

CH204L General Chemistry Laboratory II

Syllabus, Spring 2016

Instructor: Angelique Showman
Section: -01 T 14:30 – 18:20 Henry Hall Lab 8
-03 Th 14:30 – 18:20 Henry Hall Lab 8
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Office Hours: TBA

Required Materials:

- Bound lab notebook (composition book)
- Scientific calculator
- Safety glasses and covered footwear
- Lab coat

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.
- 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.

Safety Requirements:

Students are **required** to practice safety precautions to include wearing safety glasses; closed toed, full-coverage 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; required when we are using Bunsen burners. 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. Avoid applying cosmetics or touching your hands to your face anytime you are in lab.

Grading: The course grade will be based on the total points earned from laboratory reports, worksheets, lab quizzes and class participation.

The course grade will be based on the following:

45% = Laboratory Reports

30% = Lab Quizzes

15% = Worksheets

10% = Attendance and Attitude (following safety precautions, participation, etc.)

Grading Scale:

Letter grade: A = 90 - 100%

B = 80 - 89%

C = 65 - 79%

D = 40 - 64%

Fail = < 40%

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, it may be possible to attend another lab session. Under exceptional circumstances, alternative assignments worth up to 85% of the assignment points, 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 may 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. If this is not possible and the absence is excused, these points will be removed from your total; however, you are still responsible for understanding the material covered. If no attempt is made to make up the missed work or the absence is unexcused, a score of zero will be given for that experiment.

In class quizzes **cannot** be made up at a later time. If you miss a quiz or exam, a written explanation is for your absence is required (doctor's note or other document may be needed to determine if the absence is excused). Unexcused absences will result in a score of zero for that quiz or exam.

Lab Notebooks: The lab notebook is where all notes, raw data and calculations for experiments will be documented as well as who participated in the experiment and when the experiment occurred. Pre-lab and Post-lab questions will also be answered in the lab notebook. Lab notebooks must be bound and pages numbered, must include a title page [Date(s) of Experiment, Description of Experiment, Page Number(s)] and written in blue or black permanent ink (absolutely NO pencil). Pages cannot be removed from the notebook but can be added permanently such as graphs, pictures, graded items such as worksheets, lab reports and quizzes. Anything not permanently in you lab notebook at the beginning of lab cannot be used for that lab assignment or quiz. Anything added to the lab notebook needs to include your initials on the addition and on the page that it is attached to in order to ascertain if something is missing or has fallen out of place. Mistakes happen and are expected; however, they still need to be readable, thus mistakes are only to be crossed out with a single line and **NO** correction tape/white out can

be used. Lab notebooks **CANNOT** be rewritten and are used as a legal document that shows what occurred in lab, when it occurred and cannot be edited to make it look prettier. Lab notebooks may be checked at any time during lab meetings and quizzes given throughout the semester will be used to assess the quality of your lab notebook.

Lab Quizzes: Lab quizzes may consist of pop quizzes or be announced the week prior to the quiz. A final lab quiz covering the entire semester may given the last week of classes. You will be permitted to use your notebook and calculator as resources during this exam.

Lab Reports: The lab reports will be evaluated for completion and accuracy of the information required. They should be brief and concise, and contain the following:

- An abstract describing what you did, how you did it and the results obtained
- Any relevant chemical equations
- Sample calculations
- Sources of error and statistical treatment of data

Student Conduct: Please refer to the Student Handbook for the CUH policies on Classroom Behavior and Academic Dishonesty and additional NSM policies listed at the end of this document.

Music Devices and Cell phones:

The use of music devices, cell phones, smart phones, PDAs (personal digital assistant), pagers or any other electronic device with the potential to make noise is prohibited during lab.

Headphones are not permitted; wearing headphones in lab is a safety issue! These devices must be turned off or placed on silent (not vibrate) during the entire lab time. During quizzes/exams, these devices need to be turned off and stored with the instructor until completion of the quiz/exam. If during a quiz/exam, your electronic device makes noise (this includes vibrating), you may be asked to turn in your exam for a grade of zero and leave the room while the rest of the class finishes. The use of any other electronic device other than an approved scientific calculator during the quiz/exam will be considered a form of academic dishonesty and will result in a failing grade for that assignment (this includes pre-programming graphing calculators). Students who cannot comply with this rule will be asked to leave class. Please refer any questions to the Dean of Natural Sciences and Mathematics. All this being said, sometimes you will be permitted to use the camera on your phone or if you have a tablet, certain apps will be allowed; however, this is a privilege and anyone caught doing anything other than lab work on these devices will ruin it for everyone and lose participation points for that lab.

Lab Schedule is subject to change; announcements will be made in class/lab.

Spring 2016 CH 204L Schedule

Week	Dates (all sections)	Experiments and <i>Fourth Hour Topics</i>
1	1/12, 1/13, 1/14	Lab check-in, Safety information <i>Assessment</i>
2	1/19, 1/20, 1/21	Experiment #1: EDTA Titration of Calcium in Limestone <i>Review of solution stoichiometry</i>
3	1/26, 1/27, 1/28	EDTA Titrations <i>Accuracy, Precision and Error Analysis</i>
4	2/2, 2/3, 2/4	Molecular Geometry <i>VSEPR Theory</i>
5	2/9, 2/10, 2/11	Experiment #2: Spectrophotometric Analysis of Aspirin <i>Spectroscopy</i>
6	2/16, 2/17, 2/18	Aspirin Data Analysis <i>Beer's Law</i>
7	2/23, 2/24, 2/25	Experiment #3: Redox Titration of Bleach <i>Redox reactions</i>
8	3/1, 3/2, 3/3	Redox Titrations <i>Solution Concentration Calculations</i>
9	3/8, 3/9, 3/10	Colligative Properties Worksheet
10	3/15, 3/16, 3/17	Experiment #4: Reaction of Bleach and Bromocresol Green <i>Kinetics</i>

Spring Break 3/21 – 3/25

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11	3/29, 3/30, 3/31	Experiment #5: Le Chatelier's Principle <i>Chemical Equilibrium</i>
12	4/5, 4/6, 4/7	Experiment #6: K_a of a Weak Acid <i>Acid-Base Calculations</i>
13	4/12, 4/13, 4/14	Experiment #7: pH Titration of Cola <i>pH Titrations</i>
14	4/19, 4/20, 4/21	pH Titration Data Analysis
15	4/26, 4/27, 4/28	Lab Quiz

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Additional Departmental and University Policies

1. Electronic Devices

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 cellphones and music devices in laboratories is a safety issue. In addition, use of cellphones and music devices in any class is 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. You will be asked to leave class and marked absent if you do not comply. This will negatively affect your grade. Please refer any questions to the Dean of Natural Sciences and Mathematics.

2. ADAA Statement

2.1 Pursuant to several federal and state laws, including the Americans with Disabilities Act of 1990, as amended by the ADA Amendments Act of 2008, and Section 504 of the Rehabilitation Act of 1973, all qualified students with disabilities are protected from discrimination on basis of disability and are eligible for reasonable accommodations or modifications in the academic environment to enable them to enjoy equal access to academic programs, services, or activities. If a student would like to determine if they meet the criteria for accommodations, they should contact the Counseling Center at 808-735-4845 for further information.

3. Attendance & Tardiness

3.1 Students are expected to attend regularly all courses for which they are registered. Students should notify their instructors when illness or other extenuating circumstances prevents them from attending class and make arrangements to complete missed assignments. Notification may be done by emailing the instructor's Chaminade email address, calling the instructor's campus extension or by leaving a message with the instructor's division office (Natural Science and Math 1 (808) 440-4204). It is the instructor's prerogative to modify deadlines of course requirements accordingly. Any student who stops attending a course without officially **withdrawing**, may receive a failing grade.

3.2 Unexcused absences equivalent to more than a week of classes may lead to a grade reduction for the course. Any unexcused absence of two consecutive weeks or more may result in being **withdrawn** from the course by the instructor, although the instructor is not required to **withdraw** students in that scenario. Repeated absences put students at risk of failing grades.

3.3. Tardiness – failure to be on time for class may result in loss of participation points and even quiz/exam points as additional time will not be given, nor will makeup quizzes be given for students who are tardy.

4. Policy on Make-Up Tests

See syllabus, under Attendance for Instructor's policy on make-up exams/quizzes.

5. Policy on Communication

5.1 The University provides a Chaminade email address for all students. Official Chaminade communications will be sent to the students' Chaminade email address and instructors will use only this email to communicate with students. It is the responsibility of the student to check their email frequently. Report email-related problems to the Helpdesk at 808-735-4855 or helpdesk@chaminade.edu.

6. Laboratory Safety Information

The following guidelines are established to provide instructions in maintaining safety for students, staff, and faculty while using any of the science laboratories at Chaminade University. The Division of Natural Sciences and Mathematics (NSM), along with the University Environmental Safety Office are responsible for enforcing the regulations set forth in the current Student Handbook. Queries should be addressed to: Dean of Natural Sciences and Mathematics (808) 440-4204; Environmental Safety Officer (808) 739-4811

7. Title IX Declaration

Chaminade University of Honolulu recognizes the inherent dignity of all individuals and promotes respect for all people. Sexual misconduct, physical and/or psychological abuse will NOT be tolerated at CUH. If you have been the victim of sexual misconduct, physical and/or psychological abuse, we encourage you to report this matter promptly. As a faculty member, I am interested in promoting a safe and healthy environment, and should I learn of any sexual misconduct, physical and/or psychological abuse, I must report the matter to the Title IX Coordinator. Should you want to speak to a confidential source you may contact the following:

- Chaminade Counseling Center | 808 735-4845.
- Any priest serving as a sacramental confessor or any ordained religious leader serving in the sacred confidence role. | 808-735-4774 |

http://www.chaminade.edu/student_life/ssc/counseling_services.php

8. Academic Honesty

Students are expected to have read and to abide by the "Student Rules of Conduct" which are available in your copy of Chaminade University's Student Handbook. Cheating in the form of plagiarism, collusion, deception and will not be tolerated and will negatively affect your grade.