

COMP 2150 CS2: Object-Oriented Programming and Data Structures using Python– Fall 2022
Dr. James Yu

Contact Information:

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TA/GA: TBD	

The best way to contact me is through email – I usually respond within 24 hours.

Office Hours:

I am usually around in the morning (M, Tu, Thr, F) (9:30 to 11:30) . You can drop by any time. My classes are in the afternoons (M – Thr). It is best to email me to set up an appointment (zoom or in-person) in advance.

Lecture Meeting Times/Locations:

827738 - COMP 2150 – 001 MW 5:30 pm to 7:30 pm Dunn Hall 124

Catalog Description:

COMP 2150 – (CS 2): Object-Oriented Programming and Data Structures: Principles of object-oriented programming and software development; problem-solving with recursion and abstract data types, including linked lists, stacks, queues, binary search trees, hash tables; basic GUIs. Prerequisite: MATH 1910 or MATH 1421 (or MATH 1830 for COMP minors) and COMP 1900, and co-requisite Comp 2700.

Student Learning Outcomes (ABET):

This course focuses on the following ABET student outcomes and performance indicators:

- (1) An ability to analyze a problem, identify and define the computing requirements appropriate to its solution.
(Performance indicator: Demonstrate an ability to break down a problem into smaller components.)
- (2) An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computer-based systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.
(Performance indicator: Demonstrate an ability to evaluate the benefits and tradeoffs of different data structures.)

Course Website:

You can find the course materials (lecture notes, assignments, codes written during lecture, sample codes, grades, etc.) at the University of Memphis LMS (Canvas) at [Dashboard \(instructure.com\)](https://memphis.instructure.com) <https://memphis.instructure.com>

Required Text:

- Zybooks: Object-Oriented programming and the Essentials of Data Structures.
 - Sign in or create an account at up @ <http://www.zybooks.com>
 - Enter zyBook code **MEMPHISCOMP2150YuFall2022**
 - Click Subscribe (**you must register using your Memphis.edu email address**)

You will need this book for the in-class exercises and zyBooks assignments

Evaluation:

Items	Points
Homework Assignments (HW)	200
zyBooks-Exercises (ZB)	100
In-Class exercises (IC)	200
Quizzes (3) (@100 each)	300
Final	200
Total	1000

Some of the zyBook exercises consist of in-class and take-home portions. You must submit the in-class portion to get the assignment's total (in-class + take-home) grade. Missing the in-class part will result in a zero for that zyBook exercise assignment.

Grading Scale: Letter grades will be determined as follows:

A	B	C	D	F
100 -> 89	88 -> 76	75 -> 65	64 -> 60	59 -> 0
A+ ≥ 97%	B+ 85–88%	C+ 71–75%	D+ 62–64%	F ≤ 59%
A 92–96%	B 80–84%	C 67–70 %	D 60–62%	
A– 89 –91%	B– 76–79%	C– 65 –67 %		

Final Exam: based on: [Fall 2022 Final Exams - Registrar - The University of Memphis](#)

W, Dec 7, 5:30 – 7:30 pm at DH 124 (same as the lecture room)

Assignments:

You will improve and enhance your programming skills by practicing frequently and regularly. Throughout the semester, you will have various assignments to reinforce the concepts discussed in the lecture and provide you with hands-on coding practices. This class does not have an assigned laboratory section. Instead, you will have lab-style exercises (in-class and zyBooks) during the lectures to practice your understanding. You will not do well in this course unless you work on assignments persistently.

The assignments fall into three categories: inClass : (200 pts), ZyBooks (ZB) Exercises (100 pts), Homework Assignments (HW) (200 pts)

1. inClass (200 pts) consists of (in-class, code-along) exercises to reinforce the current topic discussed immediately. Attendance is also indirectly taken through canvas submission. There is absolutely no makeup for the inClass coding exercise.
2. ZyBooks (ZB) exercises (100 pts) are from the required zyBook textbook. Please check your course LMS (Canvas) regularly for the posting and due dates details
3. Homework (HW) Assignments (200 pts): HW assignments will allow you to explore the topic more deeply and in-class exercises. Please check your course LMS (Canvas) regularly for the posting and due dates details

You must regularly check the course LMS (Canvas) site (<https://memphis.instructure.com/>) for all the assignment posting and due dates. Unfortunately, there is no makeup for the missing assignments.

For the **Honors component** of the course (section 350), in addition to the basic data structures and OO programming assignments (001/002) in Python, honors students work on a project individually or as a pair. The project focuses on data structures and OOP in Python or using Python in the introduction level of (numeric processing)NumPy, (Visualization)Matplotlib, GUI with Tkinter. The project will be posted before spring break in early September, with a due date of one week before the last day of class (Nov 30,2022)

Attendance/participation: (part of in-Class and zyBooks exercises)

It is essential to attend the classes regularly. The course will keep building on itself and move pretty quickly. Therefore, it would be best to get a good handle on each concept after discussing it. Frequently, you will need to submit in-class work, and I will also use that for attendance.

You must bring your laptop with the assigned [zyBook textbook](#) for this course. Some in-class exercises may be from the zyBooks chapters. If you miss the lecture and cannot submit the in-class portion, you will receive no marks for the assigned zyBooks exercise. There is absolutely NO Extension for the missing (in-class or take-home portion) zyBooks assignments

Email:

Please check your [University of Memphis](#) (@memphis.edu) email regularly (daily), as that is my primary means of communicating with you outside of class.

Late/Makeup Policy:

All assignments (including zyBooks, and in-class exercises) are expected to be completed and turned in on schedule. Each assignment will have specified due dates. Your TA/GA will not accept late assignments except in extreme circumstances. Likewise, you can have makeup quizzes and exams only under extreme circumstances. If circumstances warrant a late work submission or a makeup quiz/exam, get in touch with me with documented proof of your situation no more than one week from the due date.

Collaboration and Plagiarism/Cheating Policy:

An essential part of learning how to program is getting plenty of practice with it yourself. I also encourage you to work collaboratively and learn from each other. You are allowed to have similar designs and codes. You have to comment at your program heading with "// collaborated with (list of the name), and which parts of the program are your main contributions." If I (or TA) determine that you have copied something directly from a book, the Internet, or some other source, you will receive a failing grade on the assignment and (at my discretion) a failing grade in the course. If we determine that you have copied work from another student directly without any comment on your contribution, you will receive a failing grade, which will happen to both you and the person you copied. The Office of Student Conduct will also receive a copy of the incident for further disciplinary action. Please don't put me in this situation.

[Important: Fall 2022 Dates and Deadlines - Registrar - The University of Memphis](#)

Getting Help:

Although I expect your work for this class to be done individually or collaboratively with conditions (see above), I encourage you to seek help as soon as possible if you get stuck: (this key is to start working on your assignment within 24 hours from the posted date)

- Talk to me! I'm very willing to sit down and provide hints without giving away the solution.
- Contact your course TA/GA.
- Online help: I generally have an open zoom open line on Sat 9:30 to 12noon. Please come prepared with specific questions.

Student Disabilities:

If you require disability-related accommodations to meet the course objectives, please contact the Coordinator of Disability Resources located in the Student Development and Advising area of the student services building. For more information about Disability Resources or academic Accommodation, please visit the website at:

<http://www.memphis.edu/drs/>

Tentative Course Schedule : (Subject to change)

Date	Topics	Text	Quizzes	Assignments (HW)
22-Aug	Reviews, pyCharm IDE			
24-Aug	Data types	2, 3		
29-Aug	Reviews (controls)			
31-Aug	Branch, Loops, Functions	4, 5, 6		HW1 (Data types)
5-Sep	Labor day / No Class			
7-Sep	Review (String, Class, objects)	7, 8, 9		
12-Sep	Exception	10		
14-Sep			Q1: (09/12)	
19-Sep	Packages / Modules	11		HW2 (controls, loops, except)
21-Sep				
26-Sep	Files I/O	12		
28-Sep				
3-Oct	Data structure, Algo Analysis	31, 32		HW3 (Modules, File I/O)
5-Oct				
10-Oct	Fall Break/No Class			
12-Oct	Algo analysis, sort, search	32, 33	Q2: (10/12)	
17-Oct	Stack, Queue	34		HW4 (DStruct, Algo, sort, srt)
19-Oct				
24-Oct	Stack Queue, Hashing	34, 35		
26-Oct				
31-Oct	Hashing, Tree	35, 36		HW5 (Stack, Queue)
2-Nov				
7-Nov	BST	36		
9-Nov			Q3: (11/09)	
14-Nov	OOP	13 + Notes		HW6 (Hashing, Tree, BST)
16-Nov				
21-Nov	OOP	13 + Notes		
23-Nov	Thanksgiving / No Class			
28-Nov	OOP Reviews	Notes		HW7 (OOP)
30-Nov	Last day of class			

The quiz dates are subject to change. Each quiz is approximately 45 to 60 minutes. Plan to attend the entire lecture on the quiz day. If you miss a quiz, there is absolutely no retake.

Tentative Quiz and Exam Topics:

- Quiz1: review of (comp 1900) python basics, Data type, Branch, loops, functions,
- Quiz2: File I/O, modules/packages, Data Struct, Algo analysis (Big O factor)
- Quiz3: sorting, List Stack, Queue, and hashing.
- Final Exam: "all of the above."