

Grading Rubric for Physics Laboratory Reports
Gary Latshaw, Ph.D.

Grading Rubric for a Major Report:

Item	Pts
GENERAL STYLE	<i>P/F*</i>
1. Report is typed and concise: 7+ pages.	
2. Title with Correct Experiment Number and date that the experiment occurred.	
3. All pages have header with your: name (last, first), course name, section number, college, and date.	
4. All pages have footer with page number and maximum number noted (e.g., 3 of 4).	
HYPOTHESIS	5
1. Clear statement of the hypothesis. Example: "The measurement of air pressure in a closed container as the temperature is changed will decline linearly and zero pressure will correspond to absolute zero."	5
PROCEDURE	15
1. One to three page discussion of the process used. May make a numbered list. Diagrams are usually needed to make this complete, but diagrams must have captions as described subsequently.	5
2. Text MUST REFERENCE ALL FIGURES. The reference might only be a simple statement in the body of the text such as "Figure 1 shows the apparatus used to measure the pressure as the temperature was changed. As seen in the figure the temperature was changed by heating the ice/water mixture with a heating pad."	5
3. Equipment sketch. Sketch must be labeled such as "Figure 1. Diagram of Gas Chamber with Pressure Gage and Temperature Control". Note the "Figure 1" AND the text caption. They both must be present.	5
RESULTS	15
1. One to three paragraph discussion of the results. In almost all cases, you will need to create a table or two for this section. Problems encountered should be discussed. I expect this formal experiment to have 15-30 measurements in order to support a strong statistical analysis.	5
2. Text must have reference to the table as indicated above.	5
3. A table is included that has a table number and caption. Example: "Table 1 - Temperature and Pressure Measurements"	5
THEORY	10
This section should present any theoretical result that is expected. In most experiments, it will be appropriate to derive the expressions used. Any equations used should be numbered and discussed in the text. The use of the Microsoft Equation Editor is encouraged, but neatly handwritten materials are acceptable.	10

***P/F means pass/fail based on these simple formatting standards.**

Grading Rubric for Physics Laboratory Reports
Gary Latshaw, Ph.D.

ANALYSIS	25
1. A discussion of the various types of errors that may have entered the experiment and an estimate as to the magnitude that they effected the analysis should be stated. An excellent report will include an error propagation analysis (see manual).	5
2. One to three paragraphs indicating how data was analyzed. Equations used in that analysis are presented. Equations should be numbered and referred to in the text just like the tables and figures. The experiment should use statistical techniques outlined in the manual to assess whether the errors can be accounted for by zero-mean, normal errors.	15
3. As appropriate, more discussion about possible outliers that were excluded in the calculations of m, SD, and SE.	5
4. As appropriate, do an error propagation analysis to explore both systematic and random errors.	
CONCLUSION	30
1. First sentence succinctly states the hypothesis and whether it was substantiated. Such as “The hypothesis that the pressure-temperature apparatus could accurately reveal absolute zero was shown to be correct within expected experimental errors.”	10
2. The next sentences elaborate such as “The absolute temperature was found to be –250 C where the accepted value is –273.15 C. This in an error of 23.15 C or 2.3%, which is well within acceptable accuracies.” You must include measured and theoretical values in your conclusion. DO NOT depend on the reader extracting the values from tables or graphs.	10
3. You should summarize the results of your statistical analysis in the conclusion. If there were significant systematic errors, this should be explained in detail.	10
REFERENCES	
Any material reproduced from other students or taken from an outside source such as a picture found on the web must be given proper attribution – that is the original creator must be identified.	Pass*

*Failure to properly give attribution will result in failing the assignment.