

# PHYSICS 170

## KEEPING A USEFUL LABORATORY NOTEBOOK\*

The purpose of a **Laboratory Notebook** is to provide a **detailed record of your experiments**: what were your plans and why, how you carried out the experiment, and what results were obtained. This record should be made **in ink** and be readable at some later time by you or anyone else. Both you and your partner should keep separate notebooks.



**Leave pages 1 & 2 blank** so you can insert a Table of Contents later.

**Each day's entry** should begin with a **date and time**, a statement of **what you plan to do and why**. Subsequent entries should include (for example) how you wired a cable; what purpose it served; problems you found and your solutions to them: e.g. "My connector was clearly not designed to be soldered to a wire." Be sure to include **lots of carefully drawn diagrams** and write down **all important parameters** as for example: which lens was used, in which orientation it was mounted etc. The more information you collect the easier it will be to remember what you have done.

**Use tables** for the collection of data in measurement series and for the comparison of data from different sources.

At the **end of each day's** entries, make a **summary** of your accomplishments and unresolved problems as well as your current plans for next time.

### HELPFUL HINTS:

1. Do not erase anything! Just cross out the data you perceive to be incorrect. Later you may discover that your "incorrect" data was correct after all.
2. During automated computer taking of data, it is a good idea to keep a separate time record of important events in your notebook -- what time you started taking data, opened a valve, changed heater power, broke a wire, etc. **Always write down in the notebook the name of data file that the computer is generating.**
3. When entering data in your notebook, be sure to **record the RAW DATA**, not the result of some computation. For example, suppose you determine the distance between a lens and a screen by measuring their two positions on a single meter stick. Record in the notebook the position of each object and then do the subtraction to obtain the distance between the lens and screen. If you just record this difference and make a mistake, you cannot go back and correct it later.
4. Leave lots of space in your notebook for pasting in your computer-generated graphs, but **be sure to paste them in before your next lab session.**

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\* One copy of the appropriate laboratory notebook will be provided free. It is your responsibility to replace it if lost, stolen, or severely damaged. The replacement notebook must be bound (**not spiral type**) and have minimum dimensions of **9" by 11.5"**. In the bookstores, it is sometimes called a "computation notebook."