

**Massachusetts Institute of Technology
Department of Electrical Engineering and Computer Science**

6.002 – Electronic Circuits

**Lab #0
Handout F00-012**

Fall 2000

One focus of your first tutorial, which we refer to as Lab #0, will be the instrumentation in the 6.002 Lab and its use, good lab practice, and lab safety. Prior to attending that tutorial, you should read the Laboratory Information handout, be prepared to use the Lab equipment to examine simple networks such as those discussed in class so far, and be prepared to ask questions about the use of the equipment and lab safety. Please pay special attention to the EECS Safety Notice contained in the Laboratory Information handout. It should be signed and returned as indicated. It is important for you to do so. If you do not, you will not be able to purchase a lab kit and proceed further.

Tutorials will be held in the Lab, which is within Room 38-500. To get to the Lab, you should take an elevator to the 5th floor of Building 38; note that the closest stairway to the Lab is an emergency exit only. If you are unsure as to your scheduled tutorial hour, or if you can not attend your first tutorial, please see your TA immediately.

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First Tutorial – Lab #0 Notes For TAs

Fall 2000

The purpose of the first tutorial is to familiarize our students with the lab, its equipment, and good lab practice. Additionally, this offers the opportunity to discuss and demonstrate simple electronic circuits such as voltage dividers. It would be worthwhile to discuss at least the following topics during your first tutorial. Feel free to add more topics as you see fit.

- (1) Go over the Lab hours for 6.002. Lab weeks are 9/25–9/29, 10/23–10/27, 11/13–11/17 and 12/4–12/8. Remind the students that this is in the 6.002 Outline and the 6.002 Information handouts. A TA will be in Lab Monday through Friday between 1PM and 5PM to help, to answer questions, and to check off labs.
- (2) Go over lab safety and good lab practice. Read the safety notice in the Lab Information handout before the tutorial to familiarize yourself with the issues of lab safety and practice. Also go over lab security and the need to immediately identify faulty equipment. When notified, the lab staff can usually fix faulty equipment within a day or two.
- (3) Obtain a lab kit from the lab staff for free because you are a TA. Go over the components included in the kit, and discuss how to read them.
- (4) Go over the test equipment: function generator, digital multi-meter, oscilloscope, proto-board and power supply. Discuss what each piece of equipment does and how it works.
- (5) Demonstrate how to use the lab equipment and the lab kit by building a voltage divider driven by the power supply and observed by the multi-meter, and then driven by the generator and observed by the oscilloscope. Make measurements and compare them to theoretical calculations. *Get the students to participate in the lab demonstration by building the circuit and/or making measurements.*
- (6) Go over labs in general and the lab notebook. Mention that all labs have pre-lab exercises, in-lab exercises and post-lab exercises which are all to be completed in the lab notebook with appropriate explanatory notation. Emphasize that pre-lab exercises must be done before coming to the Lab. Explain that the lab notebooks are due in recitation on the Friday after the week of the lab. Finally, add anything that you can think of to make your work grading the labs easier.