

Physics 131—Physics I: Mechanics LAB
Section 2L, Tuesday 8:00 – 10:45 a.m.
Section 3L, Tuesday 1:15 – 4:00 p.m.
Lab Report Checklist, Spring 2026

Reporting Results: Report your results along with their uncertainties and units. The uncertainty is typically rounded to only one significant digit, and that the mean itself is rounded to the same number of decimal points. (If the uncertainty digit would be a one, it is common to give two digits for the uncertainty, as in the third example.) Examples:

- $(9.72 \pm 0.04) \text{ m/s}^2$
- $(10.3 \pm 0.2) \text{ m/s}^2$
- $(9.55 \pm 0.15) \text{ m/s}^2$

Comparison with Expected Results and Reporting Significance: To compare a theoretical value x_{theory} with an experimental value with uncertainty $x_{\text{expt}} \pm \sigma_x$, it is useful to state how many uncertainties away the result is, *i.e.*

$$\text{significance} = \frac{x_{\text{theory}} - x_{\text{exp}}}{\sigma_x}$$

We will interpret the significance as follows:

$$\begin{array}{ll} |\text{significance}| \leq 1 & \text{values } \textit{agree} \\ 1 < |\text{significance}| < 3 & \textit{unclear} \\ 3 \leq |\text{significance}| & \text{values } \textit{disagree} \end{array}$$

Things to check before submitting your lab report

- Have you included the names of all members of your lab group?
- Have you included your data?
- Have you included any relevant calculations?
- Have you included graphs/fits of your data where relevant?
- Are the axes on your graphs properly labeled?
- Have you included uncertainties whenever possible?
- Have you compared measurements and predicted values using those uncertainties?
- Have you clearly stated whether your measured value and predicted value agree or disagree?
- Have you answered all the questions in the lab manual?
- Have you discussed sources of uncertainty?

Turn off all equipment and log off the lab computer when you are done.