UNIVERSITY of SOUTH FLORIDA

COP 2513: IT OBJECT ORIENTED PROGRAMMING

Section 2 – CRN 22072 – 3 Credits – Spring 2021

Prof. Giovanni Luca Ciampaglia

COURSE SYLLABUS

College of Engineering, Department of Computer Science & Engineering.

CLASSES: Tuesdays and Thursdays 9:30–10:45 am, online on Blackboard Collaborate Ultra.

EMAIL: glc3@mail.usf.edu

OFFICE HOURS: Mondays and Wednesdays 12:00–1:30 pm or by appointment (doodle.com/mm/giovannilucaci-ampaglia414/book-a-time) on Blackboard Collaborate Ultra.

TEACHING ASSISTANTS (check Piazza for TA office hours):

- Akash Singh <akashsingh@usf.edu>
- Anis Elebiary <anis@usf.edu>

FIRST DAY ATTENDANCE: Attend class on 1st day & complete the "FDA Quiz" on Canvas by Fri, Jan. 15 at 10am.

NOTE: If you get less than perfect score in the quiz you will be dropped from the class. You have 3 attempts.

I. Welcome!

Today, software is ubiquitous, and nearly all computing jobs require some training in programming. In this course, you will be introduced to a widely popular approach to programming called objected-oriented programming, which stresses on the importance of fundamental software engineering principles such as abstraction, data encapsulation, and robust design.

II. Course Prerequisites

COP 2512 Programming Fundamentals for IT, or equivalent.

III. Required Textbook

zyBook (ISBN: 978-1-394-06995-8). The cost of a subscription is $77. This textbook is required.

How to obtain the textbook:

1. Sign in or create an account at learn.zybooks.com,
2. Enter zyBook code: `USFCOP2513CiampagliaSpring2021`

For any technical help, please contact support@zybooks.com or see the FAQ at bit.ly/zybook21.

IV. Canvas

We will use Canvas (usflearn.instructure.com/courses/1511496) to keep track of grades and for quizzes.

V. Piazza

We will use Piazza for any official announcement and online discussion; any information discussed on Piazza will be assumed to be known to students.

- Sign up here: piazza.com/usf/spring2021/cop2513; or through Canvas;
- Do not e-mail course staff about programming problems; use public discussion board instead;
- Use public posts on Piazza to discuss programming topics related to the course;
- Do NOT share code on Piazza: this is a breach of academic integrity;
- Email staff only for logistical issues (extension tokens, etc.).

VI. Course Purpose

The purpose of this course is to give an introduction to the Object Oriented programming. The programming language of the course, Java, is one of the most popular object-oriented languages, and is used in many popular applications such as the Android operative system, the Apache Hadoop platform, and Minecraft. In both the IT and Cybersecurity curricula, this course is a gateway for Advanced Program Design for IT (COP 3515). This course is a core class.

VII. University Course Description

An introduction to object oriented programming emphasizing an objects first approach with applications to IT. Objects, methods, and classes are studied in detail. Students design and implement object-oriented programs to solve IT problems.

VIII. Course Schedule (Tentative)

Note Re = Reading due, HW = Homework due, Qz = In-class quiz/CA due (see below for due dates).

Wk	Class	Topic	Class	Topic	Re. (T)	Re. (R)	HW	Qz	Notes
1	Tue, Jan 12	Intro to OOP, zyLab training	Thu, Jan 14	Java Review (loops, branches, arrays)	☐	☐	☐	☐	FDA Quiz due (Fri 10 AM)
2	Tue, Jan 19	Constructing objects, Strings	Thu, Jan 21	Using and Defining Classes, Unit Test in the zyLab	☑	☑	☑	☑	
3	Tue, Jan 26	Methods	Thu, Jan 28	Method Overloading, Scope of a Variable	☑	☑	☑	☑	
4	Tue, Feb 2	Mutators & Accessors	Thu, Feb 4	Constructors & Constructor Overloading	☑	☑	☑	☑	
5	Tue, Feb 9	Objects & References	Thu, Feb 11	Wrapper Classes & Reference Types	☑	☑	☑	☑	
6	Tue, Feb 16	Static Fields & Methods, Review	Thu, Feb 18	Exam 1 (Objects & Classes)	☑	☐	☑	☐	
7	Tue, Feb 23	Derived Classes	Thu, Feb 25	Method Overriding & Inheritance	☑	☑	☑	☑	
8	Tue, Mar 2	Polymorphism & the Object class	Thu, Mar 4	Abstract Classes	☑	☑	☑	☑	Midterm grade out March 5
9	Tue, Mar 9	Relationships	Thu, Mar 11	Interfaces	☑	☑	☑	☑	
10	Tue, Mar 16	Input & Output	Thu, Mar 18	File I/O	☑	☑	☑	☑	
11	Tue, Mar 23	Review	Thu, Mar 25	Exam 2 (Inheritance & Polymorphism)	☑	☐	☑	☐	
12	Tue, Mar 30	Exceptions	Thu, Apr 1	Memory Management	☑	☑	☑	☑	
13	Tue, Apr 6	Recursion	Thu, Apr 8	Stack Overflow	☑	☑	☑	☑	
	Tue, Apr 13		Thu, Apr 15		☐	☐	☐	☐	Spring Break
14	Tue, Apr 20	Abstract Data Types, ArrayList	Thu, Apr 22	Generics	☑	☑	☑	☑	
15	Tue, Apr 27	Collections	Thu, Apr 29	Collections	☑	☑	☑	☑	Test-free Week
16		Thu, May 6, 7:30 AM		Final Exam	☐	☐	☐	☐	No classes

IX. Tips for How to Succeed in this Course

To be successful in this course you should complete all readings and tasks BEFORE coming to class. In class, we will use those concepts to solve problems, and test your understanding of the materials using challenge problems and quizzes.

X. Course Topics & Student Learning Outcomes

By the end of this course, you will be able to:

1. Describe the concepts of encapsulation, abstraction, inheritance and polymorphism;
2. Describe the relationship between an object and its corresponding class;
3. Write, test, and debug programs in an object-oriented programming language;
4. Describe how the mechanism of a class supports encapsulation and data hiding;
5. Compare and contrast the concept of method overloading in an object oriented language;
6. Design, implement and test the “is-a” relationship among objects using class hierarchy and inheritance.

XI. Student Evaluation

The final grade of the course will be based on the following assessments:

Assessment	Weight
Reading Assignments	15%
In-class Quizzes	5%
Homework Assignments	25%
Exam 1	15%
Exam 2	15%
Final Exam	25%

Reading Assignments – 15%

Due Date: Every Tuesday and Thursday at 9:30 a.m. before class.
Readings are meant to give you a chance to prepare for each lecture. They include short, interactive puzzles called Participation Activity (PAs), which are meant to check your understanding of the materials. Readings are not graded; you earn points based on the PAs you complete successfully.

Homework Assignments – 25%

Due Date: Every Wednesday at 12:00 p.m. (noon).
Homework assignments are small coding problems meant to hone your coding skills and apply the concepts covered in class. To complete each problem your solution must pass a number of autograding tests. If you complete at least 70% of all the points in the assignment you will receive full grade on the homework.

In-class Quizzes / CAs – 5%

Due Date: Every Friday at 12:00 p.m. (noon).
A number of graded quizzes and coding puzzles (Challenge Activities, CA) will take place in class during the semester corresponding to 5% of the final grade. These are meant to test your understanding of the lecture materials. If you cannot attend class on Thursday the code to access the quiz will be posted on Piazza.

Exams – 15% (total 30%)

Two partial exams (Exam 1 & Exam 2) will take place during the semester. Each exam is worth 15% of the final grade. The exams include a quiz and a set of small coding problems.

Final Exam – 25%

A final comprehensive exam will take place during final’s week corresponding to 25% of the final grade. The exams include a quiz and a set of small coding problems.

XII. 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

XIII. Covid-19 Procedures

All students must comply with university policies and posted signs regarding COVID-19 mitigation measures, including wearing face coverings and maintaining social distancing during in-person classes. Failure to do so may result in dismissal from class, referral to the Office of Student Conduct and Ethical Development, and possible removal from campus. Additional details are available on the University's Core Syllabus Policy Statements page: https://www.usf.edu/provost/faculty/core-syllabus-policy-statements.aspx

XIV. Grading Policies

Grading Scale: No curving will be applied to any grade. Final grades will be on the scale below.

N/A*	A+
94–100	A
90–93	A−
87–89	B+
84–86	B
80–83	B−
77–79	C+
74–76	C
70–73	C−
67–69	D+
64–66	D
60–63	D−
0–59	F

* A+'s are only awarded in exceptional circumstances where students have gone above and beyond expectation. Points alone do not establish the grade of A+.

Final Grades: There is no final rounding up nor bonus points: a grade of 89.99 is 89, not 90.

Reading Grades: PAs completed after the due date will count zero (0) points for the final readings grade. Reading due dates cannot be extended; you cannot make up for a missed reading after the due date.

Homework Grades: Assigments completed late will be assessed a penalty of 20% for each day past the due date.

Extension Tokens: At the beginning of the semester each student has six (6) extension tokens, each equivalent to a 24h extension on the due date of a homework assignment. To use a token, please contact one of the TAs. No reasons need to be provided. Tokens can be only used on homework assignments and quizzes, but not on readings.

Exam Grades: The 2 partial exams and the final comprehensive exam are all mandatory and will take place during regular class hours. If you miss an exam, independent of reason, you will get an automatic 'F' for that particular exam. No make-up exams are offered for the class.

In-class Quiz Grades: Quizzes are taken online at a specific time and no make-up quizzes are offered for the class. Any missed quizzes will count zero (0) points for the final quizzes grade.

No Extra Credit Policy: There are no extra credit activities for this class.

XV. Additional Policies

Email / Piazza: Questions by email or on Piazza will be responded usually in 24 hours during weekdays. If you write us during the weekend or a holiday, we may take longer to get back to you.

Class Recordings: 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.

XVI. Attendance Policy

Regular class attendance is not required. However, you must attend class on the first day and must be present in class during all exams.

XVII. Academic Integrity

The principles of academic honesty and professional ethics will be *vigorously enforced* in this course, following the USF System Regulation on Academic Integrity of Students (https://www.usf.edu/ethics/policies/).

This includes the usual standards on *acknowledgment* of help, contributions and joint work. *Any code or other assignment you turn in for grading and credit must be your individual work.* If we have group projects with different rules, they will be clearly announced. Even if you work with a study group (which is encouraged), *the work you turn in must be exclusively your own. If you turn in work done together with, or with the assistance of, anyone else other than the instructors, this is an instance of cheating*.

Several commercial services have approached students regarding selling class notes/study guides to their classmates. Please be advised that selling a faculty member's notes/study guides individually or on behalf of one of these services using USF email or Canvas violates both USF information technology and USF intellectual property policy. Selling notes/study guides to fellow students in this course is not permitted. Violations of this policy will be considered violations of the USF System Regulation on Academic Integrity of Students (https://www.usf.edu/ethics/policies/) and will be reported to the Dean of Students as a violation of course rules (academic misconduct).

Cases of academic misconduct (including cheating, fabrication, plagiarism, interference, or facilitating academic dishonesty) will be reported to the Dean of Students. *The typical consequence will be an automatic F grade in the course*.

Your submission of work to be graded in this class implies acknowledgement of this policy. If you need clarification or have any questions, please see the instructor during office hours.

XVIII. Important Dates to Remember

Event	Date
Drop/Add Deadline	Friday, January 15, 2021
Exam 1*	Thursday, February 18, 2021
Last Day to Withdraw	Saturday, March 27, 2021
Exam 2*	Thursday, March 25, 2021
Spring Break Starts	Monday, April 12, 2021
Spring Break Ends	Sunday, April 18, 2021
Final Exam*	Thursday, May 6, 2021

* These dates and assignments are tentative, and can be changed at the discretion of the professor.