

CECS 211 - Syllabus
Principles of Computer Engineering I
Fall 2020
Instructor: Eric Hernandez

OFFICE HOURS:	M/W 3:00-4:00 P.M. via Zoom or by appointment
E-MAIL ADDRESS:	engr.eric@gmail.com
COURSE WEBPAGE:	http://www.engreric.com/
LECTURE:	Sec: 3, Class #: 4302, Tue., Thur., 9:30 A.M. to 10:20 A.M. Zoom
LABORATORY:	Sec: 4, Class #: 4303, Tue., Thur., 10:30 A.M. to 11:45 P.M. Zoom

A. DESCRIPTION

This is an introduction to the amazing world of electronics. At the core of all computing and modern devices is the use of electricity to perform meaningful and useful work. This class will focus on the practical application of devices/components and the analysis of circuits to perform this work.

B1. ORGANIZATION

This is a lecture and lab based course in which topics are presented in the lecture and demonstrated in the lab through a series of projects that build upon each other. It is very important that each lab is completed as most labs will rely on the knowledge gained from the previous one. Successful completion of the course is reliant upon completion of the labs.

B2. ONLINE FORMAT

This semester we are continuing in an online format due to the ongoing Covid pandemic. Classes will be done synchronously, meaning that we will meet and be responsible for all course information during our scheduled lecture and lab time.

C. COURSE OBJECTIVES

1. To introduce students to electrical circuits.
2. To learn the operation of electrical devices, components, and circuit elements.
3. To learn the applications of these components and how they work together in a circuit.
4. To build an understanding of how to analyze these circuits.
5. Be able to read and draw circuits using schematics.
6. Be able to design, test and critically analyze circuits.
7. Apply problem solving strategies to various circuit based engineering problems.
8. To be able to form and test hypotheses. This is vital for debugging and troubleshooting.
9. To effectively communicate results using the nomenclature and jargon of the industry.
10. To gain hands-on skills from design to implementation, soldering and making circuits.

D. COURSE TOPICS

Basic Concepts of Electricity	Quantities and Components	Ohms Law
KVL, KCL	Series and Parallel Circuits	Resistance
Capacitance	Inductance	Transformers
Diodes	DC Analysis	AC Analysis
Measuring Instruments	Oscilloscopes	Power Supplies
Soldering		

E. TEXT AND REQUIRED MATERIALS

Grob's Basic Electronics: (12th Edition)

by Mitchel E. Schultz

Modeling Software:

Multisim 11.0 by National Instruments – A free student version is available

LTSpice – Free full version from Linear Technologies

Supplies:

Breadboard, wire and other discrete components (Resistors, Capacitors and Inductors as required)

F. GRADING PLAN

Coursework will be weighted as follows:

1. Quizzes 10% Only the 5 highest ones will be counted.
2. Midterm 1 20%
3. Midterm 2 20%
4. Labs and Homework 25% Late work will lose 5% per **day**.
5. Final Exam 25%

A – 100%-90%

B – 89%-80%

C – 79%-70%

D – 69%-60%

F – 59%-0%

Grades will be curved once at the end of the semester, but you can never receive a grade lower than the scale above.

G. ATTENDANCE

Attendance is vital for success in this class. Quizzes may or may not be announced one lecture before and exam material will be discussed throughout. Attendance may be recorded throughout the semester.

H. CHEATING AND PLAGARISM

Cheating and **plagiarism** will not be tolerated in this course. Any individual caught cheating on quizzes, homework, lab projects, or the final exam will be punished to the full extent allowed under University regulations. Plagiarism on papers or assignments is not acceptable and work that is plagiarized will not receive credit. Plagiarism is considered cheating. Note: any time another person's work is used without giving them proper credit, it is considered plagiarism and cheating.

At a minimum, any student caught cheating will receive no credit for the work concerned, and will receive a reduction of one letter grade from their final course grade.

The official CSULB Policy on Cheating and Plagiarism can be found here:

http://web.csulb.edu/divisions/aa/catalog/current/academic_information/cheating_plagiarism.html

I. TENTATIVE SCHEDULE (Dates may vary due to holidays and project requirements)

Week 1	Chapter 1: Electricity, Chapter 2: Resistors
Week 2	Chapter 3: Ohms Law, Chapter 4: Series Circuits
Week 3	Chapter 5: Parallel Circuits, Chapter 6: Series-Parallel Circuits
Week 4	Chapter 7: Network Theorems
Week 5	Midterm 1 Review, Midterm 1
Week 6	Chapter 7: Network Theorems
Week 7	Chapter 15: Alternating Voltage and Current
Week 8	Chapter 19: Inductance, Chapter 20: Inductive Reactance
Week 9	Chapter 22: L/R Time Constants, Chapter 21: Inductive Circuits
Week 10	Midterm #2 Review, Midterm #2
Week 11	Chapter 16: Capacitance, Chapter 17: Capacitive Reactance
Week 12	Chapter 22: RC Time Constants, Chapter 18: Capacitive Circuits
Week 13	Chapter 23: Alternating Current Circuits
Week 14	Chapter 27: Diodes and Diode Applications
Week 15	Final Exam Review
Finals Week	CECS 211 - Final Exam (refer to CSULB schedule for day and time)

J. CLASS PREREQUISITES (Dates may vary due to holidays and project requirements)

MATH 122 with a grade of "C" or better.

K. COE TUTORING SERVICES AVAILABLE FOR MAJOR CLASSES

The College of Engineering Tutoring Center offers free tutoring for many lower and upper division engineering courses in MAE, CECS, CECM, CHE and EE. Tutors are available Monday through Friday during the fall and spring semesters between the hours of 9:00am-6:00pm in EN2-300.

Visit the following website for detailed tutoring schedules:

http://web.csulb.edu/colleges/coe/views/essc/academic_success/engineering_tutor.shtml#asp_ETP

L. ACCOMMODATIONS:

Students with disabilities who need reasonable modifications, special assistance, or accommodations in this course should promptly direct their request to the course instructor. If a student with a disability feels that modifications, assistance, or accommodations offered are inappropriate or insufficient, he/she should seek the assistance of the Director of Disabled Student Services on campus.

M. SEXUAL ASSAULT, RAPE, DATING/DOMESTIC VIOLENCE, & STALKING

Title IX prohibits gender discrimination, including sexual harassment and sexual misconduct. If you have experienced sexual harassment, sexual assault, rape, dating/domestic violence, or stalking, the campus confidential Victim's Advocate is available to help. Jaqueline Urtez (e: advocate@csulb.edu, p: (562) 985-2668) can provide free and confidential support, accommodations, and referrals for victims without having to report the assault to campus authorities. While students are welcome to discuss assaults with faculty, both faculty and teaching assistants are mandatory reporters who are required to report all incidents of sexual harassment/misconduct to the Title IX office for follow-up and possible investigation. Students who do wish to report the assault for possible investigation may contact the confidential victim's advocate, who can help them through the reporting process, or they can report the assault directly to the Title IX Office by completing an online reporting form at <https://www.csulb.edu/equity-diversity/title-ix> or contacting the Office of Equity & Diversity at OED@csulb.edu.

N. FOOD AND HOUSING ASSISTANCE

Any student who is facing academic or personal challenges due to difficulty in affording groceries/food and/or lacking a safe and stable living environment is urged to contact the CSULB Student Emergency Intervention & Wellness Program. The website outlining the resources available is www.csulb.edu/basicneeds. Students can also e-mail supportingstudents@csulb.edu or call 562/985.2038. If comfortable, students may reach out to the professor as they may be able to identify additional resources.