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, Microsoft Teams

Instructor: Tempestt Neal
Instructor's Office: ENB 310
Office Hours: Tues 11A-12:30P, Wed 1P-2:30P, Microsoft Teams
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Teaching Assistant: Mohamed Ebraheem
Office Hours: Monday 2-3:30 and Thursday 1-2:30, Microsoft Teams
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1   Recording Lectures

In this class, software will be used to record live class lectures and discussions. As a student in this class, your participation in live class discussions will be recorded. These recordings will be made available only to students enrolled in the class, to assist those who cannot attend the live session or to serve as a resource for those who would like to review content that was presented. Students who prefer to participate via audio only will be allowed to disable their video camera so only audio will be captured. Please discuss this option with your instructor.

2   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.

3   Course Prerequisites

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

4   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.

5   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`

6 Grading Policy

There will be three grading categories weighted as follows:

- Exams: 30%

    - Exam 1 (15%, 2/12/20)
    - Exam 2 (15%, 3/11/20)

- Weekly Labs: 25%

- Flex Project: 45%

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.

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

7 Attendance Policy

All instruction and correspondences will be via Canvas and Microsoft Teams. Participation is **required** in all online assignments, discussions, and meetings.

8 Course Schedule

(Subject to Change)

Week	Textbook Coverage	Topics
(1) 1/13	Chapters 1-2	Introduction, Setting up an IDE
(2) 1/20 (**No class 1/20**)	Chapters 3-4, 6	Making Decisions, Loops, Data types, Dynamic Typing
(3) 1/27	Chapters 5, 7-8	I/O Streams and Files, Functions, and Debugging
(4) 2/3	Chapter 9	Structures and Enumerations
(5) 2/10	Chapter 10	STL Containers and Iterators, **_Exam 1_** (**Weeks 1-4**)
(6) 2/17	Chapters 11-13	Algorithms, Arrays, C Strings, and Exceptions
(7) 2/24	Chapter 14	OOP: Classes, Encapsulation, UML (**Release Project**)
(8) 3/2	Chapter 15	OOP: Inheritance and Polymorphism
(9) 3/9	Chapter 16	OOP: Static Members and Functions, Overloading **_Exam 2_** (**Weeks 1-8**)
(10) 3/16	-	**Spring Break**
(11) 3/23	Handouts	OOP Review, MVC Design Pattern
(12) 3/30	Chapter 17	Pointers and Memory
(13) 4/6	Chapter 18	Templates
(14) 4/13	-	Functional and Reactive Programming
(15) 4/20	-	Flex Project
(16) 4/27	-	Event-Based Programming
5/4	-	Project Demos, 5/4/20 10A-12P Microsoft Teams

9 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

10 Course Policies

10.1 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.

10.2 Extra Credit Policy

Extra credit is not guaranteed.

10.3 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.

10.4   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.

10.5   Final Examinations Policy

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

10.6   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.

10.7   Professionalism Policy

Per university policy and classroom etiquette; mobile phones, iPods, etc. must be silenced during all lectures. **Please log-in on time** for all class meetings. Students who habitually disturb the class by talking, logging in late, etc., and have been warned may suffer a reduction in their final class grade.

10.8   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.