

## Grading Rubric for Physics 266

Full lab reports will be graded out of 25 points using the following rubric.

Component	Points	Description
Identifying Information  2	-2	Missing multiple of title, author, lab partners or date
	-1	Missing title, author, lab partners or date
	0	Report contains title, author, name(s) of partner(s) and date of experiment
Abstract  4	-4	No abstract is provided
	-2	Abstract doesn't provide a summary of the paper.
	-1	Abstract is incomplete in describing what was done, principle results or conclusion, OR contains extraneous or overly detailed information
	0	Abstract is a <i>succinct</i> summary that in a few sentences provides an overview of what was done in the experiment, the principle results, and conclusion.
Introduction  2	-2	Does not provide goals, physics principles, or relevant previous work/reference material
	-1	States incomplete goals, physics principles, or reference material
	0	Identifies goals of the lab, summarizes the physics principles involved (including equations to be used), and briefly discusses relevant information from previous work or reference material.
Experimental Procedure  3	-3	Missing description of what was done
	-2	Reads as instructions rather than what was <i>done</i>
	-1	Significant information missing from description
	-1	Incomplete OR long/unfocused description
	0	Description of procedures used to collect and analyze data is sufficient for a reader to understand and repeat key elements of experiment without being excessively long or including unimportant details
DATA: Presentation  3	-3	Report lacks any (some important) measured and/or calculated values presented numerical or graphically
	-1	Data that would be better presented in a table is presented in text or lists
	-1	Units missing on all/some numerical values that should have units <sup>1</sup>
	-1	Uncertainties missing on all/some numerical values that should have units
	-1	Numerical values presented without any indication of what they are.
	-1	Excessive (meaningless) numbers of digits provided for numerical values
	0	Sufficient data and calculations presented, identified, and results presented in appropriate units, with the correct number of significant digits and uncertainty values

<sup>1</sup> Units and identifying information are preferably provided in column headings (and in some cases row headings as well), when numerical values are presented in tables.

Component	Points	Description
DATA: Graphs  3	-3/-2	Missing all/some graphs needed to support the report's conclusions. <sup>2</sup>
	-1	Axis of graphs do not legibly identify quantities, including units
	-1	Errors in formatting graph such as using lines for discrete data points or markers for fits, omitting error bars for quantities that have uncertainties, poor choices for scaling.
	0	All needed graphs are present, are completely labeled, are scaled appropriately, and use good choices for markers, lines, and error bars.
DATA: Analysis  3	-3	No description of the analysis
	-2	Description of analysis confusing and difficult to understand
	-1	Description of analysis incomplete or contains irrelevant information
	-1	Errors in calculations
	0	Description of calculations, including appropriate equations, adequately describes what was done
Conclusion  5	-5	No results or conclusions
	-4	Results and conclusions vague/incomplete and do not really discuss the specific results of the lab
	-2	Does not compare numerical, calculated, theoretical and/or simulated results
	-2	Does not identify possible sources of discrepancy OR attributes them to non-specific causes such as "human error".
	-1	Errors in comparing or interpreting comparison of results
	-1	Introduces data/results for first time in conclusion section
	0	States the main result of the experiment, compares numerical result to expected/theoretical value in terms of measurement uncertainties, and identifies likely causes of any discrepancies
Miscellaneous  0	-25	Significant parts of the report are plagiarized (derived from another work without crediting original author)
	-15	Report is based on data not taken by the author (without prior permission)
	-10	A significant amount of the report is derived from another person's work even if credit is given
	-3	Report not written in a professional manner: poorly organized/structured, uses slang or informal English (including contractions), and/or changes voice/tense
	-1	Report contains grammatical and/or spelling errors
	0	Report is well written and organized, is based on original work, and proper credit given to any parts taken from or derived from another's work
	+1/+2	At instructor's discretion, bonus points may be given to reports that clearly exceed expectations
Total Possible  25		

<sup>2</sup> If there are multiple data runs that are quite similar, it is only necessary to include a representative sample.