Welcome!

CS 170Q Introduction to Computer Science I

Instructor: Ting Li

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Staff: Dr. Ting Li will work with you for this semester. You may reach me via Canvas, by email at tli41@emory.edu . You are also welcomed to visit during our office hours (10am–11am on Tuesday and Thursday, 10am – 12:30pm Wednesday via Zoom, or by appointment).

Class Information:

Section 2: lecture TTh 8:30am – 9:45am, lab F 8:30am – 9:20am

Section 6: lecture TTh 1pm – 2:15pm, lab F 1pm – 1:50pm

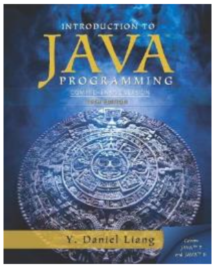
Location: Pierce Hall 104

zyBooks My library

Active class zyBooks

CS 170: Introduction to Computer Science I

Ting Li
SPRING 2023



INTRODUCTION TO JAVA PROGRAMMING

Y. Daniel Liang

Textbook: The **required** textbook for this class is: zyBook's Programming In Java. This book is only available as an e-book. To access it please follow the following steps: 1) Sign in or create an account at learn.zybooks.com. 2) Enter zyBook code **EMORYCS170LiSpring2023. 3)** Click Subscribe. The subscription price is $77. Contact support@zyBooks.com for help or with any questions regarding obtaining a subscription. If you drop the class in the first two weeks, you can contact support@zyBooks.com to get a full refund. Other useful resources are Java courses on Oxford Math&CS department websites and Daniel Liang's book: *Introduction to Java Programming.*

Other required materials: You will need access to a computer for reading (online books), coding (IntelliJ IDE recommended) and other activities(taking quizzes etc.). Last but not least, having a flash drive to regularly backup your work is also highly recommended.

Overview: This is an introduction to Computer Science for students expecting to utilize serious computing in coursework, research, or employment. Emphasis is on computing concepts, programming principles, algorithm development and basic data structures, using the Java programming language.

Prerequisites: There are no official prerequisites. Knowledge of high school algebra and basic problem solving skills are enough for this course. This course is a prerequisite course for CS 171.

Course objectives: Students at the conclusion of this course should be able to...

- Know the basic components of computer and computer language history
- Effectively use primitive data types and common pre-made objects in the Java language
- Effectively use program-flow-control concepts (i.e., "for"-loops, "while"-loops, "if"-statements, etc.)
- Effectively use arrays for storing and manipulating a large amount of data
- Understand and utilize the basic sort and search algorithm, and recursion idea
- Build classes and objects of their own design
- Effectively use subclasses and interfaces to facilitate Object-oriented design
- Know the common errors and effectively use debugger for finding and correcting the bugs in code.

Before classes: You should **finish the reading assignment (in online books)** before come to the class since we will use class time for finishing the problem sets and Q&A. You are welcomed to watch 2~3 videos posted (under that lecture page) on Canvas for each class.

Attending Classes: Class time will be used for Q&A (questions from books, slides and quizzes), in-class activities with problem sets and exams. The problem set contains fundamental questions and coding practice questions. That class will start with a 10-15 minutes review and for the next 40-50 minutes, you will work on the problem set. You can search for help from your classmates, our CS tutors or me while finishing it. Then you need to get feedback from your classmates on your answers and share your opinion on others work too. At the end of the class, you should turn the problem sets to Dr. Li for credits and it will return to you on every Friday's lab. Note that discussing with your classmates while working on the problem sets (especially coding) in class is encouraged.

Assignment: There are two different types assignments: lab assignment and weekly assignment. Students should work on **lab assignment** (~3 questions) during Friday's lab hours and submit it before **Friday midnight**. Each students is required to review 2 students' lab submission to give feedbacks. The **weekly assignment** will publish each Thursday and due **next Wednesday midnight**. For those assignment, you need to submit **.java** files to Canvas and you can submit multiple files for more than once if you need to update your **answer**. Remember your code should be suitable for all the test cases. If your code could only give the output for the limited input/test cases, you will receive partial credits.

Students are expected to perform their work **individually**. Plagiarism will be not tolerated. Students may discuss assignments in general terms with other students and may receive assistance from the instructor or classmates. Assistance does not mean obtaining working designs or solutions and modifying them; this is considered copying.

Exams: You will have **3 midterm exams** and **a final exam** this semester. The tests will emphasize reading, understanding, and debugging code -- more than writing code (students' capability in doing the latter is primarily measured through their performance on the labs). That said, some questions on the tests might also require students to write code. Doing well on these exams will strongly correlate to having read and understood the readings online and other reference material provided, and having worked in earnest -- and successfully -- on the programs assigned up to that point in the class. All the exams are **closed** book and notes, and calculators are not allowed.

Late Submission Policy: Student will get 70% of the grade if student finish assignment overdue **less than three days**. Missed or late submission(>3 days) will receive a grade of zero. Note there is **no make-up exams.** However, you have a valid reason for a makeup exam or extension, inform me as soon as possible. Valid reasons include medical emergency, a death in the family, or religious observations.

Extra Credit Opportunities: Most weekly assignments have extra credit questions. Stay tuned.

Course website: Everything will be uploaded to **Canvas** sites, including announcement, assignments, slides, codes, videos and exams. Students are expected to check course Canvas webpage and outlook email daily. You can also see the weekly-based tentative schedule **on Canvas Module.**

Grading: Students' grade will be calculated as the graph showing. We will have **3 exams** (**10%** for each), which counts for 30% of your grade. The **reading** before the class counts for **5%** and the **problem sets** in class counts for **10%.** There are ~**10 lab practices and ~10 assignments**, which counts for **10%** and **30%** of your grade, respectively. The remaining is **15%** for **final exam**. I expect you to work hard. However, if you cannot finish things, please let me know; I will work with you to catch up, and to pass the course.

Letter grades will be assigned from your overall numerical grade according to the following:

93 ≤ A	87 ≤ B+ < 90	77 ≤ C+ < 80	67 ≤ D+ < 70
90 ≤ A- < 93	83 ≤ B < 87	73 ≤ C < 77	60 ≤ D < 67
	80 ≤ B- < 83	70 ≤ C- < 73	F < 60

Honor code policy: All work done in this class is governed by the Oxford College Honor Code. Students may not give, access, or receive any information not expressly permitted by the instructor on tests or exams. Collaboration between students on tests and weekly assignment is strictly prohibited. The Computer Science Dept. has a specific policy regarding the submission of computer code. http://www.mathcs.emory.edu/spca.php

Success Advice: Don't procrastinate! It is very hard to predict how much time you need to finish a program, even a very simple one. Sometimes what seems easy will turn out to be hard, and what seems hard will turn out to be easy. Often a program feels 99% done, with only a couple little things remaining, and that final 1% ends up taking as long as the first 99% took. You might find that you don't understand something you thought you did and need to ask questions in lab or office hours. Leave extra time. Most of the time you won't need it, but sometimes you will.

Don't get frustrated! Programming and computer science in general require thinking in ways that will be new to many of you. That's part of why this is such a valuable class to take and why it can be so much fun, but it can also make it very difficult, especially at first. Don't expect everything to work out perfectly the first time. It is entirely normal to run into obstacles along the way.

You should make it a goal to learn to write and assess code without having the computer sitting in front of you. This is a critical skill for communicating your work and ideas to other people. It also gets you into the habit of anticipating what will happen when your code runs, especially any bugs that might be lurking in that code. The quizzes and exams are designed to strengthen this practice, but you might consider, at times, sketching out your homework and programs in this way---on paper, say, away from the computer---as you go through the course.

Have fun! Learning to work with computers can be a fantastic experience. It changes mysterious objects you just take for granted into something you can understand. Whatever you want to do outside computer science, whether it's biology or art or economics, programming can help make it happen. And most importantly, it's just extremely interesting and intellectually rewarding. Don't get so lost in the details of the work that you don't enjoy the experience.

Special Accommodations: Access, Disability Services and Resources (ADSR) works with students who have disabilities to provide reasonable accommodations. In order to receive consideration for reasonable accommodations, students must contact ADSR and complete the registration process. Faculty may not provide disability accommodations until an accommodation letter has been processed; accommodations are not retroactive. Students registered with ADSR who receive a letter outlining specific academic accommodations are strongly encouraged to coordinate a meeting time with their professor to discuss a protocol to implement the accommodations as needed throughout the semester. This meeting should occur as early in the semester as possible. Contact Access, Disability Services and Resources for more information at (770) 784-4690 or adsroxford@emory.edu. Additional information is available at the ADSR website at http://equityandinclusion.emory.edu/access/students/index.html.

Religious Holidays: Instructors are encouraged, not required, to accommodate students' academic needs related to religious holidays. Please make every effort to negotiate your religious holiday needs within the first two weeks of the semester; waiting longer may com- promise your instructor's ability to extend satisfactory arrangements. If you need guidance negotiating your needs related to a religious holiday, the College Chaplain, Rev. Lyn Pace, ppace@emory.edu, is willing and available to help.

Emory's official list of religious holidays may be found at: http://www.religiouslife.emory.edu/faith traditions/holidays.html.

This syllabus is a guide for effective learning in this class; it is not a legal contract. The instructor reserves the right to modify the syllabus as needed.

Tentative schedule is on next page.

Tentative Schedule

Week	Topics	Due
1	Course introduction Chapter 1: Computer basics, The first program	Lab 1
2	Chapter 2: Assignment statement, Numeric data	HW 1, Lab 2
3	Chapter 2: The first look at class Chapter 3: String and char	HW 2 Lab 3
4	Chapter 4: Boolean branch statement	HW 3 Lab 4
5	**Review and Test 1 (Feb 9)**	HW4, No lab
6	Chapter 5: Loop statement	Lab 5
7	Chapter 6: Array	HW 5, Lab 6
8	Review and Chapter 7: methods	HW 6, Lab 7
9	Spring Break, No Class	HW7
10	Chapter 8: Recursion Chapter 9: Simple algorithms	Lab 8
11	**Review and Test 2 (Mar 23)**	
12	Chapter 10: Object	HW 8, Lab 9
13	Chapter 11: Inheritance and Polymorphism	HW9, Lab 10
14	Chapter 12: Abstract class, interface Chapter 13: debugging	HW 10
15	**Review and Test 3 (April 20)**	

*All **labs** are due on **Friday midnight**.

*All **homework** are due on **Wednesday midnight**.

*The reading assignments are due before each lecture.

* **Tentative** Final Exam time:

Section 2 (class starting at 8:30am): May 2nd 8am – 10:30am

Section 6 (class starting at 1pm): May 2nd 11:30am – 2pm

Some Other Important Dates:

Jan 24 Add/Drop/Swap Closes

Feb 14 Extended drop deadline

Feb 24 Course Withdrawal Deadline-S/U Deadline

Mar 31 Extended Withdrawal Deadline