PHYS 163 Oral Presentation Rubric (40 points total)
Attendance and participation on data acquisition day (+7 points if yes, -15 points if no).
Attendance and participation on presentation prep day (+7 points if yes, -15 points if no).
Time limit penalty: within 10-12 minutes (unless other limit pre-approved) or lose up to 5 points.
Expect a 10% deduction if you are not routinely using the equation editor and making your own figures.

Show a title slide with all your names and cool image. Cite any internet images in 14 pnt font on bottom of slide. Immediately move to a goal slide stating the major question(s) you hope to answer. No more than three questions please. At the end of talk, remind us of what you asked and summarize the answer to the question. Consider cut and paste of goal slide **with %uncertainty vs %difference added in**. A %difference is only meaningful if you also express the limitations of your apparatus/equipment/experimental design (%precision or %uncertainty). If the *shape* of plot or general trend of data is roughly correct there is *qualitative* agreement. If %diff is less than or approx. equal to %uncert there is *quantitative* agreement. State questions you were unable to answer definitively. Propose further experiments to answer those. Give general suggestions/advice for what I might ask of future students. I will pay close attention to your suggestions as I want to improve. (5 points)

Appropriate introduction/theory/procedure: clear, concise, and complete explanation of how your apparatus worked and supporting theoretical equations. Clearly state what your theoretical equations predict about the behavior of your apparatus. A lot of times it is nice to show a figure of your device (or short video) here. To complement the photos or videos, it usually, but not always, helps to include a simplified schematic drawing that ties the pictures to the theoretical equations. Please, no list of equipment. Show pictures or videos and describe instead. In general, use as few *words* as possible on your slides so people *listen* instead of *read*. For *equations* include starting principle (i.e. BS law, Ampere's law, Faraday's law), show what goes in for a line or two, skip all the ugly details and get to the final result. The final result is the thing you used as a theory model in your plot. Note: *know* your derivation *well* even though it is not all typed up on the slides as I ask questions to see if you know your stuff. (8 points)

Appropriate data collection/plot: Modify the default axis labels/limits/color schemes to enhance the size/clarity/understanding of plot. Stretch all plots to full screen. Plot formatting exception: MATLAB contour plots should maintain correct aspect ratio (if the data was taken over a square region, make sure the plot looks like a square). For axis labels in talks I will allow you to use unitalicized words instead of instead of italicized variables (but you must always include units). Include comparison of experiment to theoretical predictions as well as explain interesting features, trends, significant sources of error (with rough estimates of % error), etc. Were there any surprises? Is data in good *qualitative* agreement with theory (shape of trendline or predicted trend roughly in line with theory but data has large errors)? Is data in good *quantitative* agreement with theory (do >70% of data points have smaller % difference than % error)? Is your data ambiguous (are the errors too large to make any clear statement about agreement with theory)? Does your data disagree with theory (usually this means some other theory you have yet to learn about is in play…)? (8 points)

Overall feel of the presentation: Includes but not limited to the following: group members appear to understand what they are talking about, talk appears practiced several times, stay within time limits, everyone participates equally, respond to questions well, able to operate technology, etc. (5 points)

Possible penalties not explicitly stated previously: ✓ means done well × means done poorly

Italics for variables (check graph labels!!!)		Plenty of photos to keep it interesting	
Use equations editor on all variables (even in figures, ok if not inserted on graph labels)		Words on slides used sparingly (explain your pictures/equations/graphs by speaking)	
No italics for units		Videos used sparingly/appropriately	
Fonts size visible (check graph axis and numbers)		Eye contact (look at the *students*, not the *instructor*)	
Fewer than three fonts used		Volume (can we hear you in the back?)	
Color schemes good		In theory derivations, show/explain initial physics equation, 1-2 key/tricky/subtle steps, then final result, reveal one step at a time using animations Should be easy to follow without every gritty detail.	
Figures large			
Citations used when referencing others work/images			
Animations help organize, do not distract			

Other…anything else in the talk done particularly well or poorly?