Introduction

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Course information

- Course:

  ECE 102 - Signals and systems

- Instructor:

Jonathan Kao
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- Teaching assistants:

Arunabh Ghosh
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- Grading: 50% homework, 20% midterm, 30% final, 2% bonus participation

Course information (cont.)

- Prof. Kao's office hours
  Office: `https://ucla.zoom.us/j/93158374262`
  Hours: Thursday, 12-2pm
- Arunabh's office hours
  Office: `https://ucla.zoom.us/j/4286513946`
  Hours: Tuesday, 2-4pm
- Tonmoy's office hours
  Office: `https://ucla.zoom.us/j/8855338382`
  Hours: Tuesday, 12-1pm, Thursday, 12-1pm
- Guangyuan's office hours
  Office: `https://ucla.zoom.us/j/810985849`
  Hours: Wednesday, 12-2pm

- As detailed later in this syllabus, there will be additional designated Friday office hours during discussion section times.

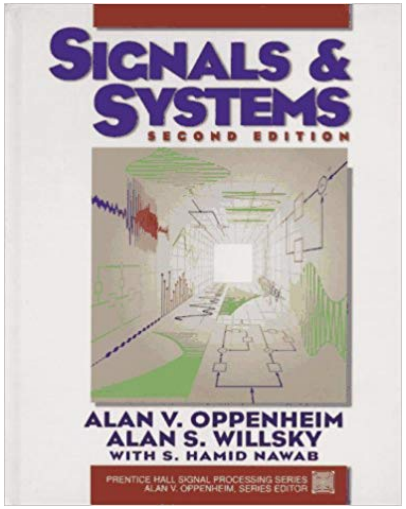
Course information

- The primary ways to get your questions answered are:
  - Post questions to our class's Piazza forum.
  - Come to our office hours.
- You should not e-mail us individually regarding course material questions. If you e-mail us, we will likely respond asking you to post your question to Piazza, unless it is of a unique nature. Posting to Piazza benefits all students by enabling the entire class to see the question and response.
- Piazza will be student-driven. Answers will be primarily provided by other students (see Piazza bonus in grading). The TAs will continuously monitor Piazza to approve student answers and will answer questions that students are unable to answer.
- We cannot always answer e-mails immediately. For example, if the HW is due in less than 24 hours and you e-mail us, though we may try, there is a chance we will not get back to you before the HW is due.
- For questions regarding personal matters (e.g., questions about grades, discussing an extenuating circumstance), please e-mail Prof. Kao directly.
- All other inquiries should be sent to the TAs and myself. Please e-mail all of us concurrently, so that no one instructor is overloaded.

Course information, cont.

- Textbook:

Signals and Systems
by Oppenheim & Willsky



The textbook is an excellent resource to shore up understanding on various materials.

- We will use CCLE for course materials.

Course information, cont.

We currently have 8 discussion sections on Friday, spanning 11am-7pm. We recognize that some students prefer to have an active discussion section with problem solving, while others prefer to watch a video on their own time. Based on this, we propose a plan where we will hold some active discussion sections with problem solving, but the rest of the discussion sections will be used as additional office hours to get more questions answered. This is our plan:

- We plan to designate 3 discussion sections to be active discussion and problem solving, and 5 discussion sections to be additional office hours. These numbers may change based on the student polls. (*Note: most problem sets in this class are due on Friday by midnight.*)
- Every week, a TA will upload a discussion video going over material and practice problems prior to Friday discussion.
- Anyone may view this video, and any additional questions can be asked during office hours.
- A TA will also hold live discussion sections going over material and practice questions with students, taking questions, and having additional dialogue.

Tentative syllabus

Date (2020)	Lecture	Content
05 Oct	1	Class overview & signals
07 Oct	2	Signal operations and properties (O&W, 1.1, 1.2 (cts))
		HW #1 released, due 16 Oct
12 Oct	3	Elementary signals (1.3, 1.4)
14 Oct	4	Systems and their properties (1.5-7)
		HW #2 released, due 23 Oct
19 Oct	5	Impulse response (2.2)
21 Oct	6	Convolution (2.2-3)
		HW #3 released, due 30 Oct
26 Oct	7	Fourier Series (3.0-5, 3.8)
28 Oct	8	Fourier Series II (3.0-5, 3.8)
		HW #4 released, due 6 Nov
02 Nov	9	Fourier Transform (4)
04 Nov	10	Fourier Transform II (4)
		HW #5 released, due 20 Nov
09 Nov	M	Midterm, in class, covering material up to and including 04 Nov
11 Nov	-	Veteran's Day Holiday
16 Nov	11	Fourier Transform III (4)
18 Nov	12	Frequency response (6.0-6.4, 8.0-8.4)
		HW #6 released, due 30 Nov
23 Nov	13	Sampling theorem & impulse trains (7.0-7.4)
25 Nov	-	No lecture (Thanksgiving)
30 Nov	14	Laplace Transform (9.0-3, 9.5-10)
		HW #7 released, due 11 Dec
02 Dec	15	Laplace Transform II (9.0-3, 9.5-10)
07 Dec	16	Laplace Transform III (9.0-3, 9.5-10)
09 Dec	17	Overview
16 Dec	F	Final exam, 3:00p-6:00p

Zoom online lectures

All lectures, discussions, and office hours, will be carried out on Zoom. Lectures and discussions will also be recorded and uploaded to CCLE.

We encourage you to attend lectures live (MW 2-3:50pm Pacific Time), as there will be an opportunity for interaction and asking questions. If you do not wish to appear in a lecture video, because we are recording them for the benefit of all students, we ask that you opt out by not attending.

As per notice by UCLA's Office of Information Technology:

> *Where recording is permitted, it is permitted only by the host (typically instructor or meeting chair). Students in a class and/or meeting participants and any student-hosted meetings are prohibited from recording of any kind.*

Lectures will be held at `https://ucla.zoom.us/j/93158374262`.

Zoom online lectures (cont.)

By default, all students will be muted during live lectures. There are two ways of having questions throughout lecture answered:

1. Raise your (virtual) hand.

   If you are on a mobile device, there is a "Raise Hand" button. If you are on a Desktop, click on "Participants" and then "Raise Hand." If you raise your hand, but you no longer need to ask your question, you can undo the "Raise Hand." When there is a natural breaking point in the lecture, Prof. Kao will unmute students with their hands raised, so that they can ask their question. Note, you will also have to unmute yourself.

2. Through the chat functionality.

   During lecture, you will be able to ask questions seen by everyone, or only by the TAs (Arunabh & Tonmoy & Guangyuan). We encourage you to ask questions seen by everyone, which may benefit others. Do not send chat messages to Prof. Kao, as he will not actively monitor these during the lecture. Arunabh, Tonmoy, & Guangyuan will answer questions over chat.

Zoom discussions / additional OH

Each TA will hold either an additional OH or their discussion session in their meeting room, which will be the same link as office hours.

Arunabh's discussion section will be held at:
`https://ucla.zoom.us/j/4286513946`.

Tonmoy's discussion session will be held at:
`https://ucla.zoom.us/j/8855338382`.

Guangyuan's discussion session will be held at:
`https://ucla.zoom.us/j/810985849`.

Academic integrity

UCLA embraces the core values of integrity, excellence, accountability, respect, and service through the True Bruin program

`http://www.truebruin.ucla.edu`

I take academic integrity very seriously; students caught cheating or violating these principles will face disciplinary action. Please refer to the UCLA student conduct code:

`http://www.deanofstudents.ucla.edu/portals/16/documents/UCLA%20Student%20Conduct%20Code%209-29-14%20final.pdf`

In this class, unacceptable behavior includes plagiarizing the work of others, plagiarizing code, copying another person's exam, and copying solutions from ECE 102 resources from a prior year. In accordance with UCLA policy, any instance of suspected academic dishonesty will be immediately reported to the Dean of Students Office and zero credit will be given for any work determined to be dishonest.

Grading

You will be graded on three components:

1. **Homework (50%)**. Homework will contain both written components as well as `MATLAB` components.
   - Assignments are due (i.e., submitted to Gradescope) by 11:59pm on the day they are due.
   - To accomodate unexpected or unforeseen circumstances, we will give *3 late days* to every student. These late days should only be used in extenuating circumstances. We will not grant additional late days beyond these.
   - You may use **at most** 2 late days on any given assignment.
   - Any assignment more than two days late receives a grade of **zero**.
   - We will drop the lowest HW score.
2. **Midterm exam (20%)**, in class.
3. **Final exam (30%)**, Weds, 16 Dec 2020, 3:00pm-6:00pm.
4. **Bonus participation (2%)**, described on the next slide.

Grading (cont.)

In addition to these grading scales, we will also award bonuses on top of your final grade as follows.

Bonuses (2 points)

- (Feedback) You earn a bonus of $+0.5\%$ for filling out the class evaluation at the end of class.
- (Piazza) You receive a bonus of at most $+1.5\%$ for participating on Piazza. While your answers to others will be anonymous, they will be known to the instructors, who will determine an appropriate number of points for instructor-approved student replies.
- (Piazza, cont.) Please do not conspire to post and answer questions for extra credit. We will be able to detect this. We do not want the Piazza forums to be spammed; this makes it more difficult for all students to find helpful questions.

Exam guidelines during COVID-19

We should all desire fair evaluations and a level playing field. During this time of online instruction and remote exams, it is very difficult for us to prevent cheating on exams, for example, due to collaboration. We will announce, closer to the exam date, any potential further details on exam policies.

In the spirit of making exams fair for all students:

- All exams will be open notes, open book, and you may access notes on your computer. It is only **closed internet.** The TAs and I aim to write exam questions that could not be easily googled.
- The instructors will perform analyses on exam answers. If we suspect students of collaborating on any exam, we will administer an oral exam to suspected students. The oral exam results will supersede the written exam results.

Further exam policy details, if any, will be announced closer to the exam.

Exam guidelines during COVID-19

If you are in a different time zone such that taking the exam during class time would be very difficulit, please e-mail by the end of week 1 so we can plan for this in the future.

Grading (cont.)

The class is graded on an absolute scale, with the following scale:

Final score	Letter grade
93 – 100	A
90 – 93	A-
86 – 90	B+
83 – 86	B
80 – 83	B-
76 – 80	C+
73 – 76	C
70 – 73	C-
66 – 70	D+
63 – 66	D
60 – 63	D-
< 60	F

- Top students in the class will receive an A+.

Grading (cont.)

- The scale may be relaxed, but it will not be made more stringent.
- I will not change your final grade unless I made a calculation error, in accordance with UCLA Academic Senate Regulation A-313 and strict rules governing the integrity of the grading process. Please do not send requests of this nature. I will not reply to emails making such a request.

P/NP and S/U grading

Note that as per:
`http://catalog.registrar.ucla.edu/ucla-catalog20-21-120.html`

> *The grade P is assigned for a letter grade of C or better. Units earned this way count toward degree requirements but do not affect the GPA.*
>
> *The grade S is assigned for a letter grade of B or better, but units earned in this manner are not counted in computing the GPA.*

Last notes

- Up front, I want to say that this class is a lot of work and time-consuming. I believe a lot of learning happens through the HW, and therefore we design these to be thorough and instructive. The HW will likely be difficult and time-consuming, so please do not leave it to the last minute. Please start HW early.
- These notes were constructed from several resources, which I'd like to acknowledge.
  - Prof. John Pauly (Stanford), Prof. Christina Fragouli (UCLA), and Prof. Byron Yu (Carnegie Mellon).
  - In particular, the class structure is informed from these instructors, and I use various examples from their lecture notes in my own notes.