

## SYLLABUS

ECE3 Fall Quarter 2020

**NOTE: all sections of this course will be held remotely, using Zoom for the lectures, and a combination of Zoom, videos, and CCLE for the labs. Stay tuned for more details.**

Instructor: Dr. Dennis M. Briggs

Teaching Assistants: Xin Li, and Tianyi Zhao

Lectures (will be recorded): Thursday 8:00 AM – 9:50 AM US Pacific Time

Labs (all times US Pacific Time; accommodations will be made for those in time zones where the scheduled lab time is awkward):

(1A Remote) Monday 10:00 AM – 11:50 AM (only if necessary)

(1B Remote) Monday 12:00 Noon – 1:50 PM

(1C Remote) Tuesday, 8:00 AM – 9:50 AM

(1D Remote) Tuesday, 10:00 AM – 11:50 AM

(1E Remote) Thursday, 12:00 Noon – 1:50 PM

(1F Remote) Friday, 8:00 AM – 9:50 AM

(1G Remote) Tuesday, 10:00 AM-11:50 AM

Final Exam: Monday, December 14, 2020, 11:30 AM - 2:30 PM (Accommodations will be made for those in time zones where 11:30 AM PST is awkward.)

Office Hours: Tuesday 100 PM – 2:00 PM, Wednesday 8:00 PM – 9:00 PM, both US Pacific Time, both via Zoom. 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 remote via Zoom):

- Lectures 1&2: Circuits
- Lecture 3: Transients
- Lecture 4: Project Details
- Lecture 5: Motors, Generators, and The Electrical Grid
- Lecture 6: Devices: PN-junction and Logic
- Lecture 7: Systems and Control
- Lecture 8: Telecommunications
- Lecture 9: Energy and Power
- Lecture 10: Technology trends

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.

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.

(see next page)

## **Grades**

- Course Evaluation Survey 2%
- Labs 13%
- Project 50% or 60%, depending on Final Exam percentage (half for project success, half for the Final Report)
- Quizzes 10%
- Homework 10%
- Final Exam 15% or 5%, depending on which yields the higher final score

## **Quizzes (lasting 10 minutes)**

–2<sup>nd</sup> through 9<sup>th</sup> meeting, at start of class

## **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 is good. We will supply a list of on-line references as well.