

CHEM 241
The Short Laboratory Report
Each is worth a total of 25 points

Described below are the format and content guidelines expected for short lab reports. All reports must be typewritten and 1 ½ or double-spaced. A sample report is attached for your reference.

Heading

Include the *course #*, your *name*, *date submitted*, and the *title* of the experiment. The title should be short but specific. You may use the same title given in the handout for a particular experiment.

Data and Results. (10-15 points) This section of your report is more than a collection of tables and figures. A clearly organized text should direct the reader to the table or figure, explain what is compiled there, and comment on whether the data follows expected behavior. *Do not interpret the data yet.* Such interpretation is reserved for the discussion section. Here you might simply observe a linear (or nonlinear) trend. Tables should include data for both standard series and unknown samples. Figures are usually plots of standard series data. Computer printouts (e.g. from our UV/Vis Diode Array Spectrometer) can be presented as is as long as they are properly labeled, as described below.

Tables and Figures should be labeled (Table 1, or Table 1.1) and must have a title describing its contents. Pertinent experimental conditions may be listed below the table. Plots should be computer-generated and should have clearly labeled axes, with units, and clearly visible plotting symbols indicating data points. The preferred plotting symbols are circles, squares, triangles, and diamonds; they may be open or filled. The fitted equation is usually drawn as a solid line or curve.

Following the presentation of the data, give the numerical results of calculation and the corresponding uncertainty parameters. This includes the equations of lines from least-squares fits. Analytical results and their uncertainties should be reported for the solution actually measured as well as for the original sample, after accounting for dilutions.

Discussion. (10-15 points) It is in this section where you will interpret your results. In particular, you should:

- Explain the relationship and principles shown by the results
- Point out exceptions or lack of correlation, and attempt to explain any anomalies you find
- Compare your results to accepted (or expected) values
- State your conclusions (This answers the problem)
- Comment on the significance of the work

References. Cite the references used. Present the citations as endnotes, numbered according to their appearance in the text and designated therein by a superscripted numeral. The form of the citation is that prescribed by the American Chemical Society. Please note the punctuation in the following examples.

1. For journal articles: authors' surnames and initials, abbreviated journal title (italicized or single-underlined), year (bold-faced or double-underlined), volume (italicized or single-underline), inclusive page numbers.

Light, T. S.; Cappuccino, C.C., *J. Chem. Ed.* 1975, 52, 247-250.

2. For books: author's surnames and initials, book title (italicized or single-underlined), edition, publisher, city, year, chapter or inclusive page numbers. Note that the year is not bold-faced in a book citation.

Christian, C.F.; O'Reilly, J. E., Eds., *Instrumental Analysis*, 2nd ed.; Allyn and Bacon: Boston, 1986; p.52.

If you refer multiple times to the same citation in one report, do not repeat it in your reference list; instead, reuse the superscript number with which it first appears in your paper.