EE461G: Introduction to Electronics (3 Credits)

INSTRUCTOR:

Zhi David Chen, Professor, Ph.D.
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Class Hours: MWF 12:00 pm - 12:50 pm, F Paul Anderson Tower Rm. 257

Office Hours: Instructor: E-mail me for appointment, or drop by. In most time, I will be in one of the rooms in ASTeCC: 374, 349, 265. TA: MW 11:00-12:00, Rm. 119 CRMS.

Grading:

Two Exams: 40%
Final Exam: 40 %
Homework: 15 %
Attendance: 5%

The final letter grade will be assigned based on the above profile using the students’ scaled points. 90-100: A, 80-89: B, 79-70: C, 60-69: D.

GOALS:

The objective of this course is to develop the students' ability to understand the basic principle of semiconductor devices and their applications to microelectronic circuits.

PREREQUISITES: EE221

TOPICS:

1. Review of Linear Circuit Theory
2. Nonlinear Circuit Elements
3. Signal Processing with Two Terminal Nonlinear Devices
4. Three Terminal Devices
5. Basic Circuits Containing Three-Terminal Devices

OUTCOMES:

Upon completion of this course students should demonstrate the following abilities:

1. Understand the structures, symbols, DC characteristics, and DC models of diodes, BJTs, and MOSFETs, and the load line analysis.
2. Analyze and design diode-related circuits such as clipping, limiting, and rectifier circuits.
3. Analyze transistor circuits such as inverters and voltage followers.
4. Understand the DC biasing techniques and small-signal modeling of analog circuits using BJTs and MOSFETs.

POLICIES:

Attendance: I believe that attendance is important to assure students’ learning. This is strictly enforced in elementary, middle, and high schools in Kentucky. Although college students are no longer kids, in my past experience there were always some students who missed some classes in some time periods. I understand that students have busy schedules. If students present reasonable excuses, permission can be granted for absence of classes. If a student misses one class, 0.5 point will be deducted from his final total points. The maximum deduction is 5 points.

Homework policy: Homework will be assigned weekly and due the following week at the same day as that when the assignment is issued. The homework is to be turned in at the beginning of the class. No late homework will be accepted except for some strong excuses. Because some homework problems are very difficult, solutions to the homework problems will be posted on my website. For better practice, students should do homework problems first before looking at the solutions. The solutions should be used to help you to solve difficult problems and to verify your answers. Students cannot copy exactly the solutions and otherwise some points will be deducted by TA. In addition, if students finding difficulty in understanding a particular topic or homework problem are encouraged to meet with the TA or the instructor.

Exam policy: There will be two exams and a final exam. Failure to write an exam or test will result in a score of zero. No makeup exams will be given. Upon the receipt of a graded exam, if you find that an exam problem was graded incorrectly, it must be re-submitted to the instructor within 24 hours from the time the exam was returned. It will take 50 minutes for Exam 1 and Exam 2. It will take 2 hours for the Final Exam.

Prepared by Z. Chen 08/21/2017