

## **Magnetic Fields Formal Lab Write-up**

This report is worth *20 points* toward your lab grade (in addition to the regular 10 points for doing the lab and pre-lab). The purpose of the report is to practice writing scientific papers. When a scientific paper is submitted to a journal for publication or to someone you work for, it must be written following specific guidelines. Your grade will be determined by how well you follow the guidelines (5 points), spelling and grammar (5 points) and the content of the paper (10 points). Any paper that receives a score lower than 15 points will have the opportunity to be corrected and resubmitted for grading. On the second try – the maximum score will be 15 points.

### **Guidelines:**

Your paper should include the following headings in the order listed:

### **Title Page**

The title page should include the title of your paper, your name, and the date.

### **Abstract**

The abstract should be a brief summary of your paper (not more than 200 words). Someone should be able to read your abstract and determine if your paper contains the information they are interested in reading about.

### **Introduction**

This section should introduce your experiment and what you hope to find out.

### **Theory**

In the theory section should be a derivation of the basic equations you plan to use in the discussion section as well as how a compass works, something about the earth's magnetic field and a discussion of Biot-Savart. It need not be more in depth than what is found in your book, but please don't copy from the book without proper acknowledgement.

### **Methods**

Methods section should clearly describe your experiment, equipment and set up. This is where you will include a picture of the apparatus (section 1 of the lab handout). Someone should be able to read this section and repeat your experiment without the actual lab handout.

### **Results**

This is where you include data tables, graphs, calculations and formulas

### **Discussion**

The discussion section is where you discuss the meaning of the results and how they relate to the theory. This is also where percent error in your measurements is reported.

### **Conclusion**

What was the point of the experiment and did you achieve the results you thought you would? How could it be improved? What were the error sources and how could they be minimized.

**References**

Properly formatted references to any material you used to help you with your write-up. Minimum would be your textbook.

**Actual lab results pages**

This is where you attach your actual lab handout for grading. Just the normal stuff you turn in every week.