

Course Information and Syllabus

Instructor

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Head TA

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n/a
TBA - see course web site

Course Website

Main site: <http://cs106x.stanford.edu/>

Discussion forum: <http://piazza.com/stanford/fall2013/cs106x> (self-register)

Course Overview

This course is an accelerated version of CS106B for students with extensive prior programming experience in a language like Java or Python, or who performed exceptionally well in CS106A. We will assume that you are very comfortable with basic programming constructs such as loops, functions or methods, arrays, basic I/O, standard data types, and classes. In this course, we will build on this foundation by sharpening your skills on more ambitious projects, introducing recursion techniques, making a more detailed study of data abstractions, and beginning to quantify design tradeoffs with algorithm analysis.

The more reasonably paced programming abstractions course, CS106B, covers the same major topic areas as 106X. If you are unsure of which course would be a better fit for you, please email the instructor or visit office hours.

Units

- ^ undergraduate students: 5 units (required)
- ^ graduate students: 3 or 5 units, depending on what best fits into your schedule

Regardless of units, the course content and requirements will be the same.

CS106L

CS106B is taught in C++, but is not an in-depth study of the C++ language. We will use our own custom libraries in place of many standard libraries, and will not explore many parts of the language.

If you're interested in learning much more about C++ and its libraries, consider additionally signing up for **CS106L**. CS106L is an optional one-unit lab-based companion course to CS106B that is dedicated to exploring the C++ programming language in depth.

CS106L is *not* a replacement for the standard CS106B course, nor for its discussion section. So if you enroll in CS106L you should also still sign up for a weekly discussion section on the web site.

Textbook

Roberts, Eric. *Programming Abstractions in C++*. ISBN 978-0133454840. Required.

LaIR

The department operates a student computer cluster/lab called the "LaIR" located on the second floor of Tressider Union. Section leaders will be available at the LaIR to help students with problems. The LaIR is staffed by section leaders for this course throughout the week. Please refer to the course website for the most current LaIR schedule information.

Grades

Your overall course grade will be determined as a weighted average of the following categories:

4%	section participation	
6%	lecture participation	
20%	midterm exam	(Thursday, October 24, 2013, 6:00p – 8:00p, location TBA)
30%	final exam	(Thursday, December 12, 2013, 8:30a – 11:30a location TBA)
40%	homework assignments	

You have one week after notification of scores to contest any grade for errors in scoring or recording. *After one week, all grades are fixed.*

Section Participation

You must also **sign up for a weekly 50-minute section**, held on various times/places on Wed-Fri. Your section leader will grade your homework. In section we answer questions, go over common errors in homework solutions, and discuss sample problems in more detail than we can in lecture. Part of your course grade comes from attending and participating in your section on a regular basis.

Section signups are handled online during the first week of the quarter, from Thursday 5:00p to Sunday 5:00p at the following URL, also linked from the class web site. After a matching process, your section assignments will be e-mailed out to you. Sections begin the second week of classes.

^ <http://cs198.stanford.edu/section>

Although Axess lists sections for this course, we don't look at Axess when assigning sections. Even if you're enrolled in a section through Axess, you must sign up through our system as well to make sure someone will grade your assignments.

Lecture Participation

There will be frequent opportunities for active participation during lecture: solving problems, responding with clickers, and group discussion. Everyone is expected to participate. Additionally, alerting the instructor when you are confused, lost, didn't hear something, or otherwise in need of additional explanation is strongly encouraged. Clicker discussion questions will be graded for participation only and not correctness of the response. Full credit for clicker points for a given day will be awarded for clicking in at least 80% of the time that day. Three participation days will automatically be dropped from your final grade, in order to accommodate illnesses or other unexpected events. Graded quizzes on the reading may be assigned periodically at the instructor's discretion.

Exams

Our exams are **closed-book, closed-notes**. A "cheat sheet" reference page may be included in the exam itself, at the instructor's discretion. Students will be notified of the contents prior to the exam.

Make-up exams will be given only in rare cases of emergency, and the instructor must be notified immediately if an emergency arises. If you must miss an exam due to unavoidable schedule conflicts (e.g., an exam in another class at the same time), you must contact the instructor at least two weeks prior to the exam. No exam reschedule requests will be granted based on personal reasons such as travel. No special accommodations will be made for students who arrive late to exams, regardless of the reason (missing a bus, overslept, etc.). Students who arrive after other students have already left the exam room may be denied entrance to the exam.

Homework Assignments

Homework consists of programming assignments done on an individual basis. You will have roughly one week to work on each assignment, and there will be approximately 7 assignments in total. Programs will be graded on both functionality and style. Disputes about homework grading must be made within one week of receiving the grade.

Rather than a direct point-based scoring system, a check-plus, check, check-minus grading system is used. The details of the system will be posted along with the assignment descriptions. Dividing the grades into these general categories means

that your section leader can spend more time talking about what you need to learn from the assignment without being bogged down in accounting for minor point deductions.

For each assignment, you must **make an appointment for an interactive-grading session** with your section leader. Your section leader will explain in section how to schedule these sessions and go over the grading process in more detail. The interactive-grading session with your section leader must be scheduled within two weeks of the assignment due date.

Turnin and Lateness

Submit your assignments electronically from the course web site. Each assignment has a specific due date/time listed on its handout and/or the course web site.

Each student begins the course with **3 "late days"** for use on homework assignments. A late day allows you to submit a program up to one lecture late without penalty. For example, if a program is due on Monday at 9pm, using a late day allows you to submit it on Wednesday at 9pm without penalty. Or if a program is due on Friday at noon, using a late day allows you to submit it up to the following Monday at noon without penalty. *You may use up to 2 late days on any given assignment; you may not use all 3 on the same program.* Any fraction of a late day counts as one day. For example, if a program is due on Monday at 9pm, turning in the assignment at 10pm will consume an entire late day.

Late work in excess of the late days for the quarter will not be accepted. Note that late days may **not** be used on the very last assignment, even if you have late days remaining.

Late days are intended to be used for emergencies that would typically warrant exceptions granted by the instructor: illness, accidents, family emergencies, and the like. Please use care in deciding when to use your late days, because students who have consumed late days for reasons other than dire emergency **will not be granted additional exceptions.**

CS106B/X Honor Code

Academic conduct for students at Stanford is governed by the Honor Code. Part of the Honor Code is a pledge and expectation to participate in class without seeking unauthorized help on graded work such as assignments and exams.

Unless otherwise specified, programming assignments in this course must be completed individually. All code you submit must be your own work. You may discuss general ideas of how to approach an assignment, but never specific details about the code to write. Any help you receive from or provide to classmates should be limited and should not involve details of how to code a solution. This is important to us partly because we feel that it is imperative that you learn how to apply the class material toward solving challenging problems; you will not learn this by copying others' solutions.

Here are some specific behavioral guidelines that we expect you to follow in this class:

- **On each assignment submission, you must indicate any assistance you received.** For example, if you look at an example in the textbook or course web site, or a web tutorial online, cite the source. If you receive any non-trivial help from another person while working on the assignment, or give such help to another person, cite this as well. Failure to cite a significant source may constitute plagiarism.
- **You must not consult any assignment solutions that are not your own.** We tend to re-use some assignments from quarter to quarter, but you must not examine any other person's homework solution.
- **You must not willingly give out your assignment solution to another student.**
- **You must not attempt to disguise any code that is not your own.**
- **You must not post your homework solution code publicly online.** For example, do not paste your code into a public online forum or file-sharing site (e.g. C++ Forums, PasteBin, DropBox) to ask others for help.
- **You must not discuss the assignment with another student while your code is open in front of you.** Verbal discussions with other students, whether they be in this class or not, should engage with general course concepts and not reference the specifics of an assignment, and especially not your code.

To help us enforce the above policies, we run **similarity-detection software** periodically over all submitted student programs, including programs from past quarters and any solutions found online on public web sites. This software is powerful and is very good at finding inappropriate collaboration, even if the program is altered to disguise the similarity.

Please also take reasonable steps to ensure that your work is not copied by others. If a classmate approaches you and seeks an inappropriate level of help on an assignment, instead point them to class resources such as lecture examples, the textbook, the LaIR, course message forum, or emailing the section leader or the instructor.

After all of the above rules, you may be left thinking that you should never talk to another student or consult any help resource, for fear of accidentally violating the policies. But many kinds of collaboration and resources are acceptable and encouraged. In computer science courses, it is usually appropriate to ask others—the section leader, instructor, or classmates—for ideas, hints, and debugging help, or to talk generally about problem-solving strategies and program structure. We encourage it. But these discussions should not approach a level where you are discussing specific lines of code. If they do, be sure to cite the assistance you receive, and be mindful to interact in a way that is consistent with the policies.

Most Honor Code cases are due to last-minute panicking in which a student made a poor decision to copy work from someone else. If you don't turn in one of the assignments, your overall course grade will be negatively impacted, but it is unlikely that a single missed assignment will cause you to fail the course. More likely, your grade will drop by a half-step or two (e.g. from an A to an A- or a B+). If you are having a hard time with one of the assignments and legitimately feel that you cannot finish it, it is substantially better to just not submit it than to submit work that is not your own. You are far better off taking a slightly lower grade than facing the risk of university disciplinary proceedings.

Please feel free to **contact the instructor** if you have any questions or if you are unsure whether a particular behavior falls within our policy. We realize that the vast majority of CS106 students understand the Honor Code and follow it earnestly, and we appreciate your hard work. We will do our best to provide you with lots of help and assistance along the way so that you will not feel a need or pressure to violate the Honor Code.