Physics 231: Fundamentals of Physics (Electricity and Magnetism)
Nielsen 510

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Office Hours: Tutorial Center (Nielsen 201 - 203). Tuesday: 11:30 to 12:30 or by appointment.

Course Materials:
Contemporary Introductory Physics Experiments by Dr. James Parks
ISBN: 978-0-7380-3083-8

* Principles of Physics Laboratory–Electricity and Magnetism:*

Laboratory to accompany Physics 231. Experimentation - investigate basic electronic circuitry and electromagnetic induction.

* Attendance:*

Attendance at all laboratory sessions is required. If you miss a session, you will get zero for this lab. I may make exceptions and give you a make up session if I am convinced that you were ill, had a death in the family, or were involved in a similar emergency. If you are late to a lab session for more than 10 minutes, you are not allowed to perform the experiment and you will get zero for this lab, unless other arrangement has been made. Students are responsible for all information that is given in class.

* Make-ups:*

The last week is usually reserved for make-ups and/or a lab final. Usually only one (but no more than two) make-up experiment is permitted. Because of end-of-term
pressures it is better to avoid needing any make-ups. If you know in advance that you cannot attend a particular lab session, speak to your instructor. It may be possible to do the experiment at some other time.

* Preparation:-

Before each laboratory you are expected to read the experimental write-up and any related sections of the text so that you are familiar with the theory and the experimental procedure. As it is often impossible to have the laboratory come after the relevant material has been discussed in lecture, you will often have to read ahead in your textbook. If the write-up has prelab questions, these will be collected at the beginning of the lab period, graded, and returned with your laboratory write-up.

* Why Write Reports?

Reports are a primary means of communication between engineers and other professionals, so being able to write reports that clearly convey technical information is essential to the professional life of an engineer. The report's organization shows the reader how well the writer understands the material and how much thought has been put into it. In writing the report, keep in mind the type of reader and the purpose of the report.

* The Report:

Your lab write-ups are to be turned in at the beginning of the following lab session. Use the following as a guideline to topics in the lab report:

a. Title: (1) The name of the experiment, (2) your name, (3) the name of your lab-partner, (4) the course name and number, (5) the name of your lab instructor, (6) the date the experiment is performed, and (7) the date the report is submitted. Make sure the partners listed on this page are those with whom you performed the experiment.
**Purpose and method:**

1. This should be short: a paragraph or two describing what measurements were made and for what purpose. You are trying to show that you understand the relationship between the experimental procedures and the theory. This can sometimes be fairly obvious or simple and may only take a sentence or two. Procedural details should not be given, unless they are in some way original or non-standard.

**Data:-**

2. Data which is tabulated should include units and uncertainties. It is much easier to grade your notebook if you also present an analysis table. For example: Suppose you measured a voltage V (with error) and a distance r (with error) and tabulated them in your data table. Next, you decide to plot V^2 versus 1/r^2. You should extend the table to show V^2 and 1/r^2 (with the propagated uncertainties) before plotting. Also, a sample calculation is requested to demonstrate how you obtained the table entries (one is sufficient).

**Grading System:**

Lab Report ....................................................80%
Quizzes ..........................................................20%
Lab reports are worth 100 points and are to be turned in one week after the experiment is performed.

**Lab Schedule:**

http://www.phys.utk.edu/labs/F08ph231syl.pdf