



General Chemistry Laboratory I

CHEM161L, CRN: 61387

Fall 2023

CLASS INFORMATION

Asynchronous online

Meeting Location: Zoom meeting info will be provided as needed

INSTRUCTOR INFORMATION

Instructor: Martine Bissonnette

Office Hours: Virtual office, appointments available via Zoom

E-mail: martineb@hawaii.edu

WINDWARD COMMUNITY COLLEGE MISSION STATEMENT

Windward Community College offers innovative programs in the arts and sciences and opportunities to gain knowledge and understanding of Hawai'i and its unique heritage. With a special commitment to support the access and educational needs of Native Hawaiians, we provide the Ko'olau region of O'ahu and beyond with liberal arts, career and lifelong learning in a supportive and challenging environment — inspiring students to excellence.

SYLLABUS CHANGE POLICY:

Information contained in the course syllabus may be subject to change with reasonable advance notice, as deemed appropriate by the instructor. Updates to the syllabus will be communicated via email.

About This Course

Laboratory experiments illustrating fundamental principles of chemistry. (3-4 hours estimated time to complete each lab).

Pre-Requisite(s): Credit for or registration in CHEM 161.

Course Learning Outcomes

After successfully completing this course, you will be able to:

1. Apply laboratory safety procedures and respond to hazards.
2. Use molecular and crystal models, perform common laboratory techniques competently and computer-based experiments to verify chemistry laws on stoichiometry, thermochemistry, behavior of gases and liquids.
3. Apply and articulate the scientific method by preparing lab reports using the standard scientific format. Express in writing core chemistry principles, results of experiments and do critical thinking by synthesizing conclusions based on observations and data.
4. Make and record precise measurements, calculate results using significant figures, standard deviations and identify sources of error in laboratory experiments.
5. Use computer competently, word-processing, spreadsheet and graphing.
6. Prepare chemical solutions, perform dilutions, calculate solution concentrations and generate a calibration curve.

Course Format

We will be using the Labflow platform which provides a way to view experimental techniques, make observations, and perform some of the calculations used during lab experiments. There are no supplies to purchase but there is a \$30 fee to access the platform.

For each lab, students will have to review the material, complete a pre-lab quiz, and complete a report. Students should allocate 3-4 hours a week to complete all the tasks.

All tasks are due at 11:59 pm on Monday for each assigned lab except for the last week of class which has a due date of Friday (see tentative schedule at the end of this syllabus) and include the following:

- Login to Labflow to view the background videos
- View required Laulima videos
- Answer pre-lab quiz questions
- Submit lab report

Required Materials

Students must have the following:

- Computer or tablet with high-speed internet connection
- Access to Laulima website and Zoom as needed
- Access to Labflow platform (semester cost \$30): www.labflow.com, enrollment code 61387
- Chem 161 class notes and OpenStax Textbook: Chemistry (Free, <https://openstax.org/details/books/chemistry-2e>)
- Scientific calculator that has Log and natural log (ln) functions.
- Electronic device to take photos of written work and ability to upload image to website

Course Policies

Communication

Your instructor will send a weekly email to provide specific instructions about the week's experiments.

Students can communicate with the instructor via Laulima e-mail, or university e-mail. Messages will usually be answered within 24 hours during the week or within 48 hours on weekends and holidays.

Alternative Contact

If you are unable to contact the instructor, have questions that your instructor cannot answer, or for any other issues, please contact the Academic Affairs Office:

Location: Alakai 121
Phone: 808-235-7422
Email: wccaa@hawaii.edu

Attendance & Grading

Attendance/Participation

Students are expected to complete the work associated with each week's experiments within the allocated time frame.

Evaluation and Feedback

The instructor will attempt to grade work and provide feedback within 1-2 weeks.

Late Work

A 10% per week penalty (up to 30%) will be applied to all late reports. No work will be accepted later than three weeks after the due date unless there are specific circumstances and you have notified the instructor prior to the initial due date. Work can be submitted until 11:59 pm on the due date.

Pre-lab Assignments

Each experiment (except the first one) will have an associated pre-lab assignment posted on Laulima. Allow 1-2 hours to watch the videos and complete the pre-lab (make sure you do watch the videos as there is a tracker and you will not earn pre-lab points if you do not view videos).

Reports

Each lab includes worksheet reports that will be used to record simulation data and observations during the experiment. You should allocate 2-4 hours to complete both the experiment and the post-lab questions. Formal reports may take longer. All work must be completed by the due date and time.

Formal lab reports.

Two of the experiments (highlighted in bold in the schedule) will require a formal report which have to be submitted as one pdf file (multiple pages must be scanned as one document) – no other format will be accepted. More information will be provided the week prior to the formal report being due; you will be provided with a template. Just like the worksheets, formal lab reports must be turned in by the due date/time.

Lab Safety

All experiments will be performed virtually and will not involve any chemicals.

Data

You will be working by yourself for these experiments; the platform will provide individualized data and each person must present their own results. When recording data, pay attention to significant figures and to the precision/units of the instrument used (for example, your balance weighs to three decimal places, so you would record a reading at 10.450 grams).

Exams

There will be one midterm and one final exam (120-minute duration) administered via Labflow. Both will be open-book.

Weekly Experiments - Recipe for Success

- Check the Laulima homepage weekly for announcements and update/important information.
- Read all information and view all provided videos
- Contact your instructor if you don't understand something or need help
- Check your email at least a couple of times per week.
- Submit your work on time.

Special learning needs

If you have special learning needs, inform your instructor at the beginning of the semester.

Grade Composition

The Final Grade will be based upon a possible total of 475 points. The lowest worksheet and pre-lab quiz will be dropped.

1. 9 Experiments Worksheets (25 points each) – 225 points
2. 2 Formal Lab Reports (50 points each) – 100 points
3. 10 Pre-lab Quiz (5 points each) – 50 points
4. Midterm exam – 50 points
5. Final Exam– 50 points

Students can check their grades and examination scores in the Lualima Gradebook at any time.

Final Grade

Grades of I, W, CR, CN are described in the current college catalog. Students who no longer attend class and who DO NOT OFFICIALLY WITHDRAW from the course will receive "F" grades.

Students must present the "Request for Incomplete" form to their instructor prior to the last day of instruction. "I" grades will be given only to students who are achieving passing grades and are very close to completing the course. Only serious reasons will be accepted (listed under the withdrawal policy).

You will receive a letter grade based on the following scale:

Letter Grades and Percentage Ranges

A = 90-100%

B = 80-89%

C = 70-79%

D = 60-69%

F = 0-59%

Institutional Information

Please review the following institutional policies:

Student Responsibilities

- Students should allocate 6-8 hours per week to complete each experiment and work on assignment/report.
- UH Policy on Email Communication
The electronic communications policy adopted in December 2005 establishes the University of Hawai'i Internet service as an official medium for communication among students, faculty, and staff. Every member of the system has a hawaii.edu address, and the associated username and password provide access to essential Web announcements and email. You are hereby informed of the need to regularly log in to UH email and Web services for announcements and personal mail. Failing to do so will mean missing critical information from academic and program advisors, instructors, registration and business office staff, classmates, student organizations, and others.
- Academic Honesty
In cases of suspected or admitted academic dishonesty, the instructor involved shall attempt to discuss the matter with the student. The instructor may bring the matter to the attention of the departmental chairperson for consultation. The instructor may require the student to redo the assignment, give a failing or reduced grade for the course, and/or refer the student to the Vice Chancellor for Student Affairs or designee through the Department Chair for possible college action under the Student Conduct Code. The Vice Chancellor for Student Affairs or designee shall pursue such cases to determine appropriate disciplinary actions if, after a preliminary investigation, it is his/her determination that probable cause exists to establish that an act of academic dishonesty took place.

College Policies

- Disabilities Accommodations
If you have a physical, sensory, health, cognitive, or mental health disability that could limit your ability to fully participate in this class, you are encouraged to contact the Disability Specialist Counselor to discuss reasonable accommodations that will help you succeed in this class. Roy Inouye can be reached at (808) 235-7448, royinouye@hawaii.edu, or you may stop by Hale Kāko'o 106 for more information. You shall also inform your instructor at the beginning of the semester; that information will remain confidential.
- Sex Discrimination and Gender-Based Violence Resources (Title IX)

Windward Community College is committed to providing a learning, working, and living environment that promotes personal integrity, civility, and mutual respect and is free of all forms of sex discrimination and gender-based violence, including sexual assault, sexual harassment, gender-based harassment, domestic violence, dating violence, and stalking.

If you or someone you know is experiencing any of these, WCC has staff and resources to support and assist you. To report an incident of sex discrimination or gender-based violence, as well as receive information and support, please contact one of the following:

UH Confidential Advocate
Phone: (808) 348-0432
Email: advocate@hawaii.edu

Desrae Kahale, Mental Health Counselor & Confidential Resource
Phone: (808) 235-7393
Email: dkahale3@hawaii.edu
Office: Hale Kāko'o 101

Jojo Miller, Title IX Coordinator
Phone: (808) 348-0663
Email: jojo.miller@hawaii.edu

As a member of the University faculty, I am required to immediately report any incident of sex discrimination or gender-based violence to the campus Title IX Coordinator. Although the Title IX Coordinator and I cannot guarantee confidentiality, you will still have options about how your case will be handled. My goal is to make sure you are aware of the range of options available to you and have access to the resources and support you need.

For more information regarding sex discrimination and gender-based violence, the University's Title IX resources and the University's Policy, Interim EP 1.204, go to manoa.hawaii.edu/titleix/

- Covid-19 policies: <https://windward.hawaii.edu/campus-life/safety-security/campus-emergency-preparedness-and-evacuation-procedures/coronavirus/>

How to Get Help <https://windward.hawaii.edu/services-for-students/>

- Academic Support
- Student Support Services windward.hawaii.edu/MySuccess
 - Academic Advising
 - Financial Aid
 - Personal Counseling
- Technical Support Services

Tentative Course Schedule

The following schedule is subject to change. Should changes occur, you will be notified by email. All due dates are on Monday evening, except for the last week which has Friday due dates.

Week	Date	Event	Topic/Event	LabFlow Experiment
1	21 Aug	Lab 1	Laboratory Safety and Math Review Basic Laboratory Techniques	Lab Safety
2	28 Aug	Lab 2	Introduction to Laboratory Measurements	Intro to the Laboratory/Basic Laboratory Techniques
3	4 Sept	Lab 3	Separation of Mixtures	Separating a Mixture of Solids
4	11 Sept	Lab 4	Solutions, Electrolytes, and Concentrations	Solutions, Electrolytes, and Concentrations/Using Excel
5	18 Sept	Lab 5	Types of Chemical Reactions	Types of Chemical Reactions
6	25 Sept	Lab 6	Solubility Rules	Soluble and Insoluble Salts
7	2 Oct	Lab 7	Determination of Chemical Formula and Stoichiometry	Empirical Formula
8	9 Oct	Exam	Midterm Exam - Covers Labs 1 to 6	
9	16 Oct	Lab 8	Beer's Law Investigation	Beer's Law and Spectrophotometry
10	23 Oct	Lab 9	Titration of Acetic Acid Content in Vinegar	Titration: Determining the Concentration of an Acid
11	30 Oct	Note	<i>Last day to withdraw with a W grade</i>	
11	30 Oct	Lab 10	Pressure-Volume and Pressure- Temperature	Boyle's Law
12	6 Nov	Lab 11	Calorimetry	Constant Pressure Calorimetry
13	13 Nov	Lab 12	Periodic Trends	Atomic Spectra (Part C only), Identification of a Halide
14	20 Nov	-	Thanksgiving week – no lab	
15	27 Nov	Lab 13	Lewis Formula and Molecular Shapes	Compounds and their Bonds
16	4 Dec	Exam	Final Exam - Covers Labs 7 to 13	
17	11 Dec		Finals Week	

**** Experiments in bold require a formal lab report**