

Introduction to Laboratory Notebooks
BI-102, Fall '07, Dr. C. S. Tritt
(Originally prepared by Dr. R. Gerrits)

Laboratory notebooks (essentially the same as Engineering Logbooks) provide legal documentation for both health care researchers and engineers. I find it useful to think of them as diaries for your professional life. It is important to start developing the skills of using a laboratory notebook early in career development. Notebooks for a “scientific” class such as this one should include the following:

1. Your name, address and phone number as well as the class name should be on front cover.
2. A copy of these instructions for using the lab notebook.
3. A copy of laboratory safety guidelines.
4. Records of your experimental work. Including:
 - a. Overall description of experiment and questions to be answered.
 - b. Hypotheses and predictions
 - c. Methods (Procedures). These should be prepared at a level of detail such that the work can be reproduced by an equally educated and skilled individual.
 - d. Results (summarized in computer generated graphs or tables), including statistical analyses.
 - e. Conclusions of your work.
 - f. Any other interesting observations, etc. Particularly anomalies (things you didn't expect).

When working in teams, it is not necessary or even desirable, to duplicate data in multiple notebooks. Each set of results should be recorded in one student's notebook and referenced (for example, “See Kathy Smith's notebook”) in other students' notebooks. However, as a practical matter, results may be duplicated if each student is going to need access to them outside of the lab period.

The individual parts of these sections should be tightly coupled. That is, the methods should be designed to support or refute specific hypotheses, results should follow directly from the specific procedures and conclusions should directly address support or reject hypotheses.

The goal of these sections is to provide enough information so that a person with your knowledge and skills could reproduce your work using just the information in your notebook. When done correctly these sections also provide a valuable (essential) resource for writing a final report on your work.

5. An Index or Table of Contents at the **back** of the book and go towards the front.

Lab notebooks should **not** contain homework solutions (unless related to laboratory work), personal reminders (grocery lists, etc.) or inflammatory statements (“Dr. Tritt is an idiot,” etc.).

Sketches and Graphs: Simple sketches, such as those illustrating experimental procedures, can and should be made in the book. Photographs are also sometimes included.

References: References should be cited to the source of the material when it is impractical to include the information directly in the notebook. These include computer files and WEB sites. Be sure references can be easily located.

Attachments: Attachments made in the notebook must be made with an adhesive so as to be permanently fashioned (tape or glue – no paperclips or staples).

1. In addition, titles, references, and other pertinent labeling (specific in nature) shall be made above, below, or marginally so that if by any means the attachment is lost, defaced, or becomes illegible, some identification shall remain in the book.

2. If material is also stored in electronic format, reference to location of this information must be included.

3. All attachments are to be trimmed or folded to remain well within the borders of the notebook when closed. Double-sided attachments should be photocopied so that each side can be attached on a separate page.

Notebooks are intended to provide a legal record of your work. Entries must be in **ink**. Books must be bound in, pre-numbered pages. Each entry should appear on a separate page. Unused space should be neatly lined out, labeled “Abandoned” and initialed. Each entry (page) should be signed and dated.

Also note that things in lab are to be written directly into your lab notebook and not on an intermediate piece of paper. Things from one part of the notebook can always be copied to another, but it is too easy to lose loose pages. **If you do not record data directly in your lab notebook, I will lower your final lab notebook grade for the quarter.**

You are also to be adding things to your lab notebook as you go along. I will sporadically check your lab notebooks to make sure that they are up-to-date. If they are not, I will lower your final lab notebook for the quarter.

Physically, notebooks must be stitch bound, have mechanically pre-numbered pages. The MSOE books store sales appropriate books. They’re not cheap. You may use or re-use your notebook in other classes provided the other instructor approves.