

**General College Physics**  
**Wisconsin Lutheran College**  
**Laboratory Notebook Guidelines**

Many reputable opinions regarding how nature works are wrong. In many cases, this is because these opinions do not conform to the way the world actually behaves. How can one determine how the world actually behaves? By looking at it carefully. During our laboratory sessions, we will carry out experimental investigations which attempt to reveal how the world works under carefully controlled conditions.

**Laboratory notebook** You must keep a record of your work during the laboratory sessions. To this end, you will need to purchase a lab notebook. Your lab notebook must be sturdy, must be at least 8.5 x 11 inches and must be quad-ruled (graph paper). You must allow the first few pages in your lab book to serve as a table of contents. The purpose of the lab book is to serve as a single source which contains all of the information relevant to your experiments. In particular, during each laboratory session, you should record the following information in your laboratory notebook:

- Your name and your laboratory partner's name, the date and a (tentative) title for the experiment.
- A neat sketch of any experimental apparatus you use, along with labels (make and model).
- A clear description of your experimental procedure(s), including difficulties which you experienced in carrying out your experiments.
- Tables containing any data which you collect. You must never write data anywhere else: not on scrap paper, not on the back of your hand, nowhere. Also, you must write down an estimated uncertainty in any measurement which you perform. For instance, if you use a stop watch to time a falling ball, you should estimate the precision with which you were able to record the time. This is always slightly larger than the resolution of the device being used.

Your lab book must be written in blue or black ink. It must be written in chronological order. That is, you might first describe some of your procedure, then record some data, then describe some more of your procedure, then some more data, and finally do some analysis. The important thing is that you write clearly and that you spread out your writing so that the reader of your notebook can easily ascertain what you did, and reproduce it if necessary. If it contains computer printouts of data tables or plots, these must be trimmed to fit neatly on a page and secured with tape. Do not fold or stack your plots. All plots must occupy at least half of a laboratory book page (*i.e.* don't make tiny plots).

**Laboratory grading** Laboratory notebook pages must be scanned and uploaded using the course management software by the date assigned by your laboratory instructor.

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**Approximate Syllabus**

<b>Wk.</b>	<b>Text</b>	<b>Category</b>
1	William Gilbert's <i>On the Magnet.</i>	Electricity and Magnetism
2	Benjamin Franklin's <i>Experiments and Observations on Electricity</i>	
3	Coulomb's <i>Law of force</i>	
4	Oersted and Ampere <i>On electric currents and magnetic forces</i>	
5	Ohm's law and electronic circuits	
6	Faraday's <i>Experimental Researches</i>	
7	Faraday's <i>Experimental Researches</i>	
8	Helmholtz's <i>On the Conservation of Force</i>	Energy
9	Helmholtz's <i>On the Conservation of Force</i>	
10	Huygens' <i>Wave theory of light</i>	Light
11	Huygens' <i>Wave theory of light</i>	
12	Young's <i>Nature of Light and Colors</i>	
13	Tyndall's <i>Lectures on Light</i>	
14	Tyndall's <i>Lectures on Light</i>	
15	Maxwell's <i>Electromagnetic Fields</i> , Michelson's <i>Aether</i>	
16	Final exams	