limit may not exceed two academic semesters, whether or not the student is in residence, and/or graduation, whichever comes first. For graduate students, this time limit may not exceed one academic semester. "I" grades not removed by the end of the time limit will be changed to "IF" or "IU," whichever is appropriate.

9.4 Make-up Exams Policy

If a student cannot be present for an examination for a valid reason (validity to be determined by the instructor), a make-up exam will be given only if the student has notified the instructor in advance that s/he cannot be present for the exam. Make-up exams are given at the convenience of the instructor.

9.5 Final Examinations Policy

All final exams are to be scheduled in accordance with the University's final examination policy.

9.6 Canvas

This course will use USF's learning management system (LMS), Canvas. If you need help learning how to perform various tasks related to this course or other courses being offered in Canvas, please view the following videos or consult the Canvas help guides. You may also contact USF's IT department at (813) 974-1222 or help@usf.edu.

9.7 Laptop Usage

You ARE encouraged to bring your laptop to class. We will frequently practice writing programs during class time.

9.8 Professionalism Policy

Per university policy and classroom etiquette; mobile phones, iPods, etc. must be silenced during all classroom and lab lectures. Those not heeding this rule will be asked to leave the classroom immediately so as to not disrupt the learning environment. **Please arrive on time** for all class meetings. Students who habitually disturb the class by talking, arriving late, etc., and have been warned may suffer a reduction in their final class grade.

9.9 End of Semester Student Evaluations

All classes at USF make use of an online system for students to provide feedback to the University regarding the course. These surveys will be made available at the end of the semester, and the University will notify you by email when the response window opens. Your participation is highly encouraged and valued.