

Chem 162 L
Summer 2013
Course Outline

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Office hours: 10:15-11:15

Class time: 12:30-3:30

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 mmcchong@hawaii.edu

Section	TA	Day	Location
701	Wheeler	MW	BILA 102
702	Kalluri	TR	BILA 102
703	Nold	MW	BILA 105
704	Stryker	TR	BILA 105
705	Chong	MW	BILA 118

Textbook

University of Hawaii CHEMISTRY 162L Experiments

Supplies

You are expected to provide yourself with safety glasses or goggles, proper attire, and a laboratory notebook.

Safety

No one will be permitted to work in the lab without safety goggles, closed toed footwear (no slippers, sandals, etc.), and long pants. No food or drinks are permitted in the laboratory. It is important that you report any accidents, no matter how minor, to your TA. No one is permitted to work in the lab without a TA present. Waste disposal must be done properly.

Introduction to the Laboratory

Chemistry 161L is a general chemistry laboratory course. You are expected to attend all meetings of the course and to complete all assignments on time. There will be no make up laboratories. You may be excused from a single laboratory period during the quarter,

but only under extraordinary circumstances. An unexcused absence counts as a “ZERO” for that lab period.

Each week you will carry out an experiment during the laboratory period. Before lab you will be expected to have read the description of the experiment, written up a working procedure for the experiment in your laboratory notebook, and be familiar with the general topic(s) to be investigated. Beginning in the second week of classes a short written quiz over the material of the previous lab and the current lab will be given at the start of each lab period.

PLAN AHEAD. You will often encounter delays. Organize your work so that these delay times are not wasted. Keep your work area clean – sloppy work is rarely accurate or precise.

The Laboratory Notebook

The laboratory notebook is an important part of this course because it is the complete record of everything you do. Your notebook should meet the basic requirements of any research or control laboratory. The notebook should be bound and each page sequentially numbered. Square rule paper is convenient for tables and graphs. It must begin with a Table of Contents that lists each experiment and corresponding page numbers. A carbon copy notebook is required for this course.

All entries in a laboratory notebook must be made in ink, with errors or data to be ignored neatly lined out, never erased or scratched out. A neat, well-organized, and easily read notebook will make your TA happy, but the primary purpose is to compile a complete record of your original data and calculations. Enter all data immediately into your notebook – not on loose pieces of paper that may be lost or confiscated. A uniform format is essential in your laboratory notebook. This is important because it aids in the organization of your reports and lab work; furthermore, it allows sections to be turned in for grading at the appropriate time. Use the following format:

Page Header

Include a block of the following information on every page:

Title of Experiment:

Your Name:

Partner’s Name (if any):

Date Performed:

Overall Outline for a Given Experiment

I. Purpose

One or two sentences which state the essence of the experiment: include the method and species that is being determined.

II. Procedure

This should include a numbered, ordered list of the tasks to be accomplished in the experiment. You should be able to run the experiment with only this procedure. A flowchart is suggested in addition to this list.

III. Data

Clearly record all data from the experiment. This includes, but is not limited to: the unknown identification number, a physical description of the unknown, tabulated measurements, etc.

IV. Conclusions

Explain any trends or anomalies in the data in this section. Support the discarding of any results and analyze your experimental errors. Suggestions for the modification of the lab procedure should be included in this section. List observations of unexpected, inconsistent, and interesting results. Attach the carbon copy of your conclusions to your lab report.

Due Dates

At the beginning of a lab session the report and conclusions from the previous lab session are due. Later in the lab session, after the quiz and pre-lab lecture, purpose and procedure sections for the current lab session are due. Finally, at the conclusion of a lab session, the data section for that lab session is due. The penalty for late lab reports is one point for each weekday after the due date.

Quizzes

A short quiz will be given at the beginning of each session that will cover material from the previous lab session and the current lab session. In general, the student is expected to know the underlying principles of the methods used – both the chemistry and the instrumentation.

Grading:

Each laboratory session is graded out of 20 points under the following scheme:

Purpose	1
Procedure	2
Data	2
Report	10
Conclusions	1
Quiz	4
Total	20

10% of the semester grade will be tied to safety and environmental consciousness. A student will receive all marks unless he or she engages in unsafe behavior. In order to care for the Earth, environmental consciousness will also be a part of the lab grade. Improper disposal of laboratory waste will result in a loss of marks. Improper cleaning of lab station and/or placing chemicals in the incorrect place will result in a loss of marks. The whole lab class may lose marks if the lab area is left unkempt or if waste is improperly disposed of. Improper use of PPE (personal protective equipment) including clothing and safety eyewear may result in loss of marks or expulsion from that particular laboratory exercise.

Course Grades:

<u>Grade</u>	<u>Percent</u>
A	100-90%
B	89-80%

C	79-70%
D	69-60%
F	Below 60

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 at the Office of 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

CHEMISTRY 162L – Summer 2013

Laboratory Schedule (701, 703)

$\frac{1}{2}$ Week	Dates	Sections	Experiment
1	7/8	601, 603	Check-In, Safety Lecture
2	7/10	601, 603	Basic Laboratory Techniques
3	7/15	601, 603	Colligative Properties: Freezing Point Depression
4	7/17	601, 603	Determination of a Rate Law
5	7/22	601, 603	Rates of Chemical Reactions II: Rate & Order of Hydrogen Peroxide Decomposition
6	7/24	601, 603	Colorimetric Determination of an Equilibrium Constant in Aqueous Solution
7	7/29	601, 603	Acid-Base Titrations
8	7/31	601, 603	Weak Acids, Bases and Their Salts
9	8/5	601, 603	Hydrolysis of Salts & pH of Buffer Solutions
10	8/7	601, 603	Determination of the Dissociation Constant of a Weak Acid
11	8/12	601, 603	Determination of the Solubility Product Constant for a Sparingly Soluble Salt
12	8/14	601, 603	Electrochemical Cells & Thermodynamics; Checkout

Laboratory Schedule (702, 704)

1/2 Week	Dates	Sections	Experiment
1	7/9	602, 604	Check In, Safety Lecture
2	7/11	602, 604	Basic Laboratory Techniques
3	7/16	602, 604	Colligative Properties: Freezing Point Depression
4	7/18	602, 604	Determination of a Rate Law
5	7/23	602, 604	Rates of Chemical Reactions II: Rate & Order of Hydrogen Peroxide Decomposition
6	7/25	602, 604	Colorimetric Determination of an Equilibrium Constant in Aqueous Solution
7	7/30	602, 604	Acid-Base Titrations
8	8/1	602, 604	Weak Acids, Bases and Their Salts
9	8/6	602, 604	Hydrolysis of Salts & pH of Buffer Solutions
10	8/8	602, 604	Determination of the Dissociation Constant of a Weak Acid
11	8/13	602, 604	Determination of the Solubility Product Constant for a Sparingly Soluble Salt
12	8/15	602, 604	Electrochemical Cells & Thermodynamics; Checkout