

PHY 440 Electronics Laboratory

The electronics laboratory exercises allow you to get a 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 to succeed in the lab, prepare for the lab ahead of time and stay focused during exercises. Here are a few practices and some policies that you should be aware of in order to get the most out of your lab experience:

- Be sure to read all the procedures ahead of time. Often there are derivations that you can do before coming to lab. Write these out neatly before you come to the 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 that is going to be covered in the lab.
- Dedicate enough time to the lectures, homework and lab. The questions asked in the context of lab exercises often require you to have an understanding of electronics that is deeper than the ability to put together circuits or capability to read and write down values of voltages or rise times.
- Be sure to read through the lab procedures carefully while you are actually in the lab. Sometimes the questions you need to answer may be posed in the middle of a paragraph describing the procedure. Do not miss them!
- You will be provided with a lab notebook to record your predictions, measurements, and observations. The lab notebook stays within the lab room at all times.
- Enter all relevant data and explanations succinctly, clearly and legibly. For one, the lab notebook serves as a record and reference for you. Second, the grader needs to be able to read the notebook and follow your work.
- Example of a 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 indicating which page shows the rest of your calculation.
- Be sure to clearly distinguish the theoretical values from experimental ones.
- Write neatly. The grader cannot give you a 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 Laboratory instructor 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 (out of 20) for leaving a mess.
- You have 2 hours and 50 minutes for each lab. Within that time you need to complete the exercises, turn in your notebook and clean up your work station.