

PHY 440 Electronics Laboratory

The electronics laboratory exercises allow you to get first-hand experience with electronics instrumentation that is used in experimental physics today. Your lab time will be busy but should also be fun. There are a few things you can do that will help you succeed in lab, preparing for the lab ahead of time and staying focused during the lab. Here are a few helpful practices and some policies that you should be aware of in order to get the most out of the lab.

- Be sure to read all the procedures ahead of time. Sometimes there are derivations that you can do before you come to lab. Write these out neatly before you come to lab and bring them with you to paste into your notebook. Reading ahead also gives you time to brush up on any of the material covered in the lab.
- Give enough time to the lectures, homework, and lab. The questions asked in the lab often require you to have an understanding of electronics that is deeper than just being able to create a working circuit, more than writing down voltages or rise times.
- Be sure to read through the lab procedures carefully while you are actually in the lab. Sometimes questions you need to answer may be posed in the middle of a paragraph describing the procedure.
- You will be provided with a lab notebook to record your predictions, measurements, and observations. The lab notebook stays in the lab room at all times.
- Enter all relevant data and explanations succinctly, clearly and legibly. The lab notebook serves as a record and reference for yourself, plus the TA needs to be able to read it and follow it.
- An example lab writeup is provided on the course web site.
- Use a pen rather than a pencil. If you make a mistake, simply draw a line through it.
- Any time you are asked to calculate a value or make a theoretical prediction, write down the equation you used and show your work so that you can receive partial credit. If you make a mistake and need more room to write, finish on a different page and make a note which page shows the rest of your calculation.
- Be sure to clearly distinguish theoretical values from experimental ones.
- Write neatly. Your TA cannot give you credit for something he/she cannot read.
- Make sure to double-check the wiring of each circuit before you power it up. In addition, the TA must check every complex circuit and sign off on it before you power it up or take it apart.
- Keep the lab and your work station clean. Put all the components and equipment away after you use them, power off all equipment that you use, and log out of the computer. There is a 2 point deduction for leaving a mess.
- You have 2 hours and 50 minutes for the lab. In that time you need to complete the lab, turn in your notebook and clean up your work station.