

# SYLLABUS

ECE3 Spring Quarter 2025

Introduction to Electrical Engineering

**NOTE: lectures and labs in this course will be in-person. However, we have some students who cannot come to campus. Therefore, all lectures will be recorded using Zoom and posted on BruinLearn. All lab sections, will be held in-person in Engrg IV 18-132J.**

**Lab Equipment: [Analog Discovery 2](#) units and Project Cars are available at the SEL Loan Desk (Boelter 8<sup>th</sup> floor). Circuit components needed for conducting lab experiments will be made available.**

Instructor: Dr. Dennis M. Briggs

Teaching Assistants: [Tentative] Alexiy Samoylov, Jason Song, Dominic Olson.

Lectures (will be recorded): Monday 8:00 AM – 9:50 AM US Pacific Time in Boelter 3400

Labs (all in Engrg IV 18-132J; all times US Pacific Time):

- (1A) Monday 12:00 Noon-1:50 PM
- (1B) Tuesday, 8:00 AM-9:50 AM
- (1C) Tuesday, 10:00 AM-11:50 AM
- (1D) Thursday, 8:00 AM-9:50 AM
- (1E) Thursday, 10:00 AM-11:50 AM
- (1F) Friday 8:00 AM-9:50 AM
- (1G) Friday 10:00 AM-11:50 AM

Final Exam: June 12, 2025 at 3:00 PM

Office Hours (all times US Pacific Daylight Time):

- Tuesday and Wednesday 6-7:00 PM (**Zoom only**);
- ALSO, other times by appointment.

## Content

The course is an introduction to EE fundamentals. Both theory and hands-on experience are presented to provide technical explanation of (tentative schedule; all in-person plus remote via Zoom for those who are isolating):

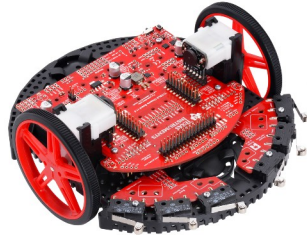
- Lectures 1&2: Circuits
- Lecture 3: Transients; Project Details
- Lecture 4: AC Circuits; PID Control
- Lecture 5: Operational Amplifiers
- Lecture 6: Devices: PN-junction and Logic
- Lecture 7: Systems and Control
- Lecture 8: Telecommunications

–Lecture 9: Instrumentation with Grounding and Power

–Lecture 10: Technology Trends and The Funny Farm

The overall goal is to become familiar with concepts described in lecture, learn about instruments and components, and produce a working design, plus provide a basic understanding of the great EE inventions and those to come. I will be including some historical details during lectures, and talk about current and future trends in EE.

The project is an autonomous path-following mobile robot. Your team will be lent a robot, which you



will program to follow a prescribed path.

After four weeks of normal lab experiments to illustrate equipment and device operation, there will be five weeks to work on the project. Race Day is in Week 10. (It's not really a race; we take times merely for bragging rights). The only requirement for 100% is to finish the track. There will be partial credit for partial completion of the track on Race Day.

### Grades

- Course Evaluation Survey 2%
- Labs 10%
- Project 25% (Success:15%; Final Report: 10%)
- Quizzes 23%
- Homework 15%
- Final Exam 25%

### Quizzes (lasting 10 minutes)

- 2<sup>nd</sup> through 9<sup>th</sup> meeting, at start of class
- “Stop writing and pass your quiz to the aisle.” If I see that you have not stopped writing, I will see that your score is reduced. If you bring your quiz up to the lecture rostrum after I have collected the quizzes, that is a sure sign that you did not stop writing when you should have. This activity has a name. It is called CHEATING.
- Your lowest quiz score will be thrown out.
- There are no make-ups.
- Not attending lectures:
  - If you know that you will miss a lecture for a good reason (job interview, conference, etc.), let the instructor know at least 3 days before the Monday quiz (that would be 8:00 AM Friday) and an alternative will be worked out:
    - Taking the quiz remotely is the first choice. The remote quiz process will be invoked (see below).

- If that is not possible, then you will receive the average of your other quizzes.
- If you are sick and cannot come to lecture:
  - Taking the quiz remotely is the first choice. The remote quiz process will be invoked (below). See the **notification warning!**
  - If that is not possible because you are at Death's Door (or merely feel that way), then you will receive a zero for that quiz. But your lowest quiz score will be thrown out.
  - If you are sick for the lecture, then please do not come to your lab for that week. You will be able to make up the lab at a later date.
  - If the sickness persists for a second week, then the same process is in effect, and you must provide a **real** Doctor's note (NOT the self-generated online Ashe Center note!) documenting your illness. We will deal with both quiz scores on a case-by-case basis.
- Remote quiz process: You **must notify** the instructor of your illness by 7:30 AM on Quiz Day. If you do so, you will receive via email a link to the quiz at the quiz start. You will get the 10 minutes to take the quiz, plus an additional 5 minutes to scan your work (clear image, please) and send it to the instructor via email.

## Project

- Evaluation based on performance at end, and in final written reports.
- Labs and project illustrate concepts presented in lecture

## Textbook/Equipment Requirements

There is no required textbook for this course. Any basic circuits textbook in the SEL stacks (TK 454 is the call #) is good. There are many on-line references as well (be sure that the references you use are authoritative!).

## Grade Distribution

Letter Grade Scheme: Goal is 60% A– or better. Base Percentages will be adjusted to achieve the goal.

BASE PERCENTAGES:

A+	100% to 97%
A	96.99% to 93%
A-	92.99% to 90%
B+	89.99% to 87%
B	86.99% to 83%
B-	82.99% to 80%
C+	79.99% to 77%
C	76.99% to 73%
C-	72.99% to 70%

D+	69.99% to 67%
D	66.99% to 60%
F	59.99% to 0%

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## **Technical Requirements**

**Browsers:** You will need to use a browser as your primary method of accessing this course. The Canvas mobile apps should only be used as a supplement. To learn about browser compatibility with Canvas, visit the [Supported Browsers page](#).

**Calculators:** You should always bring a calculator to any engineering exam. I do not have a spare calculator.

**Mobile Devices:** I do not allow the use of mobile devices during examinations. If I find you using one, you will receive a zero for that exam.

## **UNIVERSITY POLICIES AND SUPPORT FOR STUDENTS**

### **Academic Integrity**

UCLA is a community of scholars. In this community, all members including faculty, staff and students alike are responsible for maintaining standards of academic honesty. As a student and member of the University community, you are here to get an education and are, therefore, expected to demonstrate integrity in your academic endeavors. You are evaluated on your own merits. Cheating, plagiarism, collaborative work, multiple submissions without the permission of the professor, or other kinds of academic dishonesty are considered unacceptable behavior and will result in formal disciplinary proceedings usually resulting in suspension or dismissal. See the Dean of Students website for more information.

[ source: Dean of Students syllabus statement (syllabus) ]

### **Accommodations for Students with Disabilities**

If you are already registered with the Center for Accessible Education (CAE), please request your Letter of Accommodation in the Student Portal. If you are seeking registration with the CAE, please submit your request for accommodations via the CAE website. Students with disabilities requiring academic accommodations should submit their request for accommodations as soon as possible, as it may take up to two weeks to review the request. For more information, please visit the CAE website, visit the CAE at A255 Murphy Hall, or contact us by phone at (310) 825-1501.

[ source: Center for Accessible Education (Faculty Questions) ]

### **Resources for Students**

UCLA provides resources if you are feeling overwhelmed and need personal and/or academic assistance. Please see the [Red Folder](#) for more information.

### **Title IX and Equity, Diversity and Inclusion**

Advocacy and Confidential Services:

Please note that Title IX prohibits gender discrimination, including sexual harassment, domestic and dating violence, sexual assault, and stalking. If you have experienced sexual harassment or sexual violence, you can receive confidential support and advocacy at the CARE Advocacy Office for Sexual and Gender-Based Violence, 205 Covell Commons, Los Angeles, CA, 90095,

care@careprogram.ucla.edu, (310) 206-246 5. Counseling and Psychological Services (CAPS) provides confidential counseling to all students and can be reached 24/7 at (310) 825-0768.

**Reporting and Non-confidential Services:**

Your professor is required under the UC Policy on Sexual Violence and Sexual Harassment to inform the Title IX Coordinator should he become aware that you or any other student has experienced sexual violence or sexual harassment. In addition, You can also report sexual violence or sexual harassment directly to the University's Title IX Coordinator, 2255 Murphy Hall, titleix@equity.ucla.edu , (310) 206-3417. Reports to law enforcement can be made to UCPD at (310) 825-1491.

**Engineering EDI Resources:**

There are a number of specific resources on Equity, Diversity, and Inclusion available to students in the Samueli School of Engineering, including trained faculty officers in each department who can be consulted if you have a question on EDI issues and are not sure where else to turn. Please see <https://samueli.ucla.edu/equity-diversity-and-inclusion> for information.