SUNY Geneseo
Department of Physics and Astronomy
Class: W 12:30 pm; ISC 220
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General Physics I Laboratory
(Phys 114-07)
Fall 2024

What am I doing here? In this lab, we will be doing experiments to learn about "mechanics" (the motion of objects). The overall arch of the course is for you to gain skill and understanding with the way scientific, quantitative *measurements* are made, and to understand and be able to quantify the limitations of those measurements. Some of the learning outcomes include improving your ability to perform experiments, your understanding of the scientific principles involved in each experiment, your ability to analyze and interpret quantitative data (including the ability to quantitatively determine uncertainties in results and measurements), your ability to use scientific equipment (rulers, watches, cameras, scales, etc.), your ability to maintain a proper scientific logbook, and your ability to write proper scientific summaries of your work.

How will I be graded? As with Analyt I Lab, your grade is relatively independent of how well your lab results match the "predicted" results. Instead, your grade will be determined by:

Lab Quizzes (weekly):	30%	
Weekly Assignments (abstracts, worksheets):	40%	
Lab Notebook and Excel:		10%
Lab Final	20%	
	100%	

Attendance is required at all labs, and you will not be permitted to submit work for labs that you didn't attend (including both parts of any two-week labs). In addition, your grade will be reduced by one full letter for each lab you skip (e.g., a B- will become a C-). You will be permitted to make up labs if you have a documented, legitimate reason for missing lab (like a documented illness, a religious conflict, a military obligation, or a varsity sports commitment).

Late submissions will lose 10% of their value per day.

The quizzes are actually take-home assignments that are due at the **beginning** of each lab. They are intended to insure that you have *read and understood* the appropriate sections of the lab manual before coming to lab.

To a large degree, your grade on assignments will be based on the evidence of the effort you put into them (as opposed to "getting the expected value"). While writing your assignments, you must work independently of others, including any lab partners who worked with you during the experiment. The use of Artificial Intelligence (for example, ChatGPT) is completely forbidden. Also, while you and your partner will have different Excel files, it is expected that you will collaborate *during* the experiment so that they both contain the same measurements and basic results. Assignments are due at the beginning of each lab.

Your lab notebook is a record of what you did during the lab, and it is expected to be updated minute-by-minute *as you perform your labs*. Your lab notebook will be graded in a personal "interview" approximately three times during the semester. The interviews will be unannounced, since you are expected to maintain your notebook continuously throughout the semester. The grade for your notebook will be substantially affected by whether your prior lab information is complete. Neatness is of far less importance, so you should never delay completing your notebook "when you can do it more neatly" later. If you pursue a career in science, you will find that completing a logbook at a time different than the events it records is a common example of scientific

fraud in industry settings. Print and review the grading guidelines above as a way to check yourself weekly for proper content (those guidelines will be the basis for your notebook grades).

As part of your "notebook" grade, you will be expected to submit an electronic copy of your Excel document from the previous week's lab. The grade will be based on completion, organization, formatting, whether it agrees with your partner's data, and yet is unique and not merely copied from your partner. Excel submissions will be made using a Google dropbox, and are due at the beginning of each lab.

Schedule

Every week, you will have at least 3 things due. Sometimes, you will have 4:
- a paper take-home pre-lab assignment/quiz (due at the beginning of lab).
- a paper worksheet from the previous week's lab.
- an electronic copy of your Excel document from the previous week's lab.
- (Occasional): a paper abstract describing the previous week's experiment.

Date	What are we doing?	Abstract due?
September 4, 2024	Week 1: Uncertainty	
September 11, 2024	Week 2: 1D Free Fall	
September 18, 2024	Week 3: 1D Inclined Plane	
September 25, 2024	Week 4: Force Table, Part I	**Abstract from Lab 2 (1D Kinematics)**
October 2, 2024	Week 5: Force Table, Part II	
October 9, 2024	Week 6: 2D Trajectory Motion	
October 16, 2024	*No Lab: Fall Break*	
October 23, 2024	Week 7: Newton's 2nd Law, Part I	
October 30, 2024	Week 8: N2L with Friction	
November 6, 2024	Week 9: 1D Collisions	**Abstract from Lab 5 (Newton's 2nd Law)**
November 13, 2024	Week 10: Rotational Inertia	
November 20, 2024	Week 11: Oscillations	**Abstract from Lab 7 (Rotational Inertia)**
November 27, 2024	*No Lab: Thanksgiving Break*	
December 4, 2024	*Lab Final Exam*	