2013

161-07 introductory Physics Lab I

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Introductory Physics Lab I
PHYS 161-07
R 12:30-2:10; LND 201

Instructor: Amy Bosch **Office:** LND 106
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Office Hours: Monday 9-10, Tuesday 12-12:30, Wednesday 12-1; Thursday 9:30-10. I am not on campus on Fridays.

This goals of this laboratory course are to
A. supplement the lecture material, as well as learn topics not covered in the lecture.
B. utilize analytical and quantitative skills to design experiments and test theories
C. practice presenting data in written form.

Courtesy: Please leave your cell phones, i-Pods, etc. turned off during class. Food is not permitted in the lab.

Lab Notebook
Keeping a good record of what you do experimentally is a good habit to get into for any scientific endeavor. For this course you will need to have a composition notebook to record data. It should be dedicated to this lab only. Here you will record all the values measured in the experiments, as well answers to questions and other notes. Sketch any graphs you made, at least showing the axes and shape of the curve.

Lab Quizzes
Each lab will start with a short quiz on the experiment you are about to do. Reading the handout and completing the pre-lab assignments will help. The handouts are a very good study guide. Each quiz will take only a few minutes, and so if you arrive late you may miss it. Coming to class late or unprepared is unfair both to your partner and the other students in the class. These quizzes will evaluate how well you understand the experiments and the underlying physics content.

Mid-Term Exam
This will measure your general experimental lab technique, as well as your understanding of the experiments and physics. You will be allowed use lab data in your Lab Notebook for part of the test, so be sure to bring this notebook with you.

Final Exam
For the lab final exam, you will need to perform and analyze an experiment. This will not be something you have done, but will use some of the same techniques. You will work in pairs to complete the experiment, and then separate for analysis and to answer questions.
Because this test the experimental methodologies developed throughout the semester, it is somewhat difficult to study for, by design. Rather, be sure you understand the experimental and analytical methods you use throughout the semester, as you do them. Do study the techniques used in each of the semester's labs in preparation.

Lab Reports

Your lab report should tell a good story. This is not just about getting the right answers, it is about clearly expressing them in an organized, cohesive way. Your lab report should not be too long; a paragraph for the abstract, another for error sources, and data tables and calculations along the way usually suffice.

You will find Lab Report Guidelines attached to this syllabus.

Lab reports have definite due dates, usually the beginning of the following lab period. Lab reports turned in late will be penalized about one letter grade. **No reports will be accepted more than one week late; a zero will be given for the assignment.**

Grading:	Lab Quizzes	20%
	11 reports or post-lab assignments	50%
	Mid-Term Exam	15%
	Final Exam	15%

A = 93-100% A- = 90-92% B+ = 87-89% B = 83-86% B- = 80-82% C+ = 77-79%,
C = 73-76% C- = 70-72% D+ = 67-69% D = 60-66% F = 0 – 59%

Laboratory Schedule

Date	Experiment
Aug. 29	Introduction
Sept. 5	Motion and Graphs
Sept. 12	Acceleration^{R}
Sept. 19	Forces and Vectors
Sept. 26	Projectile Motion
Oct. 3	Newton's Second Law^{R}
Oct. 10	**No Lab**
Oct. 17	**Mid-Term Exam**
Oct. 24	Centripetal Force^{R}
Oct. 31	Work and Energy
Nov. 6	Momentum & Impulse^{R}
Nov. 14	Momentum in Two Dimensions
Nov. 21	Rotational Motion^{R}
Nov. 28	**No Lab**
Dec. 5	Density
Dec. 12, 12:30-2:20	**FINAL EXAM**

The instructor reserves the right to alter this syllabus if circumstances dictate.