ECE 310 - Fundamentals of Electronics

Fall 2008

Syllabus

TIME & PLACE: MWF, 2:30-3:20 PM, BEL 205

INSTRUCTOR: Suat U. Ay
Office: GJL 212
Phone: 885-2783
EMAIL: suatay@uidaho.edu

CLASS WEBSITE: http://www.blackboard.uidaho.edu

OFFICE HOURS: MWF, 3:30-4:30 PM, or by appointment, but feel free to stop by anytime.

PREREQS: ECE 212, 213, or a similar course & laboratory with equivalent topics.


SOFTWARE: WinSpice or LTspice

GOALS: To introduce the student to basic physical electronics, electronic devices, and device characteristics. The devices include diodes, bipolar junction transistors (BJT), field-effect transistors (FET), and operational amplifiers (Op-Amp). To provide the fundamentals and basic skills required to analyze (DC and small-signal analysis) and design circuits containing diodes, BJTs, FETs, and op-amps.

GRADING:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
<th>Total Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXAMS (4)</td>
<td>60%</td>
<td>600 points</td>
</tr>
<tr>
<td>QUIZZES*</td>
<td>8%</td>
<td>80 points</td>
</tr>
<tr>
<td>FINAL</td>
<td>20%</td>
<td>200 points</td>
</tr>
<tr>
<td>HOMEWORK*</td>
<td>12%</td>
<td>120 points</td>
</tr>
</tbody>
</table>

* - you must perform at a passing grade to pass the course

POLICIES: You must receive a passing grade for the homework in order to pass the course. You may consult with others on homework, provided submit your attempt at the work only. Homework is late if it is not turned in at 3:20 PM on the day it is due. Homework and exam scores become final one week after they are returned to the class.
ACADEMIC HONESTY: Academic honesty is governed by Article II of the University of Idaho’s Student Code of Conduct http://www.webs.uidaho.edu/fsh/2300.html. Cheating on classroom or outside assignments, including examinations is a violation of this code. Incidents of academic dishonesty will be kept on file by the instructor and may be reported to the dean of students. Such instances of academic dishonesty may warrant expulsion from the course and a failing grade. All students should be aware that even one incident of academic dishonesty may also merit expulsion from the University.

MAKE-UP POLICIES: Only students presenting medical or official university excuses to the instructor will be allowed to take a make-up exam or quiz, or make up other missed assignments. Whenever possible, arrangements should be made with the instructor prior to the regularly scheduled exam or assignment due date. Making these arrangements is entirely the responsibility of the student. Make up exams and quizzes may differ from those given at the regularly scheduled time, and whether an absence is deemed to be excusable is at the discretion of the instructor.

OUTLINE: (tentative)

Chapter 1 Introduction to Microelectronics  
Chapter 8 Operational Amplifiers as a Black Box  
Chapter 2 Basic Physics of Semiconductors  
Chapter 3 Diode Models and Circuits  
Chapter 4 Physics of Bipolar Devices  
Chapter 5 Bipolar Amplifiers  
Chapter 6 Physics of MOS Transistors  
Chapter 7 CMOS Amplifiers

GRADING POLICY: Total points = 1000
At my discretion, I will use a sliding scale. If a sliding scale is used, all scores will be shifted to a higher value (never a lower value) such that the class average is shifted but the standard deviation remains the same. Thus, you may collect 800 points at the end of semester and still get A. The decision whether or not to adjust the grades will be made at the end of the semester.

Grade scale that will be used for total points collected is given below.

<table>
<thead>
<tr>
<th>Total Points</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,000</td>
<td>A</td>
</tr>
<tr>
<td>899</td>
<td>B</td>
</tr>
<tr>
<td>799</td>
<td>C</td>
</tr>
<tr>
<td>699</td>
<td>D</td>
</tr>
<tr>
<td>649</td>
<td>F</td>
</tr>
</tbody>
</table>

ECE 310 - Fundamentals of Electronics