EE 16A: Designing Information Devices and Systems I
Spring 2015

Instructors and Lecture

- Instructors
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  Claire Tomlin | tomlin@eecs.berkeley.edu
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  Vivek Subramanian | viveks@eecs.berkeley.edu
- Lecture: TuTh 2:00-3:30 PM | 60 Evans

Office Hours

Elad Alon TuTh 10:00-11:00 AM | 519 Cory
Gireeja Ranade M 6:30-7:30 PM | 540 Cory and Tu 3:30-4:30 PM | 400 Cory
Claire Tomlin Tu 11:00-12:00PM and W 10:00-11:00AM | 721 Sutardja Dai
Babak Ayazifar Th 4:00-5:30 PM | 540AB Cory
Vivek Subramanian Tu 11:30AM-12:30PM and Th 6:00-7:00 PM | 513 Sutardja Dai

GSIs

Vasuki Narasimha Swamy | vasuki@berkeley.edu
Paroma Varma | paroma@berkeley.edu
Vikram Iyer | viyer@berkeley.edu
Nathaniel Mailoa | nmailoa@berkeley.edu

Office Hours

Vasuki Narasimha Swamy W 11:00-12:00 AM | 258 Cory
Paroma Varma W 2:30-3:30 PM | 212 Cory
Nathaniel Mailoa F 2:00-3:00 PM | 299 Cory

References

Sergei Treil, "Linear Algebra Done Wrong"
http://www.math.brown.edu/~treil/papers/LADW/book.pdf
Khan Academy, Vectors and Spaces
https://www.khanacademy.org/math/linear-algebra/vectors_and_spaces
G.C. Calafiore and L. El Ghaoui, "Optimization Models"
http://www.eecs.berkeley.edu/~elghaoui/optmodbook.html
S. Boyd and L. Vandenberghe "Introduction to Matrix Methods and Applications", (Draft) October 2014
http://stanford.edu/class/ee103/mma.pdf
Sheldon Alxer, "Linear Algebra Done Right"
http://linear.axler.net
Gilbert Strang, "Introduction to Linear Algebra"
http://math.mit.edu/~gs/linearalgebra/
EE 40 videos
http://www.ntspress.com/publications/circuits-second-edition/circuits-2e-faculty-resources/circuits-videos-from-berkeleys-ee-40/

Homework

Homework is always due at 5 pm on Thursday unless otherwise specified. Self-grades are always due at 6 pm on the Monday after the homework is due.

Homework party: Monday 6-8 pm | 540AB Cory

Every week in 540 Cory, there will be a "homework party." This is completely optional. GSIs will be present in shifts as will some readers. Students are expected to help each other out, and if desired, form ad-hoc "pickup" homework groups in the style of a pickup basketball game.

Homework Grading

The primary way that the homework will be graded is by yourselves. Solutions will be posted online and then you will be expected to read them and enter your own scores and comments for every problem in the homework on a simple coarse scale:

0 = didn't attempt or very very wrong,
2 = off in the wrong direction or no clear direction,
5 = right direction and got half-way there,
8 = mostly right but a few minor things missing or wrong,
10 = 100% correct.

Your grades will be due the Monday after the homework deadline and if you don't enter any grades by the deadline, **you are giving yourself a zero on that assignment.** Note: all partial credit must be justified with a comment.

Just like we encourage you to use a study group for doing your homework, we strongly encourage you to have others help you in grading your assignments while you help grade theirs. This will also help you avoid self-favoritism.

The readers are going to grading and so we will catch any attempts at trying to inflate your own scores. This will be considered cheating and is definitely not worth the risk.

If you have any questions, please ask on Piazza.

Labs

Lab sessions are an important part of this course. Because of the limited amount of equipment, please only attend the lab session you signed up for through Telebears. The material on in class and on the homeworks will be closely tied to the content in the labs.

Discussion Sections

Please enroll in a discussion section via Telebears, if you have not already. You may only enroll in a discussion section that has space available: see the online schedule. Outside of your discussion section, you should feel free to attend any of the staff office hours and ask any of us for help. Unofficially, you are welcome to attend other discussion sections but only if there is physical room.

Exams

There will be two midterms and one final exam.

- Midterm 1: Feb 19 in class | (Exam) (Solutions)
- Midterm 2: Apr 9, time & location TBA
- Final: May 11, 11:30 AM - 2:30 PM, location TBA

Grade Breakdown

- Homework: 15%
- Labs: 15%
- Participation: 10%
- Midterms: 30%
- Final: 30%

Extra credit will be available for many creative activities including helping us debug issues with the class and coming up with constructive solutions. (For example: creating practice problems with solutions, providing patches to bugs in labs and homeworks, etc...) Talk with your GSI in person or post on Piazza if you want to get feedback from the entire class.

Course Communication

The instructors and TA will post announcements, clarifications, hints, etc. on Piazza. Hence you must check the EE16a Piazza page frequently throughout the term. (You should already have access to the EE16a Spring 2015 forum. If you do not, please let us know.) If you have a question, your best option is to post a message there. The staff (instructors and TAs) will check the forum regularly, and if you use the forum, other students will be able to help you too. When using the forum, please avoid off-topic discussions, and please do not post answers to homework questions before the homework is due.

If your question is personal or not of interest to other students, you may mark your question as private on Piazza, so only the instructors will see it. If you wish to talk with one of us individually, you are welcome to come to our office hours. Please reserve email for the questions you can't get answered in office hours, in discussion sections, or through the forum.

It can be challenging for the instructors to gauge how smoothly the class is going. We always welcome any feedback on what we could be doing better. If you would like to send anonymous comments or criticisms, please feel free to use an anonymous remailer like this one to avoid revealing your identity.

Collaboration

You are encouraged to work on homework problems in study groups of two to four people; however, you must **always** write up the solutions on your own. Similarly, you may use books or online resources to help solve homework problems, but you must always credit all such sources in your writeup and you must never copy material verbatim. We believe that most students can distinguish between helping other students and cheating. Explaining the meaning of a question, discussing a way of approaching a solution, or collaboratively exploring how to solve a problem within your group is an interaction that we strongly encourage. But you should write your homework solution strictly by yourself so that your hands and eyes can help you internalize this material. You should acknowledge everyone whom you have worked with or who has given you any significant ideas about the homework. This is good scholarly conduct.

Don't Be Afraid to Ask for Help

Are you struggling? Please come talk to us! We would much rather deal with misunderstanding early on, and we can help. Even if you are convinced that you are the only person in the class that doesn't understand the material, and that it is entirely your fault for having fallen behind, please overcome any feelings of guilt and ask for help as soon as you need it -- we can almost guarantee you're not the only person who feels this way. Don't hesitate to ask us for help -- we really do care that you learn!

Advice

The following tips are offered based on our experience.

Do the homework! The homework are explicitly designed to help you to learn the material as you go along. Although the numerical weight of the homework is not huge, there is usually a strong correlation between homework scores and final grades in the class.

Take part in discussion sections! Discussion sections are not auxiliary lectures. They are an opportunity for interactive learning. The success of a discussion section depends largely on the willingness of students to

participate actively in it. As with office hours, the better prepared you are for the discussion, the more you are likely to get out of it.

Form study groups! As stated above, you are encouraged to form small groups (two to four people) to work together on homework and on understanding the class material on a regular basis. In addition to being fun, this can save you a lot of time by generating ideas quickly and preventing you from getting hung up on some point or other. Of course, it is your responsibility to ensure that you contribute actively to the group; passive listening will likely not help you much. And recall the caveat above that you must write up your solutions on your own. You are strongly advised you to spend some time on your own thinking about each problem before you meet with your study partners; this way, you will be in a position to compare ideas with your partners, and it will get you in practice for the exams. Make sure you work through all problems yourself. Some groups try to split up the problems ("you do Problem 1, I'll do Problem 2, then we'll swap notes"); not only is this a punishable violation of our collaboration policies, it also ensures you will learn a lot less from this course.