Guidelines for Writing a Formal Lab Report

Formal laboratory reports are examples of technical writing, which are written in the third person impersonal (e.g., “A few drops of phenolphthalein were added to the solution”), NOT in the first person active voice (e.g., “I added a few drops of phenolphthalein to the solution”).

Formal lab reports need not be typewritten, but they must be neat and organized.

Format for a formal lab report:

• **Title** of the experiment and the **date** the experiment was performed

• **Lab partner** (if applicable)

• **Purpose:** A brief statement of the goal of the laboratory experiment

• **Procedure:** A brief description summarizing the procedural steps that were carried out the lab with enough details that someone who has already done a similar experiment can reproduce the work. *Answer the question, “What did you do?”*
  – Include relevant information (e.g. approximate masses of substances weighed out, etc.)
  – Report what was done. **Do not give instructions!** This section should NOT be a list of steps.
  – Omit trivial information on accepted laboratory techniques (e.g. cleaning and conditioning a buret)

• **Data:** Include data tables showing all of the data collected during the experiment, as well as any errors with notes indicating what happened during the experiment.

• **Calculations** (if applicable): Show all calculations carried out on the data collected including any error analysis. This can be handwritten even if the rest of your lab report is typed, but it should be neat enough to confirm your calculations.

• **Results:** Summarize the data collected and any statistical analysis. Include only relevant data, but give sufficient detail to justify your conclusions in the Discussion section.
  – Include one or more **Summary Tables** that present the relevant data clearly. Summary tables may be in any format, but the rows and columns must be clearly labeled and delineated.
  – **Graphs** must include a title and clearly labeled axes including any applicable units.

• **Discussion:** *Answer the question, “What do your results mean?”* Discuss all of the results and the information obtained from statistical analysis and graphs. Also include the answers to any Laboratory Questions in this section. *The discussion should be cohesive and organized. Do not simply list all of your explanations and answers to the questions.*

  **DON’T** assume the reader is familiar with the Laboratory Questions. For example, don’t simply state, “Yes, it affects the results, making the calculated molar concentration higher.”

  **DO:** Include the Laboratory Questions within each statement. For example, state, “If the sodium hydroxide were delivered in a continuous stream rather than drop-wise, the calculated molar concentration of sodium hydroxide would be incorrectly low because….”

• **Conclusion:** Address your **Purpose**, and indicate what was determined in the experiment, summarizing the results (e.g. molarity or mass percent concentration of a solution) and including the identity of any unknown substances when appropriate.