CS61A: General Information 0

George Wang
gswang.cs61a@gmail.com
Department of Electrical Engineering and Computer Sciences
University of California, Berkeley

June 21, 2010

1 Introduction

The CS 61 series is an introduction to Computer Science. This first course concentrates mostly on the idea of abstraction, allowing the programmer to think in terms appropriate to the problem rather than in low-level operations dictated by the computer hardware. The next course, CS61B, will deal with the more advanced engineering aspects of software on constructing and analyzing large programs and on techniques for handling computationally expensive programs. Finally, CS61C concentrates on machines and how they carry out the programs you write.

In CS 61A, we are interested in teaching you about programming, not about any particular programming language. We consider a series of techniques for controlling program complexity, such as functional programming, data abstraction, object-oriented programming, and query systems. To get past generalities you must have programming practice in some particular language. In this course we use Scheme, a dialect of Lisp. This language is particularly well-suited to the organizing ideas we want to teach. Our hope, however, is that once you have learned the essence of programming, you will find that picking up a new programming language is but a few days work.

Important Note: Programming ability is built by practice. Harvard Professor of Mathematics Gian Carlo Rota is fond of saying "The Germans have aptly called Sitzfleisch the ability to spend endless hours at a desk doing grueling work. Sitzfleisch is considered by mathematicians to be a better gauge of success than any of the attractive definitions of talent with which psychologists regale us from time to time." Computer Science is no different. We expect you to spend about *20 hours a week* on this class outside of lecture/lab/discussion.

2 Staff

Instructor	George Wang	cs61a	11:00-12:30
Teaching Assistants	Steven Tang	cs61a-ta	12:30-2:00
	Jonathan Kotker	cs61a-tj	2:00-3:30
	Eric Tzeng	cs61a-te	3:30-5:00
	Seshadri Mahalingam	cs61a-th	5:00-6:30

3 Course Material

The required textbook for the class is Structure and Interpretation of Computer Programs, 2nd Edition by Abelson and Sussman (SICP). People who do not have prior experience with Scheme may also get Simply Scheme by Wright and Harvey for extra help; Simply Scheme is entirely optional. Both of these are available online in the references section of the course website. Their direct links are: `http://cs.berkeley.edu/~bh/ss-toc2.html` for Simply Scheme and `http://www-mitpress.mit.edu/sicp/full-text/book/book.html` for SICP.

The homeworks, labs, projects, solutions, lecture notes, and various other important documents will be posted on the course website at `http://inst.eecs.berkeley.edu/~cs61a/su10/`.

You will receive an Instructional Computing Account in lab today to access the lab computers and servers. The lab computers runs the UNIX operating system; you can find an excellent tutorial on using UNIX at `http://www.ee.surrey.ac.uk/Teaching/Unix/`. You will only need to read the Introduction and the first two tutorials. We will use Emacs as our main text editor[1]. You may find many detailed tutorials online but the TAs will go over the basics in the first day of lab.

Important Note: You will turn in all assignments from your inst account. Hence, it is imperative that you make sure you have an account and get familiar with it as soon as possible. You can also find implementations of UCB Scheme Interpreter for your home operating system here: `http://inst.eecs.berkeley.edu/scheme`

4 Newsgroup and Office Hours

We will use Google Groups to provide a forum where you can ask questions. If you are not yet part of this group, you will receive further instructions in lab. You do not need a Google account to access the group. The URL to the group is `http://groups.google.com/group/cs61a-students-su10`.

Office hours is a period of time where you can go to the TA or the instructor to get personal help. We highly recommend that you go to office hours if you are having a lot of difficulties with the homework. Under the one-to-one setting of an office hour, we can narrow down the reasons that you having trouble and guide you better. Remember that we enjoy teaching so do not feel like you're intruding by going to office hours.

[1] You can use whatever you like, but our TAs are only responsible for knowing emacs.

5 Exams

There will be 3 exams at night. If you are unable to make these exam times, you must notify us *immediately*. We estimate that you should be able to finish midterms in 2 hours and the final in 3 hours.

Exams will not be open book. However, you will be allowed 1 sheet of notes for the first exam, 2 sheets for the second, and 4 for the final. Futhermore, you will be provided with reference documents that you may find useful.

- Midterm 1: July 8th, 7pm
- Midterm 2: July 29th, 7pm[2]
- Final: August 12th, 6pm

If you have disabilities that need special facilties or arrangements, you should contact me as well as the Disabled Students Program (DSP) immediately. The DSP certifies students as having special needs, and such students are entitled to the necessary accomodations. However, unless you tell me, I have no way to knowing about them. Thus, please make sure to let me know by email or in person.

6 Lab and Discussion

The lab and discussion sections are run by Teaching Assistants; each TA will handle enrollment for his or her sections. We anticipate some rearrangements during the first week in response over/under-enrollment. If you are not enrolled, you should pick a discussion/lab section, but be prepared to shift if your first choice is full. Please try to be in a definite section by the second week, though, because much of the coursework will be done in groups; these groups will be set up by the TAs within each section. Please attend the same TA's lab and discussion section for administrative sanity on our part.

Your Reader will also be in Lab every week. You will each spend approximately 5 minutes with your reader weekly, where they will make sure you have understood the homework. If you did the homework, made mistakes, then read the solutions every week, you should do just fine.

7 Quizzes

Since this is a summer class that moves at double speed, the staff has taken special precautions to ensure you do not fall behind. We have a staff of tutors that will meet with you on a weekly basis in a group setting, to ensure that you will be able to get as much one-on-one contact as possible with a staff member. You and a small group of other students will be assigned a Tutor later in the first week. This Tutor will administer in-person quizzes weekly. These quizzes are meant not to adversely affect your grade, but to help you identify weaknesses and help you target them. Your group will independently schedule a time for you to meet. You may choose to meet anywhere: in Soda Hall, any Peet's, or even have a rotating lunch-place of the week.

[2]This was originally erroneously labeled as July 30th. Corrected 7/24.

8 Grading

Category	Category Breakdown	Points	Total Points
Homework			30
	Homework 1	6	
	Homework 2	6	
	Homework 3	6	
	Homework 4	6	
	Homework 5	6	
	Homework 6	6	
	Homework 7	6	
Quizzes			10
Projects			50
	Project 1 (Blackjack)	8	
	Project 2 (Adventure)	16	
	Project 3 (Interpreter)	18	
	Project 4 (Your Choice)	8	
Midterms			50
	Midterm 1	25	
	Midterm 2	25	
Final			60

Table 1: Grade Breakdown

Grade	Minimum Points
A	180
A-	170
B+	160
B	150
B-	140
C+	130
C	120
C-	110
D+	107
D	103
D-	100

Table 2: Grading Scale

This class is not curved! Your grade cannot be harmed by the outstanding performance of your peers. Therefore, we ask that you help each other as much as you can.[3]

Homeworks, Quizzes, and Projects will be submitted electronically and graded partially face-to-face. A significant portion of your homework, quiz, and project score will be based not only on what you turn in, but how well you can explain your solutions.

[3]To be fair, in a curved class, you should still help your peers. As an exercise, try seeing the effect on a curve if you are a super-tutor and can raise anybody getting a C to an A. You'll notice that the effect is virtually nonexistent. Furthermore, explaining material is the best way to learn. So, even in a curved class, helping others will still only have a positive impact on your grade.

Homeworks are capped at 30 points, meaning as long as you are above this threshold, you are earning full credit. Furthermore, you will get full credit on each assignment by putting in real effort in every question. *You are not expected to get all of them right!* We do not allow you to skip homeworks. Thus, each homework you do not turn in showing at least minimal effort will result in -3 points from your final homework score. In other words, the highest you can earn with 1 missing assignment is 27/30.

Homeworks will be due 7AM of every Monday. Hopefully, this discourages you from waiting until the last minute. This also gives me a bit of time to take a look at submissions so I can address some questions in Monday's lecture.

You will also have 96 total 'slip hours', where you may use up to 48 on each project. Each slip hour allows you to turn in a project one hour late. You may not use slip days on homework, because solutions will be posted promptly. We recommend you reserve them for the later projects, as they are more challenging. If you are doing a partner project, then you may use slip hours if and only if both members of your group has slip hours. In other words, you will be using 2 slip hours per hour in a 2 person group.
Between slip days and capped homework, we will not accept late submissions for homework and projects. If you anticipate something more serious where you will be be late by more than the slip days allow, contact us immediately to arrange something.

9 Policy on Collaboration

Do it. No, seriously, we mean it that you should be absolutely encouraged to help each other. We will be encouraging this through study groups that will be assigned. In such a large class, if you want to succeed, you will have to rely on one another.
However, do remember that this help should not overstep the boundaries of collaboration into the realm of cheating. For the department policy, see: http://www.eecs.berkeley.edu/Policies/acad.dis.shtml

Here's a few things to note:

- Your homeworks and projects will be graded face-to-face. In other words, you must be willing and able to defend any design decisions you make in your homework, and you must be ready to explain any of your solutions. To discourage cheating, grading in this course is strongly weighted towards these sessions.
- You should always acknowledge who helped you, by explicitly stating that at the top of your submitted file. If you acknowledge it, you can never be accused of cheating.
- Don't copy solutions from previous semesters. *Don't even look at them!* Last semester, we had students who looked at them to 'check their work'. What they did not realize, is that by doing so they biased their minds towards one specific way to solve the problem that it was not only obvious but prevented them from really learning the material.
- There are more than a few ways to solve a problem. If you were asked to describe the sky in a word, many people would say 'blue'. Given a sentence, maybe a few people have the same sentence. However, given a paragraph, no two people will come up with the same words. The same is true for pieces of code.
- The rule of thumb is that you should never be in possession of somebody else's code. If your friend or partner asks you for help with debugging, you are allowed to provide hints, and even look at *their* code. However, you may not show them *your* code to see what you did. In contrast, a response such as "You should double-check your base case" is very helpful!
- Please ask a TA or Instructor if you are in a gray area.

9.1 Penalties for Academic Dishonesty

The Department Policy stated above will apply. If you cheat on the homework, we'll give your first offense -4/0. After that, it's an automatic F in the course. If you cheat on projects or exams, it's an automatic F in the course. These offenses will be reported to the Office of Student Conduct.

We want you to know that we are practically always available one way or another (via email if nothing else), and that if you start early, there is no reason you should need to resort to cheating. Furthermore, you are *encouraged to collaborate on homework* so long as you note where you are getting help. [4]

[4] Added June 28th.