

Lab notebook

We will provide students with laboratory notebooks. In the course of performing experiments, you will learn how to properly record methods and data. In general, your lab notebook should be self-explanatory. That is, the notebook should be complete, well organized, and objective enough so that others could use it to accurately repeat your experiments. A lab notebook is not simply a recording of the process for the day. Rather, it should include the protocol as performed in the lab AND experimental observations for protocol steps, mentions of error and improvements from errors, and results of experiments performed in the form of text, pictures or both.

As part of your preparation for the wet lab session, you will list the key protocol steps in your notebook BEFORE the start of class. The goal is to record the steps and parameters that you will need to carry out the day's lab session. You can use an outline form. The outlined protocol steps are your pre-lab assignment for each wet lab session. This assignment must be done before class. Periodically, we will check your lab notebook at the start of lab to ensure that this pre-lab assignment is completed. Students may not participate in a lab session unless their pre-lab assignment is done.

Writing your pre-lab assignment before lab makes the lab session run smoother and easier for you. By writing the steps in your notebook for yourself, you ensure that you understand the objectives of the lab session. Writing the protocol steps in your notebook also provides a starting point from which you will record your experimental observations. For most protocol steps that you list, you should have at least one observation. One way in which you may organize your notebook so that you will incorporate protocol steps and observations seamlessly is to divide each page of your lab notebook into two columns. For one column you will write the protocol details, and in the other you will write the observations. This suggestion is one of many strategies that you may use. An organized, detailed, and clear notebook will help you to perform your experiments better (especially as many continue for multiple weeks) and will help you to write a better research report.

To help you to learn these record-keeping techniques, we will evaluate and grade your notebook for content, presentation and organization. We will provide carbon copy lab notebooks. Please submit the appropriate carbon copy (yellow) lab pages, including the pre-lab assignment and observations for the day's lab session, to the TAs at the end of each wet lab session.

Grading Criteria We will grade your notebook on the experimental protocol and observations. We look for clarity, organization and content. What does this mean? You should provide detailed step-by-step notes of the protocol that you or others could use to perform the experiment. For these steps, you should provide some experimental observations, results, or ideas for repeat experiments. These notes should be well written, with clear distinctions between the actual experimental steps and the experimental observations. When researchers perform a particular experiment, their notebook is the primary source for the manipulations and results performed. If another person in the lab wants to repeat an experiment or to understand past experiments, she will refer to the notebook. You should treat this notebook as if it were your primary information source for the experiments. It will be key in writing your lab reports. We view the notebook in this manner and grade you accordingly.

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