Information and Policies

Course Description and Prerequisite

This syllabus pertains to both the in-class and online sections of the CS1A course. While identical for the most part, there are a few salient differences between the two sections, especially in the way attendance and participation are assessed and how tests are taken. Such differences will be marked as such below. Please read this syllabus carefully.

CS 1A is an introduction to computer programming using the C++ language. Absolute beginners or students already familiar with other programming languages will learn how to write C++ 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.

> **This course is not a cake-walk. Even if you think you already know C++, you will have to devote significant time to working through assignments and implementing 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 them 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?**

Preparatory and Required Tasks

You must complete the first required task for this course no later than the first day of the quarter. If you don't complete this task, you will be dropped on the morning of day 2 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.

Contacting me

You can email me at anand@fhda.edu. My office hours are 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).

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.

Text and References

This quarter I'm going to experiment with using Zybooks because the data seems to suggest that students enjoy a higher success rate with Zybooks' interactive learning experience and guided Zylabs procedures. The book we are using is: CS 01A: Object-Oriented Programming Methodologies in Java. It is mandatory reading and contains most of the labs 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 zyBook code: FOOTHILLCS01AVenkataramanFall2018

3. Subscribe

A subscription is $77. Students may begin subscribing on Sep 10, 2018 and the cutoff to subscribe is Dec 06, 2018. Subscriptions will last until Dec 28, 2018. I'm told they can be extended for a nominal fee.

In addition to the Zybook, 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 C++ textbook that fits your style and budget.

You can order this through the Foothill Bookstore at http://books.foothill.edu/, phone: (650) 949-7305.

FAQ Page

I'm trying an experiment suggested by Prof. Elaine Haight: I have created a special module called "Questions and Answers". If you ask an important question or supply a meaningful and useful answer, both the question and answer (with suitable adaptation/comments by me) will be copied into that module along with attribution to the corresponding students (e.g. "Question asked by John Smith and answered by Efua Ngomo, CS1A, Fall 2017"). Both students will receive a certain number of extra credit points (typically between 0.5 and 2) for it. Note that Qs and As have to be unique and non-trivial in order to earn points. Only the first person to ask a particular question or answer will get points (or be included in this page unless a new answer to an existing question supplies a fresh and worthwhile perspective.

Note: You can ask me to consider your forum question and/or answer for inclusion on this page. This page will persist from quarter to quarter. Your chance for lasting fame? :-)

Programming style

Programming is a professional skill. Often you will need to interface with customers and clients in doing your job. As a result, you will frequently be contracted to do certain things in particular ways that conflict with your personal taste. In such cases, you should deliver *what the customer wants*, and according to *their*

schedule. There are specific programming style guidelines and delivery schedules (assignment submission dates/times) in this course. You can practice your customer-focused programming by following the guidelines **very closely**. Just keep in mind that your ability to earn all of the points on any given assignment will be impacted by the assignment number and whether an infraction is repeated.

Because it has been asked of me several times in the past, let me state the style guideline here: My personal preference for program formatting is the Java equivalent of the classic K&R style for C. With that said, however, I'm not as rigid as the above makes it out to be. It's not imperative that you follow the K&R style. I'm ok with any consistent and clean styling/formatting of your programs, especially using Professor Michael Loceff's style, which is slightly different from mine, but described at length in Module 1R.

Compilers

In this class, most of your code ought to be written, tested and submtited within a programming environment made available inside of Zybooks. When it comes time to implementing your extra credit or final class project, you can look into installing a desktop IDE.

> **Don't waste time in the first 3 weeks trying to install your Integrated Development Environment (IDE). That time is better spent getting up to speed with your foundations and the idea of programming.**

I will be using **Microsoft Visual Studio/C++ (Community Edition)** for **Windows** users and **Xcode** for **Mac** users. Our f2f students will find that our classroom is equipped with one computer per student and these computers (PCs) have Visual Studio installed on them. You are, however, welcome to bring your personal laptops to class and use them. I can help you with issues with either of the two IDEs above. In addition, we may also have access to a Unix/Linux command line environment where you can compile and run your programs using g++. Again, this is 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 **Visual Studio**, **Xcode** and **Linux/g++**.

Communication

Public Forums

Please use *public* **Discussions** for any question or comment that relates to the class. If you have a confidential question (grades or registration) use the **Email feature** of Canvas by first clicking on **Inbox** and then selecting me as the recipient of your message. You will be able to attach files to your message.

While you're welcome to ask me questions personally either during my office hour or via the email feature of Canvas, you'll find it a lot more 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 will give you a few interesting challenges during my lectures from time to time. Some of these may earn you extra credit.

Unless a question is of a private nature (i.e. grades, registration issues), please use the public **Discussion forum**. Also 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.

If you have a new topic, please start a new discussion. If you want to add to or ask about an existing topic, "***Post a Reply***" to that discussion.

STEM Success Center

If the online forums here are not enough, please visit the STEM Center page, and click **Schedule and Available Instructors**. These people are qualified to help you with assignments or modules without giving you an answer that will short-circuit your discovery process. Let them know that you are not to receive actual assignment solution code or even fragments. They probably know this already, but it's your responsibility to avoid submitting something that was written by a tutor or another person.

Posting Program Code

You can post code to the public discussions that is not directly from your assignment. If you have an assignment question, translate that into a piece of code that does not reveal your answer or submission.

When posting code fragments (i.e., portions of your program) into questions, make sure these code fragments are perfectly indented and that they are properly formatted. For details, see the required resource module **Pasting Code into Questions**.

Do not post *entire programs* and ask "what's wrong?" or "is this good?" That's frivolous and indicates you have not tried to narrow down the problem. Find exactly what you want to know about and post only that part of the code.

Where Everything Happens

For in-class sections, all lectures happen in class. You may excuse yourself from the odd lecture either by prior permission or a compelling reason (usually supported by a communication from counselling services) after the fact. For each week that you have 100% attendance, you'll get one participation point counting towards a maximum of 10 points for the term. Any extra credit points you earn during the quarter will only be applied to your final grade if you get at least 9 of these 10 points. Also note that extra credit points will be added to your total assignment score (not to your quiz or exam totals) and the total capped at the maximum allowable for assignments.

For online sections, all material is learned via the Canvas modules, the prescribed Zybook and the discussion forums. Online students can easily avoid getting dropped from the course by fulfilling the **meaningful participation requirement**. This usually means at least one non-frivolous post in the discussion forum, or a serious answer to a question posted by a fellow student. I will periodically scan the discussion forums and purge frivolous or repetitive posts to ensure fairness for all students. Similarly to the in-class section, online students will get participation points up to a maximum of 10 points for the term. These points are calculated from a participation formula used by Canvas that measures various activities you
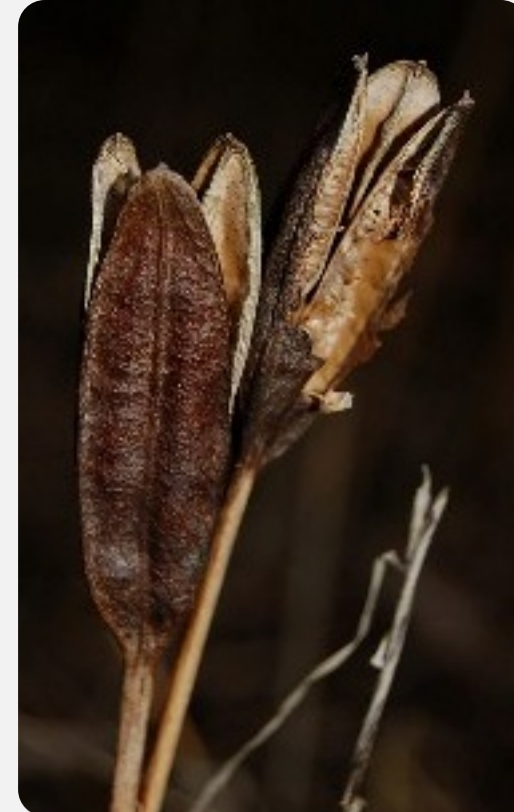
engage in on the site.

Pop Quizzes

This quarter we'll have one or more pop quizzes that will contribute 15% towards your final grade. The nature of these quizzes is such that they cannot **under any circumstances** be taken outside the relatively narrow window during which they are offered. There is only one way you can make sure not to miss them:

- For f2f students, this means attending every lecture. If you aren't able to make a particular lecture and let me know before the fact AND I had intended to give out a pop quiz on that very day, then I can arrange to have you take the pop quiz at a different time. The only other way to take a missed pop quiz later is if you provide an official letter from our counsellors or from your doctor attesting to the unexpected nature of your absence.

- For online-only students, this means making sure to stay on top of announcements and forum discussions. I will typically announce a pop quiz in the forum on the morning of the day before the quiz. The quiz itself will open over a short window of a few hours during which you have to find the time to take it. I'll make sure that the window of time spans off-work hours. For example, the quiz may open at 3pm and close at 8pm. If you miss the announcement or discussion forum post where I alert you to the quiz and consequently miss the quiz, you would forfeit your chance to earn those points.

All tests and pop quizzes are taken via the Canvas Quizzes feature. Details of each test will be announced at the appropriate time.

Assignment submissions must be turned in via Zybooks using the procedure described in the Zybook. I'll strive to give you helpful feedback soon after the deadline.

Extra Credit Challenges

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. You can easily earn the opportunity to be considered for extra credit by making sure the following two criteria are met:

1. You maintain a 100% participation (online) or attendance (in-class) - One-off absences and non-participation may be excused by **prior** permission for valid reasons.

2. You read personal and general (announcement) feedback on assignments and do not repeat an error which has been marked off once.

Much of everything else happens online via the Canvas and Zybooks sites. You can also check your lab scores on Canvas and get an approximate idea of your overall grade. It's approximate because I'll typically factor in extra credit and sometimes curve the scores before calculating the final grade.

Assignment Due Dates

There are over 20 labs presented in 8 lab sets, a final project, plus a possible extra-credit assignment. The manner and total possible score, and your eligibility to earn points for the extra-credit assignment will be determined as the quarter progresses.

> **Don't feel frightened or intimidated by the number of labs. The truth is that most of these labs are simple, and some even trivial. Only a few are challenging enough to take up significant time.**

The first assignment is on Data Representation and is due on the Friday of Week 1. This one is to be done in Canvas. Most of the remaining labs are to be done within the Zybooks mini-IDE.

I am not able to accept assignments past the deadline because I intend to post feedback shortly thereafter to help you address issues before the next assignment is due.

Grades

Your grades are based on programming **lab assignments** (20×9 = 180 points = 55%), **surprise pop quizzes** (= 15%), **participation** (10×1 = 10 points = 5%) and **exams** (20 + 40 = 60 points = 25%).

Absolute Grading Scale

% needed for	this grade
97	A+
91	A
88	A-
86	B+
80	B
78	B-
75	C+
67	C
60	D
< 60	F

Drops and Withdrawal

For a complete reference of all withdrawal dates and deadlines, refer to the Foothill College registration page.

To continue in this class, you must participate weekly in all areas: lab assignments, tests and discussions. This is part of the class participation that online classes must enforce to maintain their transferability and accreditation.

The following criteria result in being dropped from the course and I hate to lose you. So I hope you'll strive to avoid them:

- Missing any of the first week of lectures for F2F (hybrid) students.

- Missing a scheduled test without prior notice

- Non-participation for an entire week without prior notice (See exception below).

- Zeroes on, or falling behind in, two consecutive lab assignments or three lab assignments, total (See exception below).

Exception to Above Policies:

If the non-participation that has just been described occurs partially beyond the last date to drop, you may not be dropped, but you may receive whatever grade your points dictate. Therefore please don't assume that you can simply stop participating late in the quarter and you will be dropped. If you intend to drop please do so yourself, so you don't accidentally end up with an unintended "F."

If you decide to drop the class, please let me know. Those who have dropped should not continue to have access to the material.

Collaboration

Working together on homework = ZERO + Dean's Office.

Partners, roommates, and friends taking the course together: don't discuss ungraded homework with each other outside the public forums. Instead, direct all of your questions to the public forums where everyone can comment and I can moderate the discussion. Do not look for answers on cheater web sites or pay-for-help web sites.

This would be a good time to read and understand Foothill's Academic Integrity Policy. I strongly recommend you do so now.

Any variation of collaborating or copying programming lab assignments is prohibited. The assignment must be 100% your own work. Changing a few variables around to make them look different won't fool me. And if it does fool me, you probably had to change so many things that you knew enough to do it yourself in the first place.

You can talk about the modules all day long off-line if you wish. This rule only applies to lab assignments. There is a place to ask for help with homework: the **Public Forums** labeled for that purpose or the ***STEM Center***. I will spend hours helping you each week, both individually, and in groups. You can even answer each other's questions in the **Public Forums**. If I think you are giving too much information away, I'll edit your post. So there is no reason to ask your fiancée or your cousin's neighbor's lead guitarist.

If you accept help from someone who is not trained to teach without giving away the answer, it will short-circuit your learning process -- you will actually become weaker. Now, you don't have to agree with me - but you do have to follow the rule. If you want to take a class where you get to solve problems in groups, there are other sections with instructors who have that option. But if you stay in *this* class, you are agreeing to do the lab assignments on your own or with help from us.

For those of you wishing to give help, please do not give away the answer. Either tell the person where they can look to find the solution, give them a general idea or ask them to ask me. Don't post actual assignment code.

How to Ask a Question Questions

It is easy to make sure your forum questions are a good ones: Make them specific. An example of a bad question is, *"My program doesn't work. Here it is. Would you please see if you can tell me what I am doing wrong? Gretel"* Gretel is *lazy*. An example of a good question is, *"My program doesn't work. Through trial and error I have determined that the problem lies in the following five lines, but I can't seem to narrow it down any further. Can you help? Hansel."* Hansel made an attempt to organize and isolate the problem prior to asking for help. When he gets my answer, he is sure to remember it because he is prepared to hear exactly what he needs to know.

Another example: BAD: *"I don't understand the assignment. I'm lost. Please help. Jack."* The reason this is a bad question is that there are a million things I might say to get Jack on the right track, but I can't know which ones to focus on because I don't know where Jack's misunderstanding lies. Jack hasn't given me any help to help him. GOOD: I *understand the homework description up until you say 'XYZ'. But I'm not sure what you mean by 'XYZ'. In the lectures 'XYZ' seems to be ... but here it seems to mean something different. From that point on, things get hazy because of this mismatch. Would you resolve this apparent difference for me? Jill."* Here, Jill has told me exactly the first point at which she is confused so I know what to tell her to set her straight.

I am not discouraging questions: I want you to ask. Through them, I get a chance to communicate with you. But narrow down the question. Show me you have tried to answer it and have made some progress. Show me exactly where you seem to be faltering so I can know how to help you. The same holds true if you are posing your question to a fellow student or to the whole class.

Course outline and SLOs

You can access the official course outline of record for all **CS** courses here.

Disability Resource Center

Foothill College views disability as an important aspect of diversity, and 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/time.

Failure to meet appointment booking deadlines will result in the forfeit 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, s. 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.

Activity and Due Dates

Weekly Activities

This course is a lot of fun, and a lot of work. To pass it you have to make time to do both of these activities. Every week, you'll have one or more Zybook chapters to study and one or more lab assignments to complete. F2F students must attend two lectures on top of that.

Weekly Time Estimate

- **Lectures and Module Reading - about 8 hours**. This includes pasting code into your compiler and trying it out.

- **Lab Assignment - about 6-10 hours**. This varies greatly with individuals. Some students take one hour, some take 15 hours.

Typical Week

During a typical week, you will study your assgined chapter(s), read and assimilate feedback from a previous lab (if applicable), start work on a new lab and spend a significant chunk of time working on it and refining it. The bulk of your learning will happen in hands-on activity, and thus it is imperative that you work diligently on any assigned programming work. Most students who put off hands-on programming work for any reason whatsoever (e.g. laziness, over-confidence, fear and anxiety) have in the past found that the backlog catches up insidiously. These students panic and drop out of the course when they get a sudden wake up call. I don't want you to be that student. So let me be up front with you - This course will involve a lot of work, even if you think you already know all the material. Be prepared for it and make the right arrangements in your life for the next 12 weeks to give it its fair due. This will save us both a lot of disappointment.

If you think you may not be able to make the required commitment, this would be a great time to consider dropping the course so your spot can be given to someone on the waitlist. You can always come and reenroll in a later quarter when you're ready for it. It's much better than a W or F on your transcript.

Other Activities: *Discussions, Announcements, Tests*

Discussions

You can ask me or other students questions in the **Discussion and Private Messages** area. I hope you will be active here. Read through the recent **Discussions** posts every time you log in to make sure you gain the

benefit of other students' questions.

You will see an Announcement area in your Canvas dashboard every time you log in. Keep an eye on that for late-breaking news. It's your responsibility to read announcements in a timely fashion. If a surprise test with a short open window is announced and you miss seeing the announcement (and consequently the test), you lose that opportunity.

Tests

There is a mid-term exam during *the Thursday* of the middle week, and there is a final Exam during *the Thursday* of the last week. Both tests will be administered via Canvas. They will open before 6am and close at midnight. You can start the test at any time during that period from a place of your choice (home, STEM Center, etc.) but once you start the test you cannot pause it. It must be completed within the specified time. All tests are open-book, but no Internet resources may be used other than course-related modular material within Canvas. Further, you may not use any IDE or online compiling environment to answer questions. All code presented in questions are supposed to be run *in your head* or on paper with the help of a pencil or pen. 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.

Online students should take the exams during the same time as the f2f students, except that they would take them remotely.

I will not accept late mid-terms or final exams. You are to take the mid-term in a single one-hour sitting and the final in a single two-hour sitting. Details about whether or not the test will automatically submit and lock-you-out an hour (or two) after you begin it will be disclosed in the announcement area prior to the exam date.

Typical Routine

One assignment is due each week, except for the midterm and final weeks.

Make sure you stay on top of the schedule. It will be hard to get back on track if you slip up. There is no lecture or assigned reading on Friday. I hope you will not goof off on this day, but instead put it to good use and catch up on all outstanding work so you are prepared to meet the following week with ZERO BACKLOG.

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.

Due dates for extra-credit work handed out in class will be determined as appropriate (depending on the degree of difficulty of each and specific circumstances). Normally, extra-credit work will have to be posted on Canvas, or brought to class and demonstrated.

Week	Canvas Module	Topic	Zybook Chapters	Labs	Num Labs	Due
1	0	Data Representation	-	Lab 1 (Canvas)	1	Sep 28
2	1	Vars, Exprs, Streams	1, 2 and 9	Lab Set 2	7	Oct 5
3	2	Branching, Looping	3 and 4	Lab set 3	5	Oct 12
4	3	Arrays	5	Lab set 4	2	Oct 19
5	4	Functions	6	Lab set 5	2	Oct 26
6	5	Review/Midterm	1-6 and 9	-	0	
7	6	Objects, Classes	7	Lab set 6	2	Nov 9
8	7	Memory Management	8	Lab set 7	2	Nov 16
9	8	Recursion	11	Lab 8	1	Nov 23
10	9	Searching and Sorting	15	Final project	-	
11	-	Review	All above	Final project	-	Dec 7
12	-	Final Exam	All above	-	-	

Resources

- Professor Elaine Haight maintains an excellent blog called Opportunities for CS students. It contains announcements of internships, scholarships, free software offers, pertinent public lectures, etc. Book mark it and visit it frequently.

- The STEM Center, in room 4213, 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.

Happy Hacking!

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