

Chaminade University of Honolulu, Spring 2015
CH 204L GENERAL CHEMISTRY LAB II
Syllabus

Instructor: Mr. William F. Bow

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Lab section: 01 (T), 02 (W), 03 (R)

2:30-6:20 PM, Henry Lab 8

Office Hours: T, W, R 12:30 - 2:20 PM or by appt.

Required Materials:

- lab notebook (composition book)
- scientific calculator
- lab coat, safety glasses, and covered footwear
- Access to Online: <https://www.edmodo.com> (Group Code: up25bz)

Course Description and Learning Outcomes:

This laboratory course accompanies the CH 204 lecture course. Students will perform experiments in the lab with class discussion of the techniques used and the expected results. The purpose of CH 204L is to continue the development of the laboratory skills learned in CH 203L, and to utilize these methods in the analysis of unknown samples. Copies of the experimental procedures will be handed out prior to the scheduled lab meeting. It is important that you read this material before starting the experiment. *1 credit. Concurrent registration in CH 204 is required.*

After completion of this course, the 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.
- perform accurate and precise quantitative measurements.
- keep legible and complete experimental records.
- collaborate with peers in obtaining and interpreting data.

Grading: The course grade will be based on the total number of points earned from laboratory quizzes (25%), a lab exam (45%), laboratory notebooks (20%), and attendance (10%). The lab notebooks will be evaluated for completion and accuracy of the information required. If you do not bring your notebook or fail to record your data directly in the notebook (i.e. do not write on scraps of paper) your “attendance points” may be affected.

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 Quizzes: Lab quizzes will be given periodically. No advanced notice may be given for quizzes. You may use your lab notebook to assist you in your quiz. No loose papers may be used for quizzes. Calculators are allowed.

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. No handouts may be used or taped into your notebook.

Lab Notebooks: The lab notebooks will be evaluated for completion and accuracy of the information required. All material must be written into the notebook. Loose paper is not allowed to be included in the notebook. You may use the lab notebooks for quizzes and lab exam. 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.

Spring 2015 CH 204L Schedule

<u>WEEK</u>	<u>DATE</u>	<u>TOPICS</u>
1	1/13, 1/14, 1/15	Syllabus and Course information
2	1/20, 1/21, 1/22	Experiment #1: Flame Absorption and Periodic Trends
3	1/27, 1/28, 1/29	Experiment #2: Synthesis of a Chemical Compound
4	2/3, 2/4, 2/5	Experiment #3: VSEPR Theory (Dry Lab)
5	2/10, 2/11, 2/12	Experiment #4: EDTA Titration of Calcium in Limestone
6	2/17, 2/18, 2/19	EDTA Data Analysis (Accuracy, Precision, and Error)
7	2/24, 2/25, 2/26	Experiment #5: Spectrophotometric Analysis of Aspirin
8	3/3, 3/4, 3/5	Aspirin Data Analysis
9	3/10, 3/11, 3/12	Experiment #6: Colligative Properties (Day 1)
10	3/17, 3/18, 3/19	Experiment #7: Colligative Properties (Day 2)
11	3/31, 4/1, 4/2	Experiment #8: Redox Titration of Bleach
12	4/7, 4/8, 4/9	Redox Titration Calculations; Solutions Worksheet
13	4/14, 4/15, 4/16	Experiment #9: Le Chatelier's Principle
14	4/21, 4/22, 4/23	Experiment #10: pH Titration of Cola
15	4/28, 4/29, 4/30	Lab Exam; Lab Notebooks Due
16	5/4 - 5/7	No labs (Finals Week)