HOW DO YOU WORK IN THE LABORATORY?

Establishing truth in engineering involves doing a successful experiment. The experiments that follow are designed so that you can see clearly what happens and reach unambiguous conclusions about the subject matter at the end of each experiment. Here, briefly, are the elements.

1. **Preparing**. In order to finish each experiment in just three hours you'll need to look at the subject matter before you come to lab. Read over the lab notes before you come into the lab and bring with you the completed pre-lab.

2. **Satisfying your curiosity**. Take a look at the equipment you'll be using in today's lab. Sometime, look at the other equipment in the lab, to see what else is there that you might find interesting. Take a look at the written materials in the lab — such as electronics parts catalogs, small booklets from ELECTRONICS suppliers.

3. **Tinkering**. Years ago, people who selected engineering as a career had done a lot of tinkering as youngsters. It seems that far fewer engineering students today have had that experience. This lab is places where you can try out some things those aren't required. But check with the lab instructor before trying anything that might be hazardous.

4. **Observing**. Sometimes people have discovered important new phenomena by noticing an unexpected small change on an oscilloscope trace or meter indication. Get in the habit of observing closely in the lab.

5. **Working together**. As in most of industry, teamwork in this lab is encouraged — in fact, it's required! If you're on a team, you have other people to "bounce ideas off", and there's more than one source of ideas. Three-person teams are best but all of you should contribute equally.

6. **Taking data once**. Take data directly on your lab sheets. Don't waste time prettying up your data.

7. **Drawing conclusions**. The lab sheets ask you to state your conclusions before you leave the lab. Savvy students think about what conclusions are likely before coming into the lab, during the lab preparation stage.

8. **Having ideas and inventing**. People invent all the time, particularly if they are by habit observant and thoughtful. Past students have come up with interesting ideas that the instructors hadn't thought of. Let your lab instructor know.

9. ~~**Making a lab book a legal document**. Common practice in industry is to sign and date every page of your lab notebook, and to have another worker witness and~~

~~date the pages. You're asked to do a version of that here in order to develop the habit.~~

10. **Learning from your lab instructor**. Chat with the lab instructor. Ask questions. Try out interesting ideas that you get. And you might want to find out about the lab instructor's own interests and goals.