

# EECE 315: Electronics I

Spring 2011

Instructor: [Dr. Tseng](#)

Prerequisites: EECE 211, EECE 211L

Corequisites: EECE311, MATH 260

## Class Schedule:

Lecture	MWF	12:00 PM - 12:50 PM	LANG 106
Lab 02	F	2 PM – 4:50 PM	OCNL 344
Lab 03	T	11 Am – 1:50 PM	OCNL 344
Lab 04	M	2 PM – 4:50 PM	OCNL 344

## Textbook:

*Microelectronics Circuit Analysis and Design, 4th edition*, Neamen, McGraw Hill

## Topics:

<b>Diodes</b>
Course orientation and introduction
Diode V-I equation/Diode non-idealities
Load lines/Small-signal diode equivalent circuit
Zener diodes, Voltage regulator
"Opto-diodes"
<b>Transistors</b>
Bipolar V-I equations
FET V-I & transfer characteristics
Bias circuit - analysis/design
FET bias circuit - analysis/design
FET & bipolar small signal equivalent Circuit
Amplifier configurations - CE/CS
Amplifier configurations - CC/CD
Amplifier configurations - CB/CG
Bode plots
Capacitor low-frequency effects
Low-frequency design considerations
Swing considerations
Introduction to multistage amplifiers
<b>Feedback Amplifiers</b>
Characteristics/generalized analysis/types of negative feedback
Examples of negative feedback amps
Impedances of feedback amplifiers
Identifying feedback configurations

## Grading Policy:

The lecture grade comprises 3/4 of the course grade and the lab grade is the other 1/4.

**Lecture:** The lecture grade is made up of three exams and homework problems. The three exams and homework problems will each count as 25% of the lecture grade.

**Lab:** This portion will be the average of your scores on the lab reports. **YOU WILL NOT BE ALLOWED TO PERFORM THE LAB EXPERIMENT UNTIL YOU HAVE SHOWN THE INSTRUCTOR THE FINISHED PRELAB.** The prelab will be graded and will be part of your grade for the week's lab. See the separate section for the lab syllabus.

The computer program PSPICE is required for this course. A spreadsheet application program will also be required.

In general it will not be possible to make up missed exams or labs unless arrangements have been made with the instructor **IN ADVANCE**.

### **ABET Requirements for Majors in Electrical Engineering and Computer Engineering:**

The board that accredits our program has imposed some new requirements on us. EECE-315 is used to document to them that you know how to do engineering design when you are due for graduation. Therefore, there will be a separate “sub-grade” calculated for your design and laboratory work. This may include not only the home problems, but also any design-oriented exam problems. If you do not get a passing score on this “sub-grade”, you will fail the course even if you get a passing grade for the course as a whole.

### **Cheating Policy:**

If you are guilty of cheating on an exam or on the homework problems, for the first offense you will get an F on the paper being graded, and for the second offense, you will at least fail the course.

On homework design problems you may work together subject to the following provisos:

1. You must have separate designs. This does NOT mean having all resistors but one with the same value as in your friend's design.
2. Your submission **MUST** list all classmates whose contributions in any way influenced your design.
3. If your design is essentially the same as that of those with whom you worked, your scores will be reduced in proportion the similarity.
4. If your design is essentially the same as that of someone who you do not declare as a contributor, this will be treated the same as cheating on an exam.