University of Michigan
EECS 311: Electronic Circuits
Fall 2008

LAB 0 – INTRODUCTION

Agenda

1 Form groups of two (email groups to xiaobo@umich.edu)
2 Go over lab policies
3 Hand out lab kits (1 per student) – write your name on your kit
4 Determine office hours
5 Lab equipment tutorial (calibration of scope probes, probe attenuation, high-Z mode)
6 Cadence tutorial in 2331 EECS (covering Lab 1 pre-lab assignment)

Lab Policies

Lab Instructor

Bo Xiao
xiaobo@umich.edu
Office Hours (TBD)
Office Hour location: 2433 EECS

Grade Breakdown

Lab 1 Non-Ideal Opamps	15%
Lab 2 Active Filters	15%
Lab 3 Perpetual LED	15%
Lab 4 Single-Stage Amplifier	15%
Lab 5 Three-Stage Amplifier	25%
Lab 6 Differential Amplifier	15%

Lab is worth 30% of the final course grade.

Late Policy

The late policy for the labs are the same as those for the course, pre-labs are due at the beginning of lab. Lab reports are due in lecture. A 20% deduction applies for each day late.

Email contact

I have a filter setup to send all eecs311 emails to a separate folder, please start emails with "EECS311:" to allow the mailing system to sort these out.

Groups

Each student should pair up with one other student for the semester in completing the lab experiments. However, each student will need to hand in their own pre-labs and post-lab

reports (except for Lab 5 report). Please have one person per group email me with the group member names/uniqname by the second lab session.

Lab Reports

Each lab will have a pre-lab, in-lab, and post-lab component. Students should complete the pre-lab exercises prior to beginning the in-lab exercises. Once in-lab exercises are complete, students will demonstrate their working circuit to the GSI, at which time students will be asked to show completed pre-lab exercises. Post-lab exercises may be completed outside of lab hours. On the date the lab report is due, students should turn in completed pre-lab exercises, their check-off sheet, and completed post-lab exercises. Students must complete all labs to receive full credit. Any student who does not complete all labs before the end of the semester will have their final grade dropped by one complete letter grade.

If you are unable to complete your lab work during your scheduled session, you may work in the lab when a lab GSI is holding office hours in the lab. You can check out a proto-board from your lab GSI so that you can keep your circuits assembled between testing sessions. (This will be particularly valuable for the design projects) However, you may also do the labs using the protoboard provided in the lab kit, which can be kept after the semester is over. In your post-labs, you will often be asked to compare two quantities. If so, give the value of each and give the percent difference between the two. If there are several values to compare (e.g., if you are comparing values at several different bias voltages), then use a table. (Tables should be titled and numbered.) When asked a question like, "Why was the measured value different from the predicted value," explain the reason(s) it could or might have been different, *even if you did not see a difference*. This is to help you think of possible sources of problems, even if you do not have a problem yourself. Explain how all values were generated, i.e., were they assumed? Measured? Calculated? For calculations, include all equations used and explain how you obtained the values that go into the calculations (not necessary for fundamental constants). Also, explain your specific measurement technique if there is more than one way to do it, unless it is blatantly obvious. Be sure to draw and label all circuits used in the lab. Label components (i.e., resistors, transistors, etc.) as well as any voltages, currents, etc., to which you refer in your post-lab.

Lab Etiquette

Cleanliness in the lab is important. Before leaving the lab, all components must be returned to the storage bins. Lab stations must also be cleaned up; there are brooms available in the lab. Clean up wire cuttings, cut leads, etc., so that the next group can start with a clean station. If you have any questions about anything—equipment, measurement procedures, etc.— ask the GSI.

Lab Kits

Each student enrolled in the class for credit will receive a lab kit. This kit contains components required for the lab assignments, and will be yours to keep after the class is over. If you lose your kit, you may get a new one for a $50 fee.