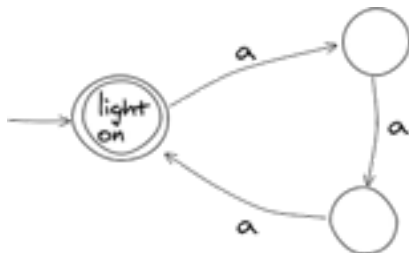


# Computer Science 24



## Spring 2015 [CN:25742] Freshman Seminar for CS Scholars Course Syllabus

### Teaching Assistant

Cesar Torres (cearto@berkeley.edu)  
Please add CS24 to the subject line  
Office Hours: By Appointment, BCNM 4th Floor

### Class Meetings

Tuesday 1 pm - 2pm, Soda Hall 310

### Piazza

<https://piazza.com/berkeley/spring2015/cs24/resources>

### Website

<http://cearto.com/teaching/cs24>

## Course Objectives and Goals

There are many “tricks” and “hacks” that computer science professionals develop over the course of their careers. Many of these are tacitly learned, either from observing expert programmers or developed through practice. This course serves as a structured practicum to enable students to refine their programming chops, engage with research, and contribute to a collective knowledge base. Students will also have a survey of some of the various subfields within Computer Science.

The class is a companion course to CS61B Data Structures. Assignments and exercises will be in tandem with topics covered during that week.

## Submission Repos

COOKBOOK (HTML):

[git@bitbucket.org:cs24spring15/advanced-potion-making.git](https://github.com/cearto/cs24spring15/advanced-potion-making)

PROBLEM SETS (LATEX) :

[git@bitbucket.org:cs24spring15/time-capsule.git](https://github.com/cearto/cs24spring15/time-capsule)

SEMINAR SUMMARIES (GDOC):

<https://docs.google.com/a/berkeley.edu/spreadsheets/d/19po24tmBN97xHI1K6BjmiM-1pKpBqKjveZkkBZrtoGg/edit#gid=0>

## Collective Problem Sets (35%)

“You don’t really learn a subject until you’ve taught it ... twice” - Patricia Burchat

When it comes time to study for classes, having a corpus of past examples is incredibly useful for understanding key concepts. Frankly nothing beats an example like one you developed yourself. In this class, students will be contributing to a repository of examples for each concept covered in CS61B.

Students will work in groups of four and be assigned a topic. Groups are tasked with researching this topic in depth, designing five exam-style questions, and providing their corresponding solutions.

Questions should not be copied from existing CS61B or associated courses at other universities. They may however inspire a new set of questions. The purpose of this is twofold - you expand your own knowledge of a specific problem within data structures and programming, and together we build a repository of sample questions to guide you on your Midterm and Final exams.

*Due Date: Every other Sunday, midnight*

*Submittables: <topic>.pdf <topic\_answers>.pdf*

### **Programming Cookbooks (35%)**

Each week, ten code recipes will be posted. These recipes include common routines and issues found in traditional practice (e.g. print all file names in a directory). These assignments are meant to aid with developing your programming skills as well as iterative development with a partner.

Your job is to pair up with a student, pick a recipe, and implement separate versions of the recipe. You will then write unit tests, and collaboratively refine your solutions. Your refined solutions should give a high-level explanation of what improvements were made.

*Due Date: Every other Sunday, midnight*

*Deliverables: RecipeHTML page*

### **Research Seminar (20%)**

CS Scholars are required to attend at two lectures from at least three hours of the EECS-related research seminars, write and submit a page summary (in LaTeX).

This summary should include two insights made either by you or the presenter, one oversight, and an explanation of a concept that was not understood.

*Due Date: rolling*

*Deliverables: Google Drive document link*

### **Attendance (10%)**

Students will be graded on attendance. Students may have at most two unexcused absences (not counting days marked as optional).

### **Late Day Policy**

Each group will be allowed (3) three late days (24 hrs). No written request need be submitted.

### **Books and Software**

No books are required for this course. However, the only the following tools will be supported.

LaTeX (<http://latex-project.org/ftp.html>)

Sublime Text 2

Python, JavaScript, HTML/CSS, Java

Git (via BitBucket)

## EECS Presentations

EECS Department Colloquium (Wed 4-5PM)  
<http://www.eecs.berkeley.edu/Colloquium/>

BiD Lab Seminar (Tues 12 - 1 pm)  
<http://schedule.bid-seminar.com/>

SWARM Lab Seminar (Thurs 12:30-2:00 pm)  
<https://swarmlab.eecs.berkeley.edu/swarm-lab-seminar-series>

Programming Languages Seminar (Thurs 12pm - 1:30pm)  
<http://pl.eecs.berkeley.edu/seminar/>

Security (Thurs 1-2pm)  
<https://www.truststc.org/seminar/>

AMPLab (Algorithms, Machines, and People) Seminar  
<https://amplab.cs.berkeley.edu/seminars/>

PhD Dissertation Talks

## Schedule

1/20	Introduction, LaTeX 10
1/27	Introduction to Version Control (Git) - Forming Groups
2/3	Lecture: Web Technologies - Chrome Extension
2/10	Lecture: Servers/ Frontend <i>Programming</i>
2/17	61B Midterm 1 Review
2/24	Lecture: Relational Databases - SQLite
3/3	Lecture: Human-Computer Interaction
3/10	Lecture: Computer Graphics - Three.js
3/17	<i>Spring Break - No Class</i>
3/24	Lecture: Artificial Intelligence - 2048
3/31	<i>TBD</i>
4/7	Lecture: Networking - How to Build the Internet
4/14	Lecture: Physical Computing
4/21	Grad Panel / Job Panel
4/28	Wrap up, HKN Survey
5/5	RRR Week - CS61B Final Review ( <i>Optional</i> )
5/12	Finals Week