



**EGE323 ELECTRONICS II LABORATORY (1 credit)**  
**LABORATORY SYLLABUS**  
**Fall 2015 Semester**

**1. GENERAL INFORMATION**

Professor: Dr. Julio J. González  
Office: REH 202  
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Office hours: Tuesday: 10:00 AM - noon  
Wednesday: 09:00 AM - 11:00 PM

Classroom and class time: REH210, Wednesdays from 02:00 PM to 04:50 PM

Textbook: Laboratory Manual provided by instructor

**2. DESIRED LEARNING OUTCOMES**

Students working in teams will demonstrate their ability to:

- I. Working in teams, perform and design simulation experiments using “PSpice” and interpret simulation results. Perform and design hardware experiments using “Analog Discovery”, including assembling, troubleshooting and measurement, and interpretation of experimental results.
- II. Initiate into the professional writing of reports on laboratory experimentation. These reports, which address the match between theoretical expectations, simulation and experimentation, will culminate in a design project report.
- III. Become proficient in the use of PSpice software and Analog Discovery hardware/software equipment.

**3. COURSE CONTRIBUTION TO STUDENT OUTCOMES**

This course contributes to the ECE Student Outcomes as explained in the following table:

<b>Student Outcome</b>	<b>Course Desired Student Outcome</b>	<b>Level of Contribution</b> 3/3 = strong; 2/3 = moderate; 1/3 = marginal
b) An ability to design and conduct experiments, as well as to analyze and interpret data	I	3
g) An ability to communicate effectively	II	2
k) an ability to use the techniques, skills and modern engineering tools necessary for engineering practice	III	3

**4. TENTATIVE SCHEDULES FOR LABORATORY SIMULATION AND HARDWARE EXPERIMENTS. SUBJECTS TO BE COVERED**

<b>Lab. No.</b>	<b>Topic</b>	<b>Date</b>
1	Simulation Experiment. .Common Source Amplifier taking into account Early Effect	09/16
2	Simulation Experiment. Current sources and their output resistance	09/23
3	Simulation Experiment. Two-input amplifier: Differential Amplifier.	09/30
4	Simulation Experiment. Two-stage amplifier: Differential Amplifier + Floating to Single-Ended Converter	10/07
5	Simulation Experiment. Two-stage amplifier: DC Shift + Emitter Follower	10/14
6	Simulation Experiment. Designing an Operational Amplifier	10/21
7	Simulation Experiment. Frequency Response of the CS Amplifier	10/28
8	Simulation Experiment. Frequency Response of the Source Follower	11/04
9, 10	Hardware Experiment. Practical Op-Amp Circuit	11/11 11/18
11	Course Design Project	12/02

## 5. LABORATORY REPORTS

Student teams will consist on two students. In special cases, and if previously agreed with the instructor, individual work will be accepted. Every student team must submit one laboratory report per lab. All laboratory reports and the design report must have a standard format, as provided by the instructor.

## 6. GRADING POLICY

### 6.1. Grade Distribution

Lab. 1	5 %
Lab. 2	5%
Lab. 3	5%
Lab. 4	10%
Lab. 5	10%
Lab. 6	10%
Lab. 7	10%
Lab. 8	10%
Lab 9, 10	15%
Lab. 9 (Design Project)	20%
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Total:	100%

<p><b>NOTE:</b> <i>Although your grade will be certainly influenced by your participation in the lab, it will be mainly determined by your understanding of simulation results, analysis, synthesis, etc, <u>as conveyed by your written laboratory reports</u>. Thus your communication skills play an important role in the assessment of your performance, as it will be the case in your future professional career.</i></p>
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### 6.2. Grading discrepancy

In case of grading discrepancy, the student should see the grader within a week from the date he/she receives the graded document. After this period of time has elapsed, grades will not be changed.

### 6.3. Lab. Attendance

Any unjustified absence will affect your grade negatively. *Failing to submit a report for any of the laboratory sessions will signify failing the course.*