Course Syllabus
CS 2A
Fall 2015

S.1 Course Description and Prerequisite

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. For success, 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.

S.2 Instructor

My name is Jesse Cecil, and you can email me at ceciljesse@fhda.edu. Typically you will ask questions through the private or public message center here in the course and only use email if you have trouble logging in.

S.3 Text and References

All of the important concepts will be covered in my modules. The text for the course is *recommended*, not required. It is *Absolute C++, any Edition* (6th or prior), by Walter Savitch, Addison Wesley. You must have **some** reference, however, you can use any C++ texbook that fits your style and budget. You can order this through the Foothill Bookstore at http://books.foothill.edu/, phone: (650) 949-7305.

S.4 Compilers

In this class I will be using **Microsoft Visual Studio/C++** for **Windows** users and **Xcode** for for **Mac** users.

I have handouts for **Eclipse for C/C++ Developers** for the **Mac**, but I no longer recommend Eclipse for C++ on the Mac.

If you are facile on another Integrated Development Environment (IDE), you are welcome to use that, instead. However, my assistance in the forums regarding compiler specifics will be limited to **Visual Studio** and **Xcode** (with some limited help for **Eclipse**).

S.5 Communication

Questions and comments should be posted to the **Discussions** on the left menu. I will usually reply reasonably quickly. Unless a question is of a private nature (i.e. grades, registration issues), please use the **Discussions**. 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, "**Reply**" to that discussion.

Office hours will be online using **Conferences**, which you can attend each week by going to the link on the left side of the screen. Watch for an announcement regarding the day and times.

I will answer email and discussion questions each day of the week. Please allow up to 24 hours for responses, but many times sooner.

Discussion Required for each Assignment

Points are awarded for contributions to the Questions area for each Assignment. **It's good collegial form to**

participate, inquire and assist. You can post a question, answer a question, or give an observation about computer science in general. *Also, you must post an introduction* **in the first week of class or you will be dropped as a "no show" according to the college requirements.**

Do Not Post Homework Code

Whether you have a question or suggested answer, ***never post exact homework code*** to forums. Create a separate small program to display your issue or illustration. For details, see the required resource module **Pasting Code into Questions**.

STEM Tutorial Center

If the online forums here are not enough, please visit the STEM Tutorial 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.

Online tutoring will be available with them as well from 8pm - 12am almost every evening. Check the schedule.

Private Messages

Please use **Discussions** for any question or comment that relates to the class. If you have a confidential question (grades or registration) use the **Inbox** link to send a message.

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, exactly.

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?" This is 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.

S.6 Where Everything Happens

Access the various areas of your course through the menu on the left.

- ***Assignments:*** submitted through the **Assignments**.
- ***Tests:*** taken through the Quizzes
- ***Questions or comments:*** posted using the **Discussions**.

S.7 Grades

Your grades are based on programming **lab assignments** (180 points = 70%), Discussions (20 points = 7%), and exams (20 + 40 = 60 points = 23%).

Absolute Grading Scale

% needed for	this grade
100	A+
94	A
90	A-
87	B+
84	B
80	B-
77	C+
70	C
60	D
< 60	F

S.8 Drops and Withdrawal

For a complete reference of all withdrawal dates and deadlines, refer to the Foothill College registration page at the college web site here:

Information link this quarter

You will be dropped by me for any of the following:

- Missing a scheduled test (no matter how small) without prior notice will result in an automatic drop or a zero, depending on the situation and my judgment.
- If you do not login or I do not hear from you by email for 10 consecutive days I may drop you. (See exception below.)
- If you receive a zero on, or fall behind in, two consecutive lab assignments or three lab assignments, total, I will drop you. (See exception below.)

Exception to Above Policies:

If the non-participation that has just been described occurs partially beyond the last date to drop, then I may not be able to drop you, and you may receive whatever grade that your points dictate. Therefore 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. I cannot allow anyone who has dropped to continue to have access to the material.

S.9 Collaboration

Working together on homework = ZERO + Dean of Student's Office. (See the Academic Integrity flyer in the announcements)

Husbands and wives, 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.

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. 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, you'll have to take the course from someone else. But if you stay in *this* class, you are agreeing to do the lab assignments on your own or with help from us, here, in this course's public forum.

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.

S.10 How to Ask a Question Questions

"There's no such thing as a bad question" is a myth. I don't know how the rumor got started.

It is easy to make sure your question is a good one: Make it 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 love them. Through them, I get a chance to communicate with you all. 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.

S.11 Expanded Content

- **Week 1** - Compilers, Xcode, Visual C++, "Hello World", anatomy of a program, compiler errors vs. run-time errors, critical style rules and indention requirements.
- **Week 2** - Numeric expressions, type declarations, console output, character, string and floating point types, type compatibility, playing computer.
- **Week 3** - User input, selection (*if/else*), logical expressions, string manipulation, string-numeric conversion, formatting numeric output.
- **Week 4** - Repetition (*for*, *while*, and *do* loops). *Optional* introduction to GUI programming in C++.

- **Week 5** - Program modularity, methods, parameter passing. the functional return, global vs. local variables, method overloading, optional examples in physics, medicine and climate modeling.
- **Week 6** - OOP programming, instance data and methods, *constructors*, *destructors*, *accessors* (getters), *mutators* (setters), protection of private data, separation of I/O and computation.
- **Week 7** - Static data, static methods, the "**`this`**" object, object assignment, OOP program design strategies, reference parameters,object parameters, introduction to **`const`**.
- **Week 8** - Arrays, array parameters, using arrays with loops, simple sort algorithms, compound data types (arrays of objects and objects containing arrays), index bounds testing.
- **Week 9** - Linear search algorithm, stack data structure, recursion, binary search algorithm.
- **Week 10** - Pointers and dynamic memory. Older CStrings vs. string-class strings (S-C strings)
- **Week 11** - TBA
- **Week 12** - Final quiz.

You can access the official course outline of record for all **CS** courses here: Catalog link

From that page, select **Dept: Computer Science → Search**, and from there, select any CS course whose official outline you want to review.

Student learning outcomes for this and other CS courses can be found at: This SLO link

S.12 Weekly Activities

Every week you have two lessons, or **Modules**, to study and one **Lab Assignment** to turn in. There are exceptions (see calendar, below), but this is the basic drill. 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.

Weekly Time Estimate

- **Module Reading - about 5 hours**. This includes pasting code into your compiler and trying it out.
- **Lab Assignment - about 5-8 hours**. This varies greatly with individuals. Some students take 1 hour, some take 10 hours.

Typical Week

Here is the day-by-day breakdown of a typical week. Some weeks differ, but this will help you understand approximately what you are facing on a daily basis.

Typical Week	
Monday (first 2 or 3 weeks only)	Read resource module R
Tuesday	Read module A
Wednesday	Assignment Due (2 PM)
Friday	Read module B

S.13 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 in this area. Read through the recent **Discussions** posts every time you log in to make sure you gain the benefit of other students' questions.

You must ***post an introduction* in the first week to avoid being dropped as a no-show.**

No Exact Homework Code Allowed

Please phrase questions in plain English or use non-homework code examples to demonstrate you question or suggested answer when posting.

Follow Module 3R When Posting

Code fragments must be formatted according Module 3R to receive an answer. Otherwise, we'll ask you to fix the formatting and we'll check back to answer the question once the formatting is achieved.

Announcements

You will see an Announcement area in the top right of your welcome screen every time you log in. Keep an eye on that for late-breaking news.

Tests

There is a short exam on *Friday* of the sixth week and there is a Final Exam on *Tuesday* of the 12th week. These tests will be available for two full days prior to the due date. You must take the tests in that two-day period. I will not accept late quizzes or final exams.

The exams will be remotely proctored, so allow a few extra minutes to get setup. Have your ID ready and have a web cam and microphone working before you begin.

S.14 Official Calendar

It is listed on the syllabus page

Repeat

No late assignments accepted after the Friday of Week 11, just before finals week. Also, the Final Exam is not accepted late. It is due by midnight, Tuesday of finals week**.** You have three months to prepare for these deadlines.

Optional Modules

There is an occasional **Module C** in some weeks. I did not put this on the calendar. These modules constitute optional reading meant for advanced and ambitious students.

S.15 Late Work

The late penalty is 2 points per day. (*anything past the **due time of 2 PM** it is 1 day late*) No assignment will be accepted more than one week late. It is important to keep up with the class in a timely fashion.

S.16 Disability-related Accommodations

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 Room 5400
- Email DRC at adaptivelearningdrc@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.

S.17 Next Steps

Now that you have the idea, you can look up and see that in the first week you are supposed to read:

- Monday - This syllabus and resource R1
- Tuesday - Week 1A
- Friday - Week 1B

It is a good idea to print out this guide and the syllabus (and any other modules you wish) for handy reference.