Lab Report Requirements, Week 4 *Revised: 4/12/14*

Title Page. *Always required.*

Abstract. *Required.*

Introduction. *Not Required.*

Experimental. *Required.*

Results. *Required.*

- Report all results and raw data in tables and figures (titration curves, absorbance spectra, data recorded, etc.).
    - Label the indicator region and buffer region on your titration curve.
    - Report the standardization data (masses of KHP, volume to reach equivalence point, calculated concentration of NaOH). You should include your data and the data from 5 other students.
    - Report the pH at the equivalence point of your titration of acetic acid, and the pK_a of acetic acid.
    - The data used to calculate the pK_a of bromothymol blue can be found on the class website under the Handouts link for this experiment. Include absorbance spectra.
- Statistical analysis of data. (Include this information in tables in your report.)
    - Report the 95% confidence interval for the concentration of NaOH.
    - Compare the pH at the equivalence point to the theoretical value and compare the pK_a of acetic acid to the known value by calculating the relative errors.
    - Report the 95% confidence interval and the relative error for the pK_a of bromothymol blue.

Discussion. *Required.*

- Include all equations used for your calculations. Number the equations and provide a description of the variables in the equations. You do not need to include statistical analysis equations here.
- Compare your experimental results to actual, accepted values. (As one example, how close was your calculated pK_a for acetic acid to the known pK_a?)
- Discuss sources of error.

Conclusion. *Required.*

References. *Always required.*

Statistical analysis. *Required.*
All statistical analysis must be performed in Excel, and an Excel file must be uploaded into your ELN.