

Physics 138: Honors Fundamentals of Physics Lab
Spring 2008

Lab Instructor: Jason Haraldsen

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Website: <http://www.nuclearbologna.com/PhysicsLab/PhysicsLab.htm>

Tutoring hours: Tuesdays 2:20pm – 3:30pm (Rm 201)

Lab Times: Tuesdays 5:45pm – 7:35pm (Rec. 4:40pm – 5:30pm) (Rm 510)

Office hours: Tuesdays 3:30pm – 4:30pm (Rm 217L Ayres Hall)

Text: Selected Introductory Physics Experiments, Dr. James Parks, ISBN 0759310211

Your Lab grade is divided as follows:

Lab Reports/Notebook	50%
Quizzes	30%
Laboratory Final	10%
Class participation	10%

Extra credit: Possibilities will arise throughout the semester for extra credit.

All quizzes and reports will be handed back in the lab after they have been handed in.

You are required to keep a neat and organized notebook throughout the semester. Your notebook grades will count like lab reports. Notebooks will be graded one or two times throughout the semester.

A lab report is a formal report and must contain all of the elements below:

- 1) Title Page: Title, Name, Lab Number, and Date.
- 2) Objective or Purpose: This is an introduction of the lab experiment (It should answer the questions: what it is about, what is going to be learned, how is it going to happen, and why is it important?)
- 3) Theory and Method: This should include the basic principles and equations of the experiment and the method used. Explain the physics...Do not just throw equations down!
- 4) Data and Calculations: Data in a nice presented form with examples of the calculations performed. This can be an attached sheet of data photocopied from your notebook.
- 5) Results: Graphs and final answers...This is the bottom line of the experiment...what you got!
- 5) Discussion: What you learned and have you satisfied your objectives. A brief discussion about your results, your error, how the experiment could be better, what caused the error, etc.
- 6) Questions: Answers and calculations of end of the lab questions.

Lab reports are due one week after the completion of the experiment.

- Although labs are completed with a partner, everyone is expected to hand in their own report. **No Plagiarism!!!** Reports are to be in your own words. 10 Points will be deducted if lab is one week late. Labs handed in after this time will result in a zero.

- University of Tennessee has many computer labs, learn them and use them. Remember **Murphy's Law: Everything that can go wrong will**, your computer is fallible and can easy turn on you. So know the labs, because your computer is not reliable and you may need them sometime. Also, backup your data and reports.

- **Attendance** is mandatory and every experiment must be done. Failure to show up for an experiment will result in a zero for that experiment. An exception may be made only when proper proof of absence is provided (exceptions are death in the family or you are in the hospital...being too drunk or hung over is not an excuse!). If you are going to miss an experiment **and** you have or will have proof of a valid absence (a.k.a. note from a doctor), I must be contacted 24 hours in

advance. Unexcused absences will result in a zero for the lab and a loss of participation percentage.

- Do not leave the room if you get done early. You must check with me before you leave. If you leave before I say that you may, your experiment will result in a ZERO.

Recitation is **OPTIONAL!!!** It is there for your benefit. We will discuss problems and try to answer your questions on concepts.

List of Experiments

Dates	Experiment
January 9	Classes Begin
January 15	No Lab
January 22	Oscilloscope Plus Basic Wave Theory
January 29	Diffraction
February 5	Simple Lenses & Optical Instruments
February 12	Speed of Light
February 19	Balmer Series
February 26	Electric Fields
March 4	Ohm's Law I, II, & III
March 11	Wheatstone Bridge & Resistance vs. Temperature
March 18	Spring Break March 14-21 -- No Labs
March 25	Electrical Energy
April 1	e/m Ratio
April 8	Ampere's Law
April 15	RC & RL Circuits
April 22	Lab Makeup/Final Exam
April 25	Classes End
April 28	Study Period