Chaminade University of Honolulu, SPRING 2015
CH 103L COLLEGE CHEMISTRY LABORATORY I
Syllabus

Instructor: William F. Bow
Lab section: 01 Saturday 8:00 - 12:00 PM HL 8
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Required Materials:

- lab notebook (composition book)
- scientific calculator
- safety glasses and covered footwear
- lab coat

Course Description:
Concurrent registration in CH 103 is required. The lab section is designed to enhance your understanding of scientific methods and concepts by bringing a practical understanding of chemistry through hands-on experience in different techniques.

Safety Requirements:
Students are required to practice safety precautions to include wearing safety glasses; closed toed, covered shoes; and lab coats while performing experiments. Long pants are recommended. If you have long hair, it is recommended to tie it back away from the face. Working in a lab can be messy, so consider wearing very casual attire in case it gets soiled during laboratory work. Only registered students will be allowed in the laboratory. For your safety, food and drink including chewing on gum or candy is not permissible in the lab.

Course Requirements:
A scientific hand-held calculator with log function is required. Bound notebook (three ring binders or wire bound notebooks are not acceptable). Access to Word/Excel or other word processing and spreadsheet program.

Course Expectations:
Students are expected to set up and perform chemistry-based experiments, while adhering to laboratory safety precautions set forth. Students will also need to keep a complete, thorough and relatively neat laboratory notebook.

Copies of the experimental procedures will be handed out in class prior to the scheduled lab dates. It is the student's responsibility to read this information *before* coming to lab.

After completion of this course, the average student will demonstrate the ability to:

- Understand the distinction between qualitative and quantitative chemical analysis.
- Identify sources of error in chemical experiments.

- Interpret experimental results and draw reasonable conclusions.
- Learn and understand laboratory safety procedures.
- Learn the importance of performing accurate and precise quantitative measurements.
- Keep legible and complete experimental records.
- Collaborate with peers in obtaining and interpreting data.

Attendance and Grading:
Attendance during all labs is REQUIRED. An excess of more than one (1) absence is unacceptable and will result in a non-passing grade in the course; make-up assignment for the first absence will be a one-page literature review of a peer-reviewed journal article; however, you are still responsible for understanding the lab experiment you missed, as you will be tested on it. Make-up work is only worth 80% of missed lab points. Under exceptional circumstances, alternative assignments in addition to the lab write-up may be available with a written request accompanied by a written verification for the reason of the absences. Experimental results will be provided by the instructor and consists of the raw data only, which can be used to complete the results, questions, and discussion portions of your lab-write up. The objectives, materials, hazards, and procedure can be completed with the information found in the laboratory handouts. Most experiments include a lab handout with pre-lab and post-lab questions; these will be due and graded when lab notebooks are collected.

The course grade will be based on the following:
60% = Laboratory Notebooks (graded 3 times throughout the semester)
40% = Laboratory Exam (given on the last day of lab)

The following grading scale will be used to determine the final grades:

A 90-100%
B 80-89%
C 65-79%
D 40-64%
Fail < 40%

Lab Exam: An exam covering the entire semester will be given the last week of classes. You may use your notebook and calculator as resources during this exam.

Lab Notebooks: The lab notebooks will be evaluated for completion and accuracy of the information required. They should be comprehensive, yet brief and concise, and contain the following:

- A ***purpose*** which accurately describes what you will do or hope to accomplish in the experiment
- The ***method*** or procedure used
- The ***results*** obtained and a summary of results (***Conclusion*** section)
- Any relevant *chemical equations*
- *Sample calculations*
- Sources of error and statistical treatment of data (include in ***conclusion*** section)

Attendance: Chemistry is, by its nature, a participatory science – *you need to participate in the lab work!* If for some reason you cannot attend a lab meeting, please contact me to agree on a plan to make up the work. It may be possible to attend another lab session, or alternatively, a "dry lab" can be completed which will be worth a maximum of 80% of the total points for that assignment. If no attempt is made to make up the missed work, a score of zero will be given for that experiment.

Student Conduct: Please refer to the Student Handbook for the CUH policies on Classroom Behavior and Academic Dishonesty.

Music Devices and Cell phones: The use of music devices and cell phones is prohibited during all Natural Science and Mathematics classes at Chaminade, unless specifically permitted by your instructor. Use of cell phones and music devices in laboratories is a safety issue, discourteous, and may lead to suspicion of academic misconduct. Students who cannot comply with this rule will be asked to leave class and may be subject to laboratory safety violation fines. Please refer any questions to the Dean of Natural Sciences and Mathematics.

ADA Accommodations: Students with special needs who meet criteria for the Americans with Disabilities Act (ADA) provisions must provide written documentation of the need for accommodations from the CUH Counseling Center (Dr. June Yasuhara; phone 735-4845) by the end of week three of the class, in order for the instructor to plan accordingly. Failure to provide written documentation will prevent your instructor from making the necessary accommodations.

Please refer any questions to the Dean of Students and review the procedures at http://www.chaminade.edu/student_life/sss/counseling_services.php

Important Lab Rules:

- Students must wear closed-toe shoes at all times.
- Safety glasses and lab coats must be worn when lab work is being carried out.
- Eating, drinking, and smoking are not allowed at any time.
- Do not bring any food or drinks into the lab.
- Experimental data should be recorded directly into lab notebooks.

Tentative Lab Schedule and Important Dates
(Subject to change; announcements will be made in lecture)

Week 1 (4/11) Lab Safety, Measurements and Significant Figures

Week 2 (4/18) Density and Specific Gravity

Week 3 (4/25) Energy and Specific Heat

Week 4 (5/2) Moles and Chemical Formulas; Compounds and Their Formulas

Week 5 (5/9) Chemical Reactions and Equations

Week 6 (5/16) Synthesis of a Compound

Week 7 (5/23) Stoichiometry and Green Chemistry

Week 8 (5/30) Gas Laws

Week 9 (6/6) Acid-Base Titration and Chemical Analysis

Week 10 (6/13) Lab Final