LAB OVERVIEW

Each lab is conditioned to train you up for a small part of your final project. For each lab you will need a new partner, and an ongoing notebook. You must get in the habit of recording notes and observations not just to help yourself out at 2am but to prepare you for future patents and research. We will spot check these physical notebooks throughout the class.

Lab Hours
TAs and Tutors will be in lab (BE113 and BE115) for check-offs and questions the following times:
- Monday 12-2pm
- Tuesday 2-4pm
- Wednesday 4-7pm
- Thursday 2-4pm
- Friday 1:30-3:30pm
- Sunday 4-7pm

Pre-Labs
For each lab we will give you 2-4 days to do the pre-lab work. You will prepare yourself for the active lab and set out a plan for how you will achieve it. Do the pre-lab fully and it WILL save you time in the lab. You may begin the lab once you do the pre-lab, however wait for in-class TA notifications of when the lab is set-up and schedule around these.

Pre-lab will consist of:

- **Scheduling**: When you first choose your partner, write out a predicted schedule for the lab. Each lab will take you 15-45 hours. Schedule for 20-30 (4-5 hours chunks) and pre-determine when you might need to have more time. The standard safety factor for new engineers is a task will take 2x-3x the time you expect. For very experienced engineers it is 1.3x. This is why good engineers 'pad their schedules.'

- **Read the lab material and any reading suggested.** We guarantee the time it takes to read the material will reduce your time in the lab: the book was written by the Stanford professors who teach the graduate version of this class.

- **Set up software or do any training recommended.**

- **Outline your plan for the in-lab procedure during the pre-lab using circuit diagrams, drawings, state diagrams etc.** Spend the extra time here as it will not only help you mitigate mistakes on your lab but set up for good procedure on the final project and for future engineering jobs. Effective Documentation is an excellent communication tool not only to your teammates but to yourself at 3am.
Lab

We have two lab rooms BE113 and BE115 and 24 stations at which to work. All the software you need is there and we expect you will use the lab computers to complete most of the pre-lab and lab.

We expect you to complete all in-lab tasks with your partner. Do not split up the lab. Schedule it so you can be in the lab with your partner 80-90% of the time.

You can be in these rooms 24/7. However the TAs and Tutors do pretend to have lives so they only guarantee to be there for posted lab hours. However, post to Piazza if lab gets crowded with people awaiting check-off and they might appear like fatigued fairy godmothers.

Resources are low and You do not have to do the lab in order. Reading through the lab you will see all the labs contain disparate parts. You do not need to do the parts in order. We are working to extend our resources but we do not have enough for everyone to work simultaneously: take advantage of free times (the am hours) and less crowded workstations.

Labs will consist of:

- **2-5 procedural parts that may or may not be linear.** These procedures can be found on the website.

- **Check off at each part:** You need to present your work to a TA or Tutor to check-off. They will evaluate your work and sign-off your sheet.

- **Lab Write up:** This is where you summarize what you did in your lab, the results you saw and the mistakes you made. You will also attach your lab check-off to the lab write-up and update the difference between your scheduled time and actual time spent on lab.

- **Partner Evaluation:** This is submitted in a form at the end of the lab. Each partner does one separately