

Athabasca University

PHYS 200: Introductory Physics I

Lab Component (Rev. 7)

The lab is a mandatory component of the PHYS 200 course and it is worth 20% of your final grade. The six experiments in this home lab are meant to go with the course material and may be conducted in the place of your choice.

Equipment and Materials

The lab component is designed to provide quality hands-on physics experiments, which utilize the widely available smartphones, in addition to some common household items. A computer that runs Tracker software is required for data analysis, and also for the production of lab reports.

Software

- [Tracker](#) software.

This is an open-source video analysis and modeling tool used in the lab to make accurate video analysis of moving objects.

Lab Report

Lab reports are an effective way of communicating important information, and their use is stressed in this course. There is little point in doing a wonderful experiment with great results if you cannot effectively communicate your method and findings to others. Although you have some freedom in preparing your lab report, make sure to include the following sections:

- Cover Page
- Introduction - Provide a concise theoretical background.
- Procedure - Describe your procedure in your own words.
- Pictures - Include clear pictures of your setup.
- Data - Organize and present the data you collected in the experiment.
- Analysis and Discussion - Give clear and detailed analysis of your data as described in the manual. Make sure to include sample calculations, especially for new calculated columns in data tables. You may also need to produce graphs and perform appropriate fits. Error analysis and a discussion of measurement uncertainties should be provided.
- Conclusion - Present a brief summary of your findings and results.
- Questions - Provide detailed answers to the questions at the end of the lab.

Course Evaluation

Your final grade in PHYS 200 is based on the marks you achieve in two tutor-marked assignments, six lab reports, and two invigilated examinations. **You must achieve at least fifty per cent (50%) on the final examination and on the lab component, and an overall course grade of at least fifty per cent (50%) to pass the course.** Students who do not achieve a minimum passing grade on the final are allowed to write a supplemental examination. There is a fee for this service

The following chart summarizes the evaluation activities and their credit weight.

Activity	Credit Weight
Assignment 1	10%
Assignment 2	10%
Lab Report 1	3.0%
Lab Report 2	3.4%
Lab Report 3	3.4%
Lab Report 4	3.4%
Lab Report 5	3.4%
Lab Report 6	3.4%
Midterm Exam	20%
Final Exam	40%
Total	100%

Lab Safety

Appropriate care should be taken due to moving objects and other potentially hazardous situations and materials. The level of risk involved in doing these labs is comparable to that of day-to-day activities and care has been taken to avoid suggesting activities which produce hazards.

It is your decision to proceed with any experiment, and in making that decision you control your own situation and assume any risks involved. It is your responsibility to act in a responsible manner to avoid hazard to yourself or members of the public.

The authors, Athabasca University, or any equipment supplier cannot be held liable for the consequences of any action undertaken in association with these laboratory exercises. If you cannot safely do these labs, please withdraw from the course.