

Chemistry 122

Thermochemistry

- Energy transformations
- Heat
- Calorimetry
- Thermochemical equations
- Heat and changes of state
- Calculate total energy
- Heat of solution
- Hess's Law
- Standard heats of Formation
- Rate of reaction
- Reversible reactions
- Equilibrium constants & equilibrium law
- Solubility product constant
- Common ion effect
- Spontaneous chemical reaction
- Entropy
- Dilutions

Acids and Bases

- 3 definitions for acids and bases
- Calculations
 - pH
 - pOH
 - $[H^+]$
 - $[OH^-]$
- Calculation involving mass and volume
- Acid, base and neutral values for pH, pOH, $[H^+]$ and $[OH^-]$
- Titration and neutralization reactions
- pH change in acid-base reactions
- Interpreting pH curves
- Polyprotic substances
- % ionization, K_a

Organic Chemistry

- Organic chemistry
- Alkanes
- Alkenes, geometric isomers

- Alkynes
- Cycloalkanes
- Aromatics
- Organic halides
- Alcohols
- Ethers
- Carbonyl compounds (ketones, aldehydes, carboxylic acids, esters)
- Organic reactions – addition, elimination substitution, condensation (esterification)
- polymers