

KAP Chemistry
2005-06
University School Syllabus

Instructor – George Johnston

Kenyon Lecture Course: Chemistry 111, 112; ½ unit credit/lecture

Kenyon Lab Course: Chemistry 113, 114: 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 7th Ed.

Evaluation

Exams & quizzes	40%
Final Exam	20%
Labs	30%
Presentation	10%

-Tentative Schedule Semester I-

Chapter	Ideas	Exams
1,2,3,4,5	Intro & review of basics	Quiz
7	Electronic structure of atoms	
8	Periodic trends	
9	Bonding – lewis structures	Exam
10-10.5	Bonding – hybrid orbital theory	
24 (sect TBA)	Organic	
4	Overview of reaction types	
6	Thermochemistry	Exam
18	Entropy, Free Energy, and	

	Equilibrium	
19	Electrochemistry	Exam

-Tentative Schedule Semester II-

Chapter	Ideas	Exams
5	Gases	Exam
11	Intermolecular forces and Liquids and solids	
12	Physical Properties of Solutions	Exam
15	Acids and Bases	
13	Chemical Kinetics	Exam
14	Chemical Equilibrium	
16	Acid-Base Equilibrium and Solubility Equilibria	Exam

Experiments

Lab number	Description
1	Double and single displacement reactions
2	Introduction to volumetric glassware, preparation of solutions, and UV-Vis spectroscopy
3	ASA determination
4	Synthesis of aspirin
5	Infra-red spectroscopy
6	NMR spectroscopy
7	Thermochemistry
8	Standardization of NaOH
9	Analysis of Vinegar
10	Determination of K_{sp}
11	Kinetics
12	Synthesis of Cobalt
13	PK_a of an Acid-Base indicator