

KAP Chemistry 2011- 12

Instructor – George Johnston

Kenyon Lecture Course: Chemistry 121, 123; ½ unit credit/lecture

Kenyon Lab Course: Chemistry 122, 124: ¼ unit credit/lab

Course Description – General chemistry is a course that covers many of the fundamental concepts and basic principles that are common to the different fields in chemistry. In this semester we will explore chemical reactivity and bonding through the development of the modern theory of quantum mechanics as it relates to the electron and through more in-depth examinations of chemistry applications such as the field of electrochemistry, etc.

Textbook: Chang, Chemistry 10th Ed.

Evaluation

Exams & quizzes	50%
Final Exam	20%
Labs	30%

-Tentative Schedule Semester I-

Chapter	Ideas
1,2,3	Intro & review of basics
4	Overview of reaction types
5	Gases
6	Thermochemistry
7,8	Quantum Theory, Periodic Relationships
24 (sect TBA)	Organic
9, 10	Bonding, MO Theory
11	Liquids, solids
12	Solutions

-Tentative Schedule Semester II-

Chapter	Ideas
13	Kinetics
14	Chemical Equilibrium
15	Acids and Bases
16	Acid-Base Equilibria
18	Entropy, Free Energy, and Equilibrium
19	Electrochemistry
22	Coordination Compounds

Experiments

Lab number	Description
1	Alum Synthesis
2	Alum analysis
3	Double and single displacement reactions
4	Dye Lab
5	IR Spectroscopy
6	NMR Spectroscopy
7	Determination of the Molar Mass of a Gas
8	Thermochemistry
9	Kinetics: Differential and Integrated Rate Laws
10	Kinetics of Bleach
11	Synthesis of Aspirin
12	ASA Determination
13	Determination of Acid Ionization Constant of a Weak Acid
14	Determination of a Equilibrium Constant of an Indicator
15	Finding the Mass Percent of Acetic Acid in Vinegar
16	Determining Molar Mass by Freezing Point Depression
17	Electrochemistry