SUNY Orange SYLLABUS

General Chemistry I

3 lect., 3 lab., 4 cr. (Fall, Spring)

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Office Hours: See hours on the office door

COURSE DESCRIPTION:

This is the study of a two-semester course of the fundamental principles of chemistry. Topics include: Stoichiometry, gases, atomic structure, periodic properties, ionic and covalent bonding, lewis structure, liquids and solids. Laboratory work is the application of these principles with emphasis on quantitative relationships. The keeping of a laboratory notebook is stressed.

TEXT AND MATERIALS:

Chemistry: Text: Zumdahl, Chemistry 6th edition ISBN: 0-61822163-8
Publisher: Houghten/Mifflin
Zumdahl, Chemistry Student Solution Guide, ISBN 0-618-22163-8.
Laboratory manual will be distributed throughout the semester.
A Scientific Calculator and Laboratory Notebook.

RELATIONSHIP TO PROGRAMS:

Chemistry 34105 is designed for the physical science or biological science related major. It is also an excellent course for someone planning a career in science or engineering. This course does not require calculus. If in doubt about the proper chemistry course to take, consult with your advisor or with the Department Chair.

COURSE OBJECTIVES:

The student who successfully completes this course will

- understand the fundamental models of chemistry.
- learn about how chemistry is involved in the real world.
- help develop skills for problem solving.
- understand how to keep a laboratory notebook.
- develop thinking skills that will help in the rest of your college life and life in general.
- be aware of and confident about your skills as a student and as an effective thinker.

GRADING SYSTEM:

The grading for this course will be determined as follows

Quizzes	25%
Test 1	10%
2	10%
3	10%
Final	20%
Lab. Work	25%

ATTENDANCE AND WITHDRAWAL:

Attendance is mandatory. Perfect attendance is assumed in this course. Without proper attendance a student will not do well in this course. To be successful in chemistry one must pay attention in lecture and conscientiously do the homework. It is the student's responsibility to ensure that she/he is doing well in the course.
No make up quizzes are allowed for any reason. However, one quiz with the lowest grade will be dropped from the average.

SUPPORT SERVICES:

Tutoring services are available in the Library. There is a study lounge available in Horton Hall, which is close to all the faculty offices. There are services available for students with disabilities. Any such conditions should be communicated privately to the instructor on the first day of class so that any necessary special arrangements or accommodations can be made.

Week	Topic	Lab
1.	Introduction Elements & Compounds /Atoms	Introduction
2.	Molecules/Ions Naming/Reactions/Eqs. Measurements /Units/Sig. Figs	Nomenclature
3.	Dim. Anal./Density/Temp. Atomic Mass/Moles. Stoichiometry/Bal. Eq	Greenman Exp.
4.	Mass Calculations Limiting Reactant/Molecular Formula	Stoichiometry
5.	Aqueous Solution Reactions in Solution Oxidation/Reduction	Density
6.	Concentration Stoichiometry/Titration, Review	Formations of Salts
7.	Test / Gas Laws Ideal Gas Problems	Concentration of Solutions
8.	Kinetic Theory/Real Gases Thermochemistry. Heat Capacity	Mole. Mass of CO_2
9.	Enthalpy/Hess's Law Quantum No./ Orbitals	Calorimetry
10.	Electronic Structure Atomic Radii/Ionization	Avogadro Const.
11.	Review Test 2. Chemical Bond	Alum
12.	Electronegativity/Lewis Structure Formal Charges/Resonance. Bonding Theory	Molar Mass of Liq.
13.	Hybridization	Concetration
14.	Molecular Orbital Change in States. Solutions	Periodic Table
15	Test 3 Review for Final	F.P. Depression
16.	Final	