

## Chem 1111-1121 Lab Write-up

The write-up should include the following items (clearly identified with headings):

- Title
- Introduction
- Procedure
- Results
- Discussion
- References

1. The **introduction** should include the theory and principles pertaining to the experiment. References to previous work (if known) and pertinent chemical information concerning the experiment should also be included. It may be necessary to use chemical equations or structures. The introduction should end by leading into the objective or purpose of the experiment which may be summarized in two or three sentences. Do not discuss results in this section or use pronouns.
2. The **procedure** as you performed the experiment. You are telling someone else what you did (past tense) and why you did it, thus there should be a rationale for your procedure. This is usually referred to as the overview. You have the option of including this overview in the introduction, but the procedure must be explained and not just listed. Please write in complete sentences, and do not use pronouns. The procedure is the only section that must be written in past tense of passive voice.
3. **Results** should be presented in table format. All data must be reported because it is unethical to fail to report all scientific data. It is a good idea to separate the raw data from the calculated data in the results section.

After a data table, clearly label and explain a **sample calculation** for each different type of calculation. These sample calculations should flow logically from the data. Dimensional analysis of units is required when using equations; record numbers to the correct number of significant figures.

4. The **discussion** section allows you to reflect on what you did and what you saw during the course of the experiment. This section should be written after the experiment is performed. This section also involves an interpretation of data and discussion of it. Speculation is appropriate as well as types of errors that may have affected your results. This section is often the most difficult to write. In general answer the purpose of the experiment at the beginning of this section. Then proceed to a discussion of errors and finally conclude with the significance or applications of the results.
5. There always should be **references** for your experimentation. Make sure that you reference "true values" in your report (if there are any) as well as any possible text material used. The ACS Style Guide (2<sup>nd</sup> edition) is available in the book store and is a lasting source of information about oral and written communication skills and formats. It has an excellent section on referencing. In general there are three ways to reference: (1) by superscript numbers, (2) by italic numbers on the line and in parentheses inside the punctuation, (3) by author name and year of publication in parentheses inside the punctuation. (This is often called the APA style). Any of these styles will be satisfactory for your report.

The report must be typed.