

## Chem 1LC Labs

### Week 1: Enthalpy of Formation

Coffee cup calorimetry and Hess' Law used to find the enthalpy of reaction.

### Weeks 2: Equilibrium and Visible Spectroscopy

The iron thiocyanate equilibrium constant is found using visible spectroscopy and LeChatelier's principle.

### Week 3: Computational Study of the Thiocyanate Ion

Spartan is used to investigate the actual structure of thiocyanate by looking at bond lengths and orbitals. Diatomic molecular orbitals are determined in the process

### Week 4: Dissolution Thermodynamics

The enthalpy and entropy change for the dissolution of borax is determined by acid-base titration of borate ion samples taken at different temperatures.

### Week 5: Electrical Conduction of Solutions

The conduction of various electrolytes is measured as a function of increasing atomic mass, acid strength, and increasing concentration. The equivalence point of a double displacement reaction is determined by conductometric titration.

### Week 6: Acid-Base Buffers

Preparation and the investigation of the effects of acid or base addition and buffer dilution on pH.

### Week 7: Electrochemical Cells

Measurement of cell potentials, creation of reduction potential table, and investigation of the effect of concentration on cell potential.

### Week 8: Rate Law Determination and Visible Spectroscopy

Visible spectroscopy is used to measure the disappearance of crystal violet as a result of hydroxylation. The rate law, rate constant, and half life are determined.

### Week 9 or 10: Lab Practical (during normal lab time)

### Summer Session Notes

Summer session classes meet in lab two times per week. Please see [calendar](#) for exact dates. Calendar is typically updated during Spring quarter.