

Chem 162
Summer 2013
Course Outline

Instructor: Michael J. Ferguson, Ph.D.

Office: BIL 321A

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AIM: HIChemistry

Phone: 956-7665

Office hours: immediately following class

Class times: M,T,W,Th,F 9-10:15 AM

Classroom: BIL 152

Teaching Assistants:

701 -- Kristen Wheeler kr4@hawaii.edu

702 -- Sreeramula Kalluri skalluri@hawaii.edu

703 -- Chris Nold cpnold@hawaii.edu

704 -- Morgyn Stryker mstryker@hawaii.edu

705 -- Marina Chong mmchong@hawaii.edu

Textbook: Chemistry a molecular approach, Tro 2nd ed. Pearson

General Description of Course:

This is an introductory general chemistry course. It is intended to provide a fundamental knowledge of chemistry to students who are entering the life sciences, who are seeking a general understanding of chemistry, or are pursuing higher-level chemistry courses. Topics covered include properties of matter, properties of solutions, acids and bases, equilibria, kinetics, electrochemistry, nuclear chemistry and inorganic reactions.

Student Learning Outcomes:

The SLOs for General Chemistry are: to understand the molecular nature of all phases of matter, to understand the various ways of depicting chemical compounds and chemical reactions, to develop an ability to solve basic quantitative problems regarding the properties of molecules, chemical equilibria, and chemical kinetics, and to develop the ability to appropriately apply this knowledge to general scientific problems in various fields of science and engineering.

More specifically, students should understand:

1. The basic structures of atoms, ions, and molecules, and ways to quantitatively describe the properties of atoms and molecules in the various phases of pure matter and in mixtures.
2. The reactivity of atoms, ions, and molecules, and the various qualitative and quantitative methods for describing or depicting chemical reactions.
3. The concept of chemical equilibrium, and the energies that drive chemical reactions: an introduction to the field of thermodynamics.

4. The concept of chemical kinetics and the energy required to initiate a chemical reaction.
5. The relationship between the electronic configurations of atoms and molecules and their chemical properties: an introduction to the field of quantum mechanics.

Grading:

The student's grade in the course will be decided by 3 exams (20 Multiple Choice each) and online homework. No make-ups for missed tests will be given. The name of the course online is CHEM162SUMMER2013UHM at <http://www.masteringchemistry.com/>

Students are responsible to properly mark scantron sheets properly. Any fault in improper marking of the scantrons or failure in forgetting to put names on the assessment is owned by the student.

Any types of academic dishonesty including cheating or plagiarism will result in the failure of the course.

Relative weights:

<u>Evaluation</u>	<u>Date</u>	<u>CH</u>	<u>Relative weight</u>
Midterm exam 1	25 July	11-13	30%
Midterm exam 2	7 Aug	14-16	30%
Midterm exam 3	15 Aug	17-18	25%
Online Homework	15 Aug		15%

Course Grades:

<u>Grade</u>	<u>Percent</u>
A	100-90%
B	89-80%
C	79-70%
D	69-60%
F	Below 60

+ values for the upper 3% points and – values for lower 2% points.
Curving may be employed if necessary.

Students with disabilities:

Web Site: <http://www.hawaii.edu/kokua/>

KOKUA provides disability access services to individuals on a case by case basis, and students are not charged for these services. A student's disability status is considered confidential information and is only disclosed to faculty with the student's permission. We have served thousands of students with disabilities since our inception in 1966 and will continue to be here to serve the needs of students with disabilities on our campus in the years to come!

Academic Dishonesty:

Academic Dishonesty: Academic dishonesty cannot be condoned by the University. Such dishonesty includes cheating and plagiarism (examples of which are given below), which violate the Student Conduct Code and may result in expulsion from the University.

Cheating includes, but is not limited to:

- giving or receiving unauthorized assistance during an examination;
- obtaining unauthorized information about an examination before it is given;
- using inappropriate or unallowable sources of information during an examination;
- falsifying data in experiments and other research;
- altering the record of any grade;
- altering answers after an examination has been submitted;
- falsifying any official University record; or,
- misrepresenting the facts in order to obtain exemptions from course requirements.

Plagiarism includes, but is not limited to:

- submitting, in fulfillment of an academic requirement, any document that has been copied in whole or in part from another individual's work without attributing that borrowed portion to the individual;
- neglecting to identify as a quotation another's idea and particular phrasing that was not assimilated into the student's language and style or paraphrasing a passage so that the reader is misled as to the source;
- submitting the same written or oral material in more than one course without obtaining authorization from the instructors involved; or,
- drylabbing, which includes obtaining and using experimental data and laboratory write-ups from other sections of the course or from previous terms, or fabricating data to fit the desired or expected results.

Copies of the Student Conduct Code are available from the Dean of Student Services.

Native Hawaiian Values

An understanding within the course is that the instructor and students will form a community where the following values will be upheld:

Aloha – Love, compassion, charity etc.

Laulima – To work together, Cooperation. "Many hands make light work"

Lokahi – Unity, Harmony, Agreement etc.

Malama – To take care of, care for, Preserve, Protect etc.

Kuleana – Responsibility, Rights, Privilege etc.

'Ike – Knowledge, Awareness and/or Understanding

Chapter	Suggested problems Tro, 1 st ed.
11	49, 51, 53, 55, 57, 59, 61, 63, 69, 75, 77, 79, 81, 83
12	31, 35, 49, 53, 63, 65, 69, 71, 73, 75, 77, 79, 81, 83, 84
13	27, 35, 41, 50, 51, 52, 53, 57, 58, 63, 64, 69, 71
14	21, 27, 31, 32, 35, 37, 41, 47, 51, 53, 57, 61, 63, 65, 67
15	35, 39, 43, 45, 49, 53, 57, 65, 69, 83, 85, 89, 99, 109, 113, 117
16	41, 43, 49, 55, 85, 87, 89, 95, 97, 111
17	27, 29, 31, 35, 37, 39, 41, 47, 51, 53, 57, 61, 63, 65, 71, 85
18	37, 39, 41, 43, 45, 47, 49, 53, 61, 65, 67, 73, 75, 87, 99, 101

Chapter	Suggested problems Tro, 2 nd ed.
11	49, 51, 53, 55, 57, 59, 61, 63, 65, 71, 77, 79, 81, 83, 85
12	31, 35, 49, 53, 63, 69, 71, 73, 75, 77, 79, 81, 83, 85, 86, 91
13	27, 37, 43, 52, 53, 53, 54, 55, 59, 60, 61, 67, 68, 73, 75
14	21, 27, 31, 32, 35, 37, 41, 47, 51, 53, 57, 61, 63, 65, 67
15	35, 39, 43, 45, 49, 53, 57, 67, 71, 87, 89, 93, 99, 103, 113, 117, 121
16	41, 43, 49, 55, 85, 87, 89, 95, 97, 111
17	27, 29, 31, 37, 38, 39, 41, 47, 51, 53, 61, 63, 65, 71
18	37, 39, 41, 43, 45, 47, 49, 53, 61, 65, 67, 73, 75, 87, 99, 101