CS 1A Syllabus

Introduction to Object Oriented Programming in Java

Hello. My name is Anand Venkataraman. I will be your instructor for this course. In this document I have laid out the various policies for our class. Please read it carefully and let me know if you have any questions.

Contents

Course Description

CS 1A is an introduction to programming using the Java language. Absolute beginners or students already familiar with other programming languages will learn how to write Java programs that cover a wide range of applications. The ability to work with computers and access to the Internet are the only prerequisites. To get the most out of this course however, you will also need both a desire to learn and a positive attitude.

A working facility with simple algebra as well as good written English comprehension skills are both strong advisories.

Weekly Time Estimate

Despite being an introductory course, many students find the material challenging if they don't allocate enough time for class work and home work. Even if you are already familiar with Java, you may find yourself needing significant time to work through assignments and implement them according to spec. Many past students who underestimated the amount of work this involved ended up with grades that they were not satisfied with.

Make sure you're not one of those students by making the right choice up front. Are you able to allocate enough time for this course or would you rather take it in a later quarter when it better fits your schedule?

Every week, you'll have one or more Zybook chapters to study and one or more lab assignments to complete. If you have some programming experience already, expect to spend about 8 hours per week reading and/or attending lectures or watching videos. You will need to spend an additional 6-10 hours working on programming labs. This is a total time commitment of about 18 hours per week. If you are completely new to programming, expect to spend around 30 hours per week until you are up to speed. Once you're reasonably comfortable with the material, you can expect to spend about 15 hours of lab-work (online) and 10 hours of instructional time (hybrid for f2f) per week on average.

Preparatory Tasks

You must complete the first required task for this course no later than the first day of the quarter. This is just a simple 3-question quiz that **does not require prior knowledge of Java.** If you don't complete this task, you will be dropped and your seat likely given to a student on the waitlist. Consider this the equivalent of showing up to the first lecture. Not doing it will be treated as a no-show to the first lecture.

Text and References

We're going to be using Zybooks. The data suggests that students enjoy a higher success rate with an interactive learning experience and guided activities as compared to traditional media.

The Zybook we'll use is CS 01A: Object-Oriented Programming Methodologies in Java. It is

mandatory reading and contains most of the labs, which you will submit directly into it.

To get started with your Zybook:

1. Sign in or create an account at learn.zybooks.com
2. Enter the following zyBook code: FOOTHILLCS01AVenkataramanWinter2019
3. Subscribe

A subscription costs $77. Students may begin subscribing the week before the quarter starts and the cutoff to subscribe is the day before the quarter ends. Subscriptions will last until the end of the quarter. I'm told they can be extended for a nominal fee.

In addition to the Zybook and Canvas Modules, there is a recommended text for the course.

It is *Introduction to Java Programming: Comprehensive Version, any Edition (7th or later), by Liang, Pearson/Prentice Hall*. However, you can use any Java textbook that fits your style and budget.

You can order the recommended text through our bookstore at http://books.foothill.edu/, phone: (650) 949-7305.

Another recommended reference that may help with style issues is The Elements of C++ Style, Misfeldt, et. al., Cambridge University Press. Although this is a C++ book, much of the stylistic guidelines described in this book apply equally well to Java and some other programming languages.

Typical Routine

One assignment is due each week, most weeks. We'll try and stick to the below activity schedule as closely as possible. But minor deviations are possible to adapt for specific requirements of your section of the course.

Assignments may be worth varying amounts of points depending on their difficulty. At the end, the grand total for all labs will be scaled to 55%.

Week	Canvas Module	Topic	Zybook Chapters	Labs	Num Labs	Due
1	0	Data Representation	-	Lab 1 (Canvas)	1	Jan 13
2	1	Vars, Exprs, Streams	1 and 2	Lab Set 2	7	Jan 20
3	2	Control Structures	3 and 4	Lab set 3	5	Jan 27
4	3	Functions, Param passing	5	Lab set 4	2	Feb 3
5	4	Arrays and Vectors	6	Lab set 5	2	Feb 10
6	5	Review/Midterm	1-6	-	0	Feb 14
7	6	Objects, Classes	7.1 - 7.9	Lab 6	1	Feb 24
8	7	Methods & Params	7.10 - 7.18	Lab 7	1	Mar 3
9	8	Memory Management	8	Lab 8	1	Mar 17
10	9	Algorithms, Sorting/Searching	11	Lab 9	1	Mar 24
11	-	Review, Git/Github	-	Final project (EC)	-	Mar 22
12	-	Final Exam	All above	-	-	Mar 28

Assessment

Your final grade will be based on programming lab assignments (Total scaled from max to 55%), pop quizzes (scaled to 15%), participation (scaled to 5%) and exams (scaled to 25%).

The assessment has been designed to test both conceptual understanding and knowledge of language features. The labs emphasize the latter and the exams emphasize the former. The idea is that you should be able to get a passing grade by doing well in the labs, but in order to get into A-grade territory, you have to demonstrate a solid grasp of the concepts. An A+ is possible if you truly enjoy programming, program in your spare time for fun, and take the trouble to independently look up, discuss (in the forums) and learn topics I will announce from time to time in announcements.

If you're focused solely on your grade and do everything flawlessly by the book, but fail to demonstrate good conceptual understanding, you will likely not get an A in this course. Keep this in mind as you decide whether this quarter is the right time for you to be doing CS 1A.

For an	A+	A	A-	B+	B	B-	C+	C	D	F
You need (%)	97	91	88	86	80	78	75	67	60	< 60

Tests (25%)

There is a midterm exam during the Thursday of the middle week **(Thu Feb 14, Valentine's Day)**, and there is a final exam during the Thursday of the last week **(Thu Mar 28)**. Both tests will be administered via Canvas and can be taken remotely. Further details about the tests will be given at the appropriate time.

Attempting the tests implies an acceptance of the Foothill Honor Code which means you agree not to cheat on it.

Labs, exams and quizzes submitted after their deadlines without prior arrangements are for personal edification only. Their scores will NOT contribute to your final grade.

Quizzes (15%)

Quizzes cannot under any circumstances be taken outside the relatively narrow window during which they are offered. I'll set up the quizzes in such a way that they can be taken online from a place of your choosing.

You will see announcements about the quiz on the morning of the day before, at which time you can request accommodations or scheduling adjustments. Once a quiz has been missed, you cannot take it.

Participation (5% of final grade)

F2F students: You should be actively engaged in the classroom in order to receive participation points. I will calculate it based on your attendance and class activities.

Online students: Participation comes from an activity measurement formula used by Canvas and Zybooks. Meaningful contribution in Canvas is at least one non-frivolous post in the discussion forum, or a serious answer to a question posted by a fellow student or me.

Programming Labs (55%)

Labs are presented in weekly lab sets, plus a possible extra-credit assignment. They range in difficulty from relatively simple skill building exercises to ones requiring critical thinking and more time investment.

The first assignment is on Data Representation and is due on the Sunday ending Week 1 **(Jan 13)**. This one is to be done in Canvas. Most of the remaining labs are to be done within the Zybooks mini-IDE. Submissions must be turned in via Zybooks using the procedure described in the Zybook.

I encourage you to additionally submit your code in Canvas to get my feedback. There is an objective rubric in determining your lab score. But I can offer subjective feedback on your programming style, which, of course, you are free to disregard with no impact to your score for the lab.

If you have a bug in your code, I will try my best NOT TO DEBUG IT FOR YOU, even if that means you won't ace the lab. Instead I may give you some hints. Debugging own code is an essential skill that aspiring programmers must learn and enjoy - Yes, enjoy!

Now would be a good time to read and understand Foothill's Academic Integrity Policy. I strongly recommend you do so now. We take plagiarism very seriously and you don't want a permanent record on your transcript.

Extra Credit

From time to time, I'll present challenge coding problems in class and online which you can answer to get extra credit. I'll announce the precise way in which each such challenge should be attempted and submitted at the appropriate times. I'll make a note of your extra-credit work and apply EC points at the end of the term after the final before the grades are finalized.

Programming style

My personal preference for program formatting is the Java equivalent of the classic K&R style for C. It's not imperative that you follow the K&R style. I'm ok with any consistent and clean styling/formatting of your programs.

Compilers

In this class, most of your code ought to be written, tested and submitted within a programming environment made available inside of Zybooks. When you get around to implementing Labs 5 and later which are non-trivial, you can look into installing a desktop IDE.

After the midterm, we will be using Eclipse for both Windows and Mac. Our F2F students will find that our classroom is equipped with one computer per student and these computers (PCs) have an IDE installed on them. You are, however, welcome to bring your personal laptops to class and use them. In addition, we may also have access to a Unix/Linux command line environment where you can compile and run your programs using command line binaries. This is also an environment where I will be able to help you.

If you are facile on another IDE, you are welcome to use that, instead. However, my assistance in the forums regarding compiler specifics will be limited to Eclipse.

Communication

Please use public discussion forums in Canvas for any question or comment that relates to the class (except questions of a private nature). If you have a confidential question (grades or registration) use the Email feature of Canvas by first clicking on Inbox (in your left-nav), and then selecting me as the recipient of your message. You will be able to attach files to your message.

You'll find it rewarding to engage in dialogue with your classmates in the Discussion Forums, which you can reach by clicking on the Discussions link in your Canvas page for this course. I'll check the discussion forums often and answer any important open questions that no one has yet answered.

I also encourage you to meet with each other after class, set up private study and programming groups and work on independent (non assignment) programming challenges outside of class. I'll give you a few interesting challenges from time to time. Some of these may earn you extra credit.

Feel free to answer your fellow student questions, even if you only have a guess as to what the answer is. It's great to engage in conversation with each other in this manner.

Contacting me

You can email me at anand@fhda.edu. If you are on campus and would like to see me personally during my office hour, my room number is 0x1021 (in hexadecimal). In week 1 you will learn to decode that into decimal.

My office hours are:

- Mon/Wed: 12-1pm (online)
- Tue/Thu: 12-1pm (in my office)
- Other times by appointment

This information is also posted on my departmental page and you are welcome to stop by to ask me questions during that time. My preferred way of being contacted at other times is via the private messaging feature in Canvas (see below).

STEM Success Center

If the online forums here are not enough, please visit the STEM Center page, try to make time to meet with a tutor. These people are qualified to help you with assignments or modules without giving you an answer that will short-circuit your learning process.

Room 4213 in the STEM Center will have CS tutors at various times each day. The STEM Center is also a place on main campus where students without their own computers can do their lab work. The schedule for the STEM Center and its tutors is posted on the main STEM Center web page. Please enquire about online computer science tutors. Peruse support material, help and services offered to you FOR FREE by our awesome STEM Success Center - paid for by the division.

Other Resources

Professor Elaine Haight maintains a blog called Opportunities for CS students. It contains announcements of internships, scholarships, free

software offers, pertinent public lectures, etc. Bookmark it and visit it frequently.

Course outline and SLOs

You can access [the official course outline of record for all CS courses here](#).

Student Learning Outcomes for this course are:

1) A successful student will be able to write and debug Java programs which make use of the fundamental control structures and method-building techniques common to all programming languages. Specifically, the student will use data types, input, output, iterative, conditional, and functional components of the language in his or her programs.

2) A successful student will be able to use object-oriented programming techniques to design and implement a clear, well-structured Java program. Specifically, the student will use and design classes and objects in his or her programs.

Disability Resource Center

Foothill College is committed to providing equitable access to learning opportunities for all students. Disability Resource Center (DRC) is the campus office that collaborates with students who have disabilities to provide and/or arrange reasonable accommodations.

If you have, or think you have, a disability in any area such as mental health, attention, learning, chronic health, sensory, or physical, please contact DRC to arrange a confidential discussion regarding equitable access and reasonable accommodations.

If you are registered with DRC and have a disability accommodation letter of accommodations set by a DRC counselor for this quarter, please use Clockwork to send your accommodation letter to your instructor and contact your instructor early in the quarter to review how the accommodations will be applied in the course.

Students who need accommodated test proctoring must meet appointment booking deadlines at the Testing Center:

- Exams must be booked at least three (3) business days/weekdays in advance of the instructor approved exam date/time.
- Finals exams must be scheduled seven (7) business days/weekdays in advance of the instructor approved exam date and time.

Failure to meet appointment booking deadlines will result in the forfeiture of testing accommodations and you will be required to take your exam in class.

Contact the DRC if you cannot find or utilize your MyPortal Clockwork Portal. DRC strives to provide accommodations in a reasonable and timely manner. Some accommodations may take additional time to arrange. We encourage you to work with DRC and your faculty as early in the quarter as possible so that we may ensure that your learning experience is accessible and successful.

To obtain disability-related accommodations, students must contact Disability Resource Center (DRC) as early as possible in the quarter. To contact DRC, you may:

Visit DRC in Building 5400, Student Resource Center:

- On the web: http://www.foothill.edu/drc/
- Email DRC at drc@foothill.edu
- Call DRC at 650-949-7017 to make an appointment

If you already have an accommodation notification from DRC, please contact me privately to discuss your needs.

Important Dates

For a list of important dates for the winter quarter, see [the official college page here](#).

Refer to the blue table in page 3 of this syllabus for dates regarding lab submissions, the midterm and final exam.

Happy Hacking!

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