UNIVERSITY of SOUTH FLORIDA

UPDATED VERSION

OBJECT ORIENTED PROGRAMMING FOR IT

COP 2513 (3 Credits) – Spring 2020

Prof. Giovanni Luca Ciampaglia

COURSE SYLLABUS

College of Engineering, Department of Computer Science & Engineering.

CLASSES: Tuesdays and Thursdays 9:30–10:45 am, SOC 151.

EMAIL: glc3@mail.usf.edu

OFFICE HOURS: Mondays and Wednesdays 10:30–12:00 or by appointment (bit.ly/meetglc), ENB 318.

TEACHING ASSISTANTS (check Piazza for TA office hours):

- Ahmed Abd-Elrahman <aabdelrahman@mail.usf.edu>
- Ahmed Shahabaz <shahabaz@mail.usf.edu>
- Md Taufeeq Uddin <mdtaufeeq@mail.usf.edu>

FIRST DAY ATTENDANCE: Attend class on 1st day & complete the "FDA Quiz" on Canvas by Fri, Jan. 17 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 computing jobs are often ranked among the best jobs, in terms of opportunity, salary, work-life balance, job security, job satisfaction, work conditions, etc. 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. Learning how to write correct computer code promotes computational thinking, a unique analytical approach to solving problems that is at the heart of what IT professionals do.

II. Course Prerequisites

COP 2512 Programming Fundamentals for IT, or equivalent.

III. Required Textbook

"Java Early Objects with zyLabs", zyBook. 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: `USFCOP2513CiampagliaSpring2020`

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

IV. Canvas

We will use Canvas (usflearn.instructure.com/courses/1375318) 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/spring2020/cop2513spring20; 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 Java programming language. 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)

Week	Dates		Topic
1	1/14	1/16	Introduction to Java
2	1/21	1/23	Basic Objects
3	1/28	1/30	Data Types
4	2/4	2/6	Branches
5	2/11	2/13	Loops
6	2/18	2/20	Arrays; MIDTERM EXAM 1: Thursday, Feb 20
7	2/25	2/27	Basic Methods + Classes
8	3/3	3/5	Methods Continued
9	3/10	3/12	Classes Continued
	3/17	3/19	Spring Break
10	3/24	3/26	Inheritance
11	3/31	4/2	Input / Output; ~~MIDTERM EXAM 2: Thursday, April 2~~
12	4/7	4/9	Exceptions; MIDTERM EXAM 2: Tuesday, April 7
13	4/14	4/16	Recursion
14	4/21	4/23	Memory Management
15	4/28	4/30	RECITATION: Tuesday, April 28; READING DAY: Thursday, April 30
16	5/7		FINAL EXAM: Thursday, May 7, 7:30 am – 9:30 am SOC 151

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	10%
In-class Quizzes	5%
Homework Assignments	10%
Midterm Exam 1	25%
Midterm Exam 2	25%
Final Exam	25%

We will use the required ZyBook textbook to carry out most assessments. You will need to acquire the textbook (see Required Textbook above) and have access to the internet to use it. There are different kinds of activities that you will take through the ZyBook:

- Participation Activity, or PA (marked by an orange badge);
- Challenge Activity, or CA (marked by a blue badge); and

- Lab Activity, or LAB (marked by a green badge).

Reading Assignments (PAs) – 10%
Due Date: Every Tuesday and Thursday at 9:30 a.m. before class.
Readings are meant to provide you with a chance to prepare for each lecture. They cover the topics discussed in class. They include Participation Activities (PAs), which are short, interactive quizzes meant to check your understanding of the materials. Readings are not graded; you earn points based on the rate of completion of the PAs.

Homework Assignments (CAs & LABs) – 10%
Due Date: Every Monday at 11:59 p.m.
Homework assignments are small tasks meant to provide you with a chance to consolidate what you learned during the past week and grow your programming skills. They will include a mix of Challenge Activities (CAs) and Programming ZyLabs (LABs). CAs are both coding challenges and algorithmically generated puzzles (also called "progressions"). LABs are small coding projects that require you to implement a program that passes certain tests. CAs and LABs are auto-graded to provide immediate feedback.

In-class Quizzes – 5%
A number of graded quizzes will take place in class during the semester corresponding to 5% of the final grade. These are meant to test immediately your understanding of the lecture materials. You will need to bring a laptop to class in order to take the quiz. The quizzes stay up on Canvas for 24h.

Midterm Exams – 25%
Two partial exams (Midterm Exam 1 & Midterm Exam 2) will take place during the semester. Each exam is worth 25% of the final grade. ~~Students are required to be on campus during both midterms.~~

Final Exam – 25%
A comprehensive final exam will take place during final's week corresponding to 25% of the final grade. ~~Students are required to be on campus during final exam.~~

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. Grading Policies

Grading Scale: No curves will be applied to either numerical or letter grades. 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: Points will not be added at the end of the semester, and there is no final rounding up: a grade of 89.99 is 89, not 90. There will be no reply to any email requesting such changes.

Reading Grades: The grade on the readings is equal to the rate of completion of PAs on ZyBook. PAs completed after the due date will count as '0' toward the final readings grade. There is no make-up for readings; no extensions will be granted on the due dates of readings.

Homework Grades: The grade on the homework is equal to the amount of points obtained in the CAs and LABs on ZyBook. CAs and LABs completed late will be assessed a penalty of 20% for each day past the due date (in blocks of 24 hours: 1 minute late = 1 day late). CAs and LABs completed one week after the due date will count as '0' toward the final homework grade.

Extension Tokens: At the beginning of the semester each student has four (4) extension tokens each equivalent to a 72h 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.

Exam Grades: ~~If you miss an exam you will get an automatic 'F' for the class.~~ No make-up exams are offered for the 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 as a '0' towards the final quizzes grade.

No Extra Credit Policy: There are no extra credit assignments/quizzes for this class.

XIV. Additional Policies

Email: Questions by email will be responded usually in 24 hours during weekdays.

Laptop Usage: A computer with internet connection is required to access the textbook materials and to carry out other in-class activities.

Classroom Devices/Student Recording: Recording of classes is NOT allowed.

XV. Student Expectations

Attendance Policy: Regular class attendance is not required, with two exceptions: 1) First day attendance is mandatory; ~~2) You must attend all exams in person.~~

Professionalism Policy: Per university policy and classroom etiquette, noise-making devices (phones, laptops, etc.) must be silenced during classroom lectures and tests. Those not heeding this rule may be asked to leave the classroom. 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.

Food and Drink Policy: Please adhere to the firm policy of no beverages (other than bottled/capped water), food, tobacco products, or like items in the classroom. Your understanding of the necessity for this policy and cooperation will be greatly appreciated. This policy will be strictly enforced.

XVI. Important Dates to Remember

Event	Date
Drop/Add Deadline	Friday, January 17, 2020
Midterm Exam 1*	Thursday, February 20, 2020
Withdrawal Deadline	Saturday, March 28, 2020
Midterm Exam 2*	Tuesday, April 7, 2020
Spring Break Starts	Monday, March 16, 2020
Spring Break Ends	Sunday, March 22, 2020
Final Exam*	Thursday, May 7, 2020

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