

## Physics 440 (ILab) Policies and Procedures

### I. Grades:

Your final course grade consists of the following:

Initial and final presentations (combined)	45%
Manuscript	30% minus 1% per day late
Lab work/citizenship	20%
Each exercise	5%

"Lab work/citizenship" includes such factors as participation in the experiment, ability to work with your group in the lab, and your participation in reviewing presentations and editing drafts prepared by other group members. "Exercises" are the additional exercises that will be assigned (data plot/fitting, uncertainties, etc.).

Interpretation of letter grades:

- A: In addition to doing a good job at everything explicitly required, showing extra initiative such as (a) finding relevant scientific literature beyond those we provide (*e.g.* citable sources such as journals or arxiv, not just 'googling'), (b) developing new and improved ways of carrying out the projects, or new types of measurements or (c) developing and implementing innovative ways of analyzing data, etc.
- B: A good job at all required parts of course: Strong presentations, solid lab work, effective group participation, readable and logical manuscripts turned in on time. You should demonstrate an understanding of the relevant physics (and get help from the instructors when you are having difficulty), do the asked-for background reading, and get such results as the lab apparatus is capable of producing.
- C: All required course elements are done on time (presentations and manuscripts), but less-than-optimal results are obtained owing to such factors as failure to read the literature, failure to consult with group members prior to presentations, difficulty working with others, failure to ask the instructors for help when needed to understand the physics or data analysis, etc.
- D: Seriously late manuscripts, half-hearted and hastily-prepared presentations or manuscripts, thorough lack of group participation, etc, can result in this unhappy grade.
- F: Will result from failure to produce any of the major course obligations such as presentations and manuscripts, or failure to participate in the lab.

### II. Collaborations and Intellectual/academic honesty:

When you encounter difficulties understanding a project or the readings, we fully expect you to get help from the instructors or other faculty who have the answers or from the web or literature databases. This is how research is done and how the course is set up. Of course, *contributions from outside your group must be acknowledged* and attributed in your presentations and manuscript by an endnote or footnote or bibliography.

Discussions with your fellow students outside your group: **you may not read or otherwise use the work of your colleagues in other groups.** For example, you may not view other group's manuscripts even if you find the electronic files yourself. You are also prohibited from asking for or listening to a one-sided description of the key parts of a project. This is a central part of academic honesty.

You may, however, have discussions with your fellow students about the data and the experiment, provided that the discussions are reasonably two-sided and do not consist of one person's simply transferring information to the other. This might require some judgment on your part. If you have questions about the acceptable limits, please ask an instructor.

### III. Presentations:

For all scheduled presentations, you will have a choice between a laptop + projector or transparencies. Each method has its own merits:

**Laptop+Projector:** This requires that you (1) bring a laptop computer, either your own or borrowed, and (2) that you bring an up-to-date printout of all of your slides *on paper*, so that if there is a technical failure you can quickly photocopy them to transparencies. These will also be useful for writing notes. *Technical glitches will not be accepted as an excuse* for omitting data or poor presentation. If you are in doubt, use transparencies. (3) We recommend that you avoid movies and graphics with low information content; they often distract the audience and make the talk less effective.

The disadvantages of projectors are the difficulty of copying graphics from published articles, and the time needed to write formatted equations and to draw schematic sketches.

The advantage of projectors is that it's easier to present plots and other information, and then pass it on a partner for the manuscript or final presentation.

**Transparencies:** The advantages are the ease of making sketches and showing graphics from published articles (simply by photocopying). Color can be added with color pens, which ILab provides. The ILab printer can print to transparency film in grayscale.

Whichever method you use, you must include the necessary equations and plots. You may show data and images from other people's work, but you must **attribute** it.

### IV. Computers in ILab

Several Windows-XP machines and one Macintosh are provided for your use. You may use these machines at any time and for any ILab related purpose, including literature searches, data acquisition and analysis, and preparation of presentations or manuscripts. The machines have USB ports and each is connected to the monochrome printer in the lab.

You **may not install or download any software** of any kind (executable or not) that is not related to academic activity. Moreover, you may not download or install any **executable** file of any kind, for any reason, without the express permission of an instructor. You may not play music or check email during ILab class time, except as needed to communicate with your peers about ILab matters.

### V. Laboratory Notebooks

It is the group's shared responsibility to see that detailed notes are taken, which is very important for accurate reporting of results. Taking lab notes is occasionally laborious but it inevitably pays off later, such as when writing the FP and MS.

Whenever you add to your note, please write the date, project name and student names.

Original lab notes should be taken directly in the provided lab notebooks and stored in the file cabinet between class times. Please use this notebook instead of transcribing notes from other pages. If you make errors, simply cross them out and rewrite. Sketches are excellent things to include. Tape extra material (*e.g.* graphs and data tables) into the notebook as a convenience and a guard against computer failure. Include units, computer filenames and, especially, written descriptions of what was done and what was observed (even qualitative).

Many times, good notes have rescued a group from having to repeat an experiment. (And there have been many times when sloppy or incomplete notes led to a need to repeat an experiment.) As a guide, ask yourself the following question: 'If I look at this lab notebook 6 months from now, will I be able to figure out what we did?'

At the end of each lab period, the group must show its notes to one of the instructors and have the instructor initial them.