Some Advice on Junior Lab

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What You Should Learn in 8.13

- A different set of physics skills than many of you have developed so far.
- To deal with the frustration of things that don't always work.
- To work effectively with a partner.
- To analyze what you have done and write up your results in a concise and cogent manner.
- To present your results orally in a limited time and in a way that captures your audience's interest.
- The latter two are essential skills in any professionand may well be the most important things you learn in 8.13.

Getting Started

- This is an 18 unit course: 6 hours/week in the lab and 12 outside. (These are not overestimates!)
- Find a good partner. Your, and your partner's, success in 8.13 depends on it.
  - Make sure you and your partner can coordinate schedules and work together efficiently.
  - Support your partner by coming to class prepared.
- Partnerships need to be formed by next Monday (9/16).
- The first ("practice") experiment starts next Wednesday.
- Get a copy of Bevington. Not cheap, but a book you should keep for the rest of your career.

Section Organization

- Each section has an even number of students ≤ 16.
- Some sections are more crowded than others:
  - Each section has a faculty instructor and a graduate and an undergraduate TA.
  - The Junior Jab lecturer (Sean Robinson) and technical instructor (Emily Edwards then Regina Yopak) will be available in all sections.
  - You will get more help in a smaller section.
- Contact the lead instructor (Litster) if you want to switch sections.
- Sections must be formed before the first experiment.

Web Information

Start with the 8.13 web page `http://web.mit.edu/8.02t/www/` and spend some time exploring what is there.

- You should read "Policies and Procedures" – top left link.
- You should read "Introductory Experiments", a link under the EXPERIMENTS link of the top menu of the home page.
  - The preparatory assignment for each experiment is important, especially for the three introductory experiments.
- Each experiment has its own web page under the EXPERIMENTS link with a plethora of useful information.
- The 8.13 CALENDAR has a link in the top menu bar.
- Some things (this presentation, for example) are available under the HANDOUTS link in the top menu bar.

Experiments

- If you need it, extra time to work on experiments is available Fridays bteween 10:00 and 4:00.
- Use the sign-up sheet in 4-361 to reserve time (3 hrs max) and equipment.
- Never work alone (i.e., as the only person in the lab)—this is for safety reasons. There is more safety information in the 8.13 "Policies and Procedures".
- One of the introductory experiments and every main experiment requires you to do an individual written report and oral presentation. These are private: you, partner, instructors.
- At the end of the course you will give a public presentation (APS style) on one experiment you choose.

Papers and Presentations

- The oral presentations must take place within 10 days of the last lab period for the experiment. Oral schedules will be posted under the ORALS link of the 8.13 home page.
- I recommend you learn to use *beamer* for your presentations. It is a Latex package and this presentation was prepared with it. There is a tutorial at

  `http://web.mit.edu/rsi/www/pdfs/beamer-tutorial.pdf`

  and a user guide under the "Reports and Presentations" link on the 8.13 home page.
- The written paper is due the midnight following the oral; there is a 10-point grade penaly for each 24 hour delay. Any exceptions must be negotiated with your section instructor.
- You will use Latex to typeset your paper. There is a template and lots of other information under the "Reports and Presentations" link under the 8.13 home page.

Grading

- Attendance/Lab Performance – 10%
- Laboratory Notebooks – 10%
- Preparation Problems – 10%
- Four Private Oral Presentations – 30%
  - Split between partners (but not along theory/experiment).
  - Only 15 minutes!
  - Make use of Writing Program assistance.
- Written Reports – 30%
- Final Public Oral – 10%

Homework Today

- Find a Partner.
- Look a “Policies Procedures” and read “Introductory Experiments” on web site. Explore the web site.
- Start the preparatory questions for the introductory experiments and think about what you will do as your four “for real” ones.
- Start learning Latex, Beamer(?) and Matlab.
- Star reading Bevington (1st three chapters).