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PHY-121 GENERAL PHYSICS I LAB

Dr. Liz Boatman

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Locations & Times:

Section	Time	Instructor
001	M 1:30-3:20 pm	Darsa (TAs: Anna and Zane)
002	M 3:30-5:20 pm	Liz (TAs: Maheemah and Lawrence)
003	M 6:30-8:20 pm	Darsa (TAs: Jack)
004	T 1:30-3:20 pm	Liz (TAs: Zane)
Tutoring	Sun-Thurs 7-9 pm	Gather Town [Link and password on Moodle]


Location	Gather Town [Link and password on Moodle] <i>In person</i> ☺ : Olin 217	Backups: (1) Zoom (2) Google Meets [Links and passwords on Moodle]
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Materials and Resources:



Lab Manual and resources:
(Linked through Moodle)

GENERAL PHYSICS I
PHY-121
LABORATORY MANUAL
FALL 2020
GUSTAVUS ADOLPHUS COLLEGE



PREPARED BY:
LIZ BOATMAN
DARSA DONELAN

PHY121 General Physics I Lab

Title of Experiment: Sample Lab Date: Today:

Name	Role	Number of times in role
Student 1	Manager – You are responsible for ensuring the work gets done correctly and that everyone contributes equally.	1
Student 2	Experimentalist – You are responsible for running lab software and collecting data.	1
Student 3	Archivist – You are responsible for writing answers to group questions, collecting answers to individual questions, and submitting the final document.	1
Student 4	Skeptic – Your job is to think critically about the decisions the group is taking, question assumptions, and make connections to physics concepts.	1

Try to make sure everyone has equal opportunities to do each role. If you are in a 3-person group, the manager and skeptic will be the same student.

What is the question? (Note: this does not have to be written in the form of a question; this is just what you should ask yourself as you write it.)

- A sentence stating the purpose of the lab to be performed.
- A few sentences describing (in your own words) the principle of physics you are investigating. Equations can be included as necessary.

What is my hypothesis?

- Based on the purpose and physics of the experiment, what is your assumed outcome of this experiment and your reasoning behind your assumption.

What materials and supplies do I need?

- A few sentences describing what equipment, materials, observation methods, and/or software you plan to use in your investigation.

How will I test my hypothesis?

- A brief description of what was done to accomplish the objective of the lab.
- This does *not* have to be step-by-step, but important steps that are vital to reproduction of the experiment should be noted.

What did I observe?

- Data is complete and is presented clearly in tables and graphs.
 - All proper units, significant figures, and error are included.
 - Figures are correctly completed with title, labeled axes, units, fit, error bars, captions, etc.
- A sample of all calculations used is presented in a neat orderly fashion with the results clearly presented.
 - All formulas and units are present.

What did I learn?

- The conclusion includes a discussion of the results and cites specific evidence.
- The validity of the experiment including experimental error (e.g. t-test) should be included.
- All analysis questions in the manual are answered.

How can I make my design better?

- Suggest methods of improvement.
- What would you do differently if repeating the experiment?

Grading:

Assessment Plan:

- [20% of total grade] Weekly pre-lab quizzes (due 30 minutes before lab)
- [80 % of total grade] 7 standards per lab writeup (see template)
 - Group members (3-4 students) share the group's score
 - Due at start of next lab

Grading Scheme	Score
Got it solidly!	4
Mostly got it. (Understanding of the experimental process and written well, but sometimes make small mistakes or get confused by subtleties.)	3
Making progress. (Understand the experiment somewhat, but still have misconceptions, gaps in knowledge, or make serious mistakes.)	2
Starting out. (Know a little bit about the experiment, but writeup is not sufficient.)	1
Nothing yet. (Have no idea what is happening.)	0

Grades: Average of all standards			
3.50 – 4.00	A	2.00 – 2.24	C
3.25 – 3.49	A-	1.75 – 1.99	C-
3.00 – 3.24	B+	1.50 – 1.74	D+
3.75 – 2.99	B	1.25 – 1.49	D
2.50 – 2.74	B-	1.00 – 1.24	D-
2.25 – 2.49	C+	< 1.00	F

We have the right to adjust thresholds should this system prove too lenient or harsh in practice.