Labs 08 and 09 – Rotational Motion

Group Lab Records/Report Scoring Rubric (100 pts total)

	Excellent (2)	**Limited (1)**	**Missing (0)**
General Clarity	1. Names of all students. 2. Experiment name & date. 3. Course and section #. 4. Organization and neatness.	A couple of the parameters are missing or submissions are disorganized, difficult to read.	Multiple parameters are missing or submissions are highly disorganized or difficult to read.
	Excellent (4)	**Limited (2-3)**	**Missing (0-1)**
Calculation for theoretical value for I_{beam}	1. Equation selected from Table 1 in pre-lab is appropriate. 2. Shows enough **detail** for calculation so it could be repeated. Includes **units**.	A couple parameters are missing.	A significant amount of detail is missing.
	Excellent (6)	**Limited (3-5)**	**Missing (0-2)**
Calculation for experimentally determining I_{beam}	Clearly shows **calculations** for finding experimental value so it could be easily repeated by others. Includes units.	A couple parameters are missing.	A significant amount of detail is missing.
	Excellent (2)	**Limited (1)**	**Missing (0)**
Comparison of experimental and theoretical values	Appropriate comments are provided regarding the rationale behind why the two may differ.	Rationale behind differences is not provided.	A significant amount of detail is missing.
Brainstorm Factors	Complete list of factors is included.	List is limited.	List is missing.
Experimental Set-up	Includes a **screenshot** of the experimental set-up; *essential* features are included and **labeled**.	Some features and/or labels are missing.	Screenshot is missing.
Experimental Design Templates (2 pts each)	Two completed **design templates** are included (contains research question, IV, DV, CV with values, hypothesis, and prediction).	A couple parameters are missing or provided detail is limited.	Significant number of parameters missing or too little detail provided.
	Excellent (3)	**Limited (1-2)**	**Missing (0)**
Data Tables (3 pts each)	Organizes measurements into a neat table, labels values, units included.	Some measurements are missing; labels/units missing.	Data table is missing.
Estimation of Uncertainties	1. Gives uncertainty estimates for each type of measurement. 2. Describes how uncertainties were determined.	Several uncertainty values or the description of how uncertainties were determined are missing.	A significant number of uncertainty values or description is missing.
Graphs with Error Bars (3 pts each)	1. Includes graph; labels axes (units) 2. Includes x and y error bars (indicates if too small to be seen).	Labels with units are missing; some error bars are missing or are incorrect.	Graph is missing.

	Excellent (3)	Limited (1-2)	Missing (0)
Trendline Equation(s)	Trendline equation and R2 value are included on all graphs, as warranted.	Trendline equation or R2 is missing for some graphs.	Trendline equation and R2 are missing on graphs.
Experimental Mathematical Models (3 pts each)	Writes the 2 experimental mathematical models in terms of the IV and DV and includes a description about the relationship.	The model is written in terms of x and y, or a description of the relationship is missing.	A significant amount of the requested information is missing.
Claims	A claim about the relationship between the IV and DV is included next to the graph.	Claim does not include reference to supporting evidence.	A significant amount of evidence is missing or claim incorrect.
Conditions of Claims	Conditions under which the claims hold are clearly stated with the claims.	Essential details about the conditions are missing.	Conditions are not included with the claim.
Assumptions	Assumptions in regards to the claim are included with the claim.	Essential details about any assumptions are missing.	Assumptions are not included.
Tables and Figures are Labelled	All templates, tables, graphs, etc. are labelled using standard headers w/numbers, such as, "Fig 1. Graph of T vs Mass".	Several labels on data tables, graphs, or other figures are missing.	A significant number are missing.
Theoretical Model	Identifies the correct theoretical model for this investigation.	The theoretical model is not entirely correct.	The theoretical model is missing.
	Excellent (5)	**Limited (1-4)**	**Missing (0)**
Compares Experimental and Theoretical Models (5 pts each of 2 questions)	1. Discusses what each coefficient and constant physically represents for this experiment. 2. Discusses what may account for differences in values in models and actual measured values in lab.	The model is written in terms of x and y, or a description of the relationship or possible physical meaning of the constants is missing.	A significant amount of the requested information is missing.
	Excellent (3)	**Limited (1-2)**	**Missing (0)**
Research Question	Research Question is restated and both variables that were tested are mentioned.	Not all variables included.	Missing entirely.
General Claim (3 pts each experiment)	Describes how each of 2 experiments led to separate claim about a given IV. Mathematical models are included in the discussion.	One of the IVs is not discussed; models not part of discussion.	Missing entirely.
	Excellent (10)	**Limited (1-9)**	**Missing (0)**
Confidence in Claims and Models	Thorough discussion of why a reader should feel confident about the group's reported claims and models. Includes as many of the factors from Figure 4 as make sense for this discussion.	Some essential components from Fig. 4 are missing in the discussion.	Missing entirely.
Lack of Confidence in Claims and Models	Thorough discussion of why a reader might question the group's reported claims and models. Includes as many of the factors from Figure 4 as make sense for this discussion.	Some essential components from Fig. 4 are missing in the discussion.	Missing entirely.