# Lab grading guidelines

Any lab report should include the following components, in this bulleted order:

1. **Pre lab discussion, Procedures & Sketch**
   1. Captures discussion presentation, discussion, and questions.
   2. Clear procedures that could be repeated without other instructions.
   3. Sketch showing the basic materials and set up of the lab (may require more than one sketch).
2. **Data table (hand written, with titles and units)**
   1. First row of the data table has the name of the variable being measured with the units (in parenthesis).
   2. First column is the independent variable, second is the dependent.
   3. When required by the procedures, table has columns for multiple trials and average.
3. **Scatter plot (w/ labels, values, reasonable grid)**
   1. Scatter plot has a title that describes what is being presented (not just the variables).
   2. Vertical (y) and horizontal (x) axes are labeled with concept name and units.
   3. Scale is set to show (0,0), any negative values, and the y-intercept. The grid is set so there are enough horizontal and vertical lines to be easily read but not so many as to make it cluttered.
4. **Best fit line (with equation and R2 value)**
   1. Best fit line crosses the vertical axis (to show the y-intercept).
   2. Equation of line is shown on the graph.
   3. R2 value is shown on the graph.
5. **Scientific equation of model (math equation)**
   1. “y=mx+b” or “y=ax2+bx+c” is ‘translated’ into the scientific model (equation):
      1. y and x are replaced by the symbols of the experimental variables.
      2. m, a, b, and c are replaced with numbers that have the correct units.
6. **Written description of model**
   1. A sentence or two that includes:
      1. An explanation of whether the relationship is linear, exponential, inverse, etc.
      2. A description of the meaning of the numbers in the equation (e.g. “the slope is the velocity”).
      3. A description of the “b” in the equation and whether it should be zero, based on the experiment.
7. **Conclusions**
   1. Include reflection on introductory discussion and any Focus Question developed therein.
   2. If the experiment has a comparison to a known value, show your percent error.

## Helpful hints:

Did you proof-read your lab? Did you swap with a friend to have her/him proof-read it? Did you spell check any word processed portion?