**Lab 1: Error Analysis and Orientation**

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***Abstract*** *Start by stating the main topics or physics concepts utilized in this lab. Include how those were used for the particular questions formulated in the lab writeup. Example of a good abstract for 216:*

*“This report covers the general theory behind error estimation and error propagation. Using the tracking camera the length and width of a rectangle is measured repeatedly as it moves over the table, and these measurements are used to compute the average length, width, and respective uncertainties. Furthermore, the total area of the rectangle and its uncertainty is computed by error propagation and compared with individual measurements. This exercise provides an idea of the uncertainty associated with the tracking camera.”*

***Keywords:*** *keyword 1, keyword 2, keyword 3... (no more than 5 keywords)*

1. **Introduction**

Explain here the goal of the lab and the general theory and physics concepts needed to achieve it. Include major equations to be used in your analysis. It should take from a few paragraphs to half a page.

1. **Experimental Procedure**

Explain here the experimental procedure, including all necessary pictures. It should take at least a few paragraphs depending on the lab

1. **Results and Analysis**

Explain here the results and compare them to expected values from theory, and include any plots or histograms necessary. It should take from a few paragraphs up to a page.

1. **Conclusions**

Add here your conclusions about the work and provide a short summary of the experiments and results.

**Guidelines:**

* The length of your paper should not exceed 3 pages.
* Make sure there is an abstract, introduction, experimental procedure, results and analysis, and conclusions sections, using this template.
* Please use visual breaks (whitespace) between sections, figures, tables, etc.
* Do not change margins or font type from what is on this template.
* Use formal writing and standard language
* Avoid hand-drawing pictures and diagrams, or pictures of hand-drawn diagrams.
* Figure captions should be below the figure as shown in Figure 1.
* Table captions should be placed above the table as shown in Table 1.
* Equations should be numbered to the right as shown in Equation 1 below.
* Please refer to all figures, tables, and equations in the text.
* Figures and tables are typically left justified or centered. Equations are always centered.

Figures and tables can be placed by themselves or next to each other to save space. When placing together make sure that the figures/tables are still big enough to be readable.

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| Figure 1: Description of this figure | Figure 2: Description of the middle figure |

Table 1: Description of this table

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| Text | Font size in table 11 | Text |
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Make sure equations have numbers so you can reference them in the text.

Equation 1

where is the quantity of interest, and is the exponent. Make sure you define each variable in the equation and the font of the variable in the text must be the same as that in the equation.

**Remove the “Guidelines” section and the example figure, table, and equation before submission.**