

Syllabus

Course:	PHYS 170L, Section 9, Mechanics, Spring 2018
Lab Schedule:	Wednesday, 3:30 - 6:20
TA:	Alex Dvornikov
Email:	olexiy@hawaii.edu
Office:	WAT421
Office Hours:	Wednesday, 10:30 - 12:20
Website:	http://go.hawaii.edu/j5u
Text:	Harris, General Physics Laboratory I: Mechanics: Physics 151L and 170L, 2nd Ed. (https://he.kendallhunt.com/product/general-physics-laboratory-i-mechanics-physics-151l-and-170l-ebook)

Learning outcomes:

- To understand the scientific method and report results in a scientific way.
- To reinforce concepts from lecture.

Preparation:

- Use a notebook and a pen.
- Read the lab manual for the upcoming lab.
- Bring a calculator (or a laptop).
- Wear closed shoes.

What to expect:

- The lab starts with a 15-minute quiz, followed by a 20-minute lecture.
- For the remaining time, the students conduct the experiments in groups of two.
- If you finish the experiment, work on the write-up.
- Make sure the TA signs off on your data.

Format of Report:

- Start with the experiment's title and your partner's name.
 - **Objectives:** The purpose of the lab (2 or 3 lines).
 - **Notes:** Write any derivations of formulae used in this experiments as well as assumptions made to modify these formulae.
 - **Procedure:** Write each step of the experiment and sketch the apparatus.
 - **Data input:** Tables, graphs. Tape printed graphs to your write-up.
 - **Calculations:** Transform your data into results. Write the formulas and explanations for their use. Do not forget **units**.
 - **Final Results:** Write all your final results as follows: result \pm uncertainty.
 - **Discussion of errors:** Discuss the systematic and statistical errors.
 - **Conclusion:** Explain whether the experiment fulfilled its objectives.
 - **Questions:** Answer the analysis questions.

Grades: 60% Labs, 40% Quizzes. Curved over all sections.

Lab reports:

- Data that was not signed off by the TA will not be accepted.
- Reports must be handed over at the beginning of each following lab.
- Penalties for late reports: 1 week - 15% off. 2 weeks - not accepted.

Quiz:

- A 15-minute quiz will be given every time.
- Prepare by reading the relevant chapters from your manual.

Cheating:

- No cheating and copying is allowed. This includes copying data from another student.
- The groups will collaborate to conduct the experiment and also to start the initial analysis in the lab room together. However, the final analysis has to be conducted individually.
- No collaboration for quizzes.
- A student who was caught cheating would be given a zero for that lab/quiz (may also lead to a direct fail of the course).

Late Policy:

- This lab has a strict late policy. Missing parts of the lecture can potentially result in safety hazards and damaging behavior to the equipment.
- It is within the discretion of the TA to decide if a late student will be allowed to conduct the experiment or fail the experiment.

Missed Labs:

- To receive full credit, a student must inform (email) the TA before or immediately after the missed lab. The student is responsible for arranging for a make-up experiment.
- If the TA was not contacted on the same day and the student cannot produce a doctor's note or any other evidence the lab cannot be made up. In this case, the student receives 0% for the experiment.
- A total of **two** make-up experiments is allowed. Any further misses, will result in failing the course. Special circumstances requiring to soften this rule should be brought to the attention of the TA as soon as possible and will be decided on a case-by-case basis. The lab will be either made up in the other section of the TA or with another TA.
- In case of scheduling conflicts, it is the student's responsibility to make time for the make-up experiment. It cannot be expected that the TA will conduct the experiment exclusively with the student on their own time. Special arrangements will be found for missing a lab in the last week of the semester.
- Making-up of missed labs will be in the same week or by the following week. If a student is excused for a longer period special arrangements will be decided on a case-by-case basis. This should be brought to the attention of the TA as soon as possible.
- **Only one lab can be missed without making it up to be able to pass the class.** This will result in a 0% score for both quiz and report. A second lab that is missed and not made up (see rules for make-ups above) will result in failing the course.

Schedule

1/17	Intro	108
1/24	Vectors	108
1/31	Errors	108
2/7	Darts	108
2/14	Pendulum	108
2/21	Air Track	110
2/28	Collisions	110
3/7	Energy	108
3/14	Rotation	108
3/21	Oscillations	110
3/4	Driven Oscillation	108
4/11	Drag	110
4/18	Air Spring	108