UNIVERSITY of HAWAIʻI
WINDWARD COMMUNITY COLLEGE
Ke Kulanui Kaiāulu o ke Koʻolau

General Chemistry Laboratory 1

CHEM161L

Fall/2026
1 Credit | CRN 62173

* This syllabus and/or our Course Schedule is subject to change at any time. I will notify you of any changes via email. Mahalo!

About Windward Community College

Mission Statement

ʻO keia ka wā kūpono e hoʻonui ai ka ʻike me ka hoʻomaopopo i kō Hawaiʻi mau hoʻoilina waiwai. Aia nō hoʻi ma ke Kulanui Kaiāulu o ke Koʻolau nā papahana hou o nā ʻike ʻake akamai a me nā hana noʻeau. Me ke kuleana koʻikoʻi e hoʻohiki ke Kulanui e kākoʻo a e hoʻokumu i ala e hiki kē kōkua i ka hoʻonui ʻike a nā kānaka maoli. Na mākou nō e hoʻolako, kākoʻo a paipai i nā Koʻolau a kō Oʻahu aʻe me nā hana noʻeau ākea, ka hoʻonaʻauao ʻoihana a me ka hoʻonui ʻike ma ke kaiāulu—hōʻaʻano a e hoʻoulu i nā haumāna i ka poʻokela.

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

ʻĀina

Windward Community College is located in the ahupuaʻa of Kāneʻohe and Heʻeʻia in the moku of Koʻolaupoko on the island of Oʻahu. Both ahupuaʻa are directly connected to the moʻo ʻōlelo of Pāpa and Wākea, who are seen as the ancestors of the Hawaiian nation. The campus sits beneath the puʻu of Keahiakahoe, which is also connected to many moʻo ʻōlelo of this ʻāina. Because wind names and rain names are associated with specific ʻāina, the rain name of Kāneʻohe is known as the ʻĀpuakea and the rain name of Heʻeʻia is the Ulumano.

Instructor Information

About Your Instructor

Aloha, my name is Mr. Kim, and I will be your guide, helper, coach, and supporter for **CHEM 161L**. I was born and raised in Honolulu and am currently retired after teaching chemistry and physics for over 40 years. Although retired, I still enjoy working with people. I coach a sport, tutor students, and run a class focused on balance and fall prevention for older adults. In my spare time, I enjoy fixing and remodeling houses, and my three dogs keep me pleasantly busy.

Your success in this course will depend on self-motivation and discipline. It is essential that you follow instructions carefully, manage your time well, maintain a consistent work routine, and complete assignments on time. My goal is to help you understand the material in a meaningful and lasting way.

I have often wished that someone would "take me under their wing" and guide me through learning something new. This semester, I will strive to be that guide, helper, coach, and servant to you. In addition to my office hours, you may contact me by email or Zoom whenever you need support.

How to Contact Your Instructor

Randy Kim, Lecturer

Department of Natural Sciences

Windward Community College

University of Hawai'i

- Virtual Office: ZOOM:
- https://us04web.zoom.us/j/6052715636?pwd=dOpTFCpXIb2a5o6WDnXZk5reeYkLMt.1

  Meeting ID: 605 271 5636

  Passcode: chemistry
- Office Hours:
  Monday 3 – 4 pm or by appointment
  Office: Chemistry lab room
- Email: rkim8@hawaii.edu

Response time: I generally respond to email and Q&A within 2 hours.

Asking Course Questions

Please use course Q&A in Lamakū Discussions for all general course questions about content, activities, due dates, how work will be graded, etc. As much as possible, I will check this forum

daily and will provide follow-up information there usually within 24 hours (weekends may be an exception).

Email specific grading questions and/or personal matters, per FERPA, to keep your information protected. Please use my UH Gmail for this: rkim8@hawaii.edu.

Alternate Contact Information

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: Alakaʻi 121
- Phone: (808) 235-7422

Contingency Plan

If there is an outage, weather situation, or family emergency on my end, I will do my best to find a way to communicate an update as soon as possible about my return to the course. Mahalo in advance for your understanding and I hope you will do the same.

Course Format & Structure

This in-person course is being offered in a 16-week time frame. Please note that this is not a self-paced course; our course schedule is provided in this syllabus.

Class resources will include handouts, Lamakū materials, and links to online sources such as videos and other materials. The student will be made aware of these in class and/or Lamakū announcements.

Labs, quizzes, exams, and some assignments will be presented on the class Lamakū site.

Participation Verification

Campuses are required by federal regulations to verify the participation of students in their classes. In accordance with Executive Policy 7.209, all students in the University of Hawaiʻi system are required to establish “participation” to ensure that they are not dropped from their class(es). Effective Fall 2021, students who fail to participate by the late registration period for a class will be administratively dropped from that class. Students may also be dropped from dependent prerequisite and/or corequisite classes if both courses do not establish participation.

Course Information

Catalog Description

CHEM 161L : General Chemistry I Lab
Laboratory experiments illustrating fundamental principles of chemistry.

Credits: 1
Lab Hours: 3
Designation DY
Prerequisites
Credit for or registration in CHEM 161

Course Outcomes

- Apply laboratory safety procedures and respond to hazards.
- 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.
- Apply and articulate the scientific method by preparing lab reports using the standard scientific format.
- Make and record precise measurements, calculate results using significant figures, standard deviations, and identify sources of error in laboratory experiments.
- Express in writing core chemistry principles, results of experiments and do critical thinking by synthesizing conclusions based on observations and data.

Student Learning Outcomes

Students can expect to attain the following outcomes as a result of taking this course:

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 computers competently, word-processing, spreadsheet and graphing.
6. Prepare chemical solutions, perform dilutions, calculate solution concentrations and generate a calibration curve.

The previously described learning outcomes will be achieved through the aid of the following learning activities:

- Assigned readings and videos (handouts and Internet resources)
- Class lecture presentations and demonstrations (may also be available as videos on the Lamakū site)
- Quizzes and examinations
- Weekly lab and homework assignments
- Course administration via the Internet (Lamakū)

Course Materials

Required

- Regular access to a computer with internet access (desktop or laptop).
    - Windward offers free laptop and WiFi hotspot check-out to students (first-come, first-served), as well as software and other tech discounts; see Ka Piko Student Tech Support for information.
    - UH Online provides an online learning Readiness Activity and an Orientation to Online Learning that Windward CC students may take to see if online learning is a good fit.

- Other materials and resources will be made available in class or on the Lamakū site. Additional required CORS 123 materials will be posted in Lamakū Content.

Lamakū Learning Management System (https://lamaku.hawaii.edu/d2l/home)

Learn about the Hawaiian meaning of the word "lamakū": Lamakū Pronunciation, Meaning, and Importance.

- UHCC Lamakū Student Resources (how-to videos)
    - Contact UH ITS for 24/7 Lamakū assistance.
- Keeping Accessibility and UDL in Mind
    - If you find any course content that needs remediation and/or updating, please kindly share and I will immediately work to make the content accessible.
- Lamakū courses will appear 5 days before the first day of the academic term and will become inactive (no longer be available to access) 3 weeks after the end of the term. Be sure to save any coursework you may need from Lamakū *during* the term.
- Lamakū automatically logs you out *if it does not detect activity for three hours*. A warning message will appear, notifying you of the lack of activity. Activity is defined as clicking a button in Lamakū, such as "Save Draft" or "Next" (in a test), clicking on a course tab, or taking an action that sends information to the server.

Other Technology

D2L Brightspace, the parent company of Lamakū, recommends users choose the latest versions of Google Chrome, Mozilla Firefox, Microsoft Edge, or Apple Safari as their internet browser.

We recommend that students update their internet browser at the start of each term, search for how to allow pop-up windows, adjust their cookies, and clear device history. Also, fully restart your computer and/or device from time to time to optimize performance.

Review the privacy/security policies before using the technologies we will be using in this class. Contact me if you would like to discuss the use of alternate options or technologies.

- Adobe Reader is used to read course PDF files (accessibility statement, privacy policy)
- Google Drive is UH-provided cloud storage (accessibility statement, privacy policy)
- Google Docs is used to create documents (accessibility statement, privacy policy)

- YouTube is used for delivering some of the course content (accessibility statement, privacy policy)
- Zoom is used for the Synchronous Sessions and virtual office (accessibility statement, privacy policy)

Grading Policy

Assessment, Tasks, and Grading

Attendance & Grading Attendance/Participation
Students are expected to complete the work associated with each week's experiment within the allocated time frame.
Evaluation and Feedback
The instructor will attempt to grade work and provide feedback within one week.
Late Work
A 10% per day penalty (up to 30%) will be applied to all late reports. No work will be accepted later than one week 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 read and complete the pre-lab. This pre-lab quiz MUST be completed before the Experiment and access will close at exactly 12:30 pm on the day the experiment is available.
Reports
Whether you are doing at-home or in-lab experiments, each lab includes worksheet reports that will be used to record data and observations during the experiment (or you will be provided with your own personal set of data). You should allocate 4-6 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.
Lab Safety
At-home lab.
All experiments will be performed virtually and will not involve any chemicals.
Campus lab.
For in-person labs, you will watch the instructions provided during the pre-lab session and set up the required equipment. Your instructor will be providing additional information as needed. In lab, you will carry out the procedure, record your observations and data, and perform the necessary calculations.
We will be working with potentially hazardous chemicals. You must wear your safety goggles/glasses **at all times** when in the laboratory – not just when performing experiments. Glasses must be worn to cover your eyes – not on your forehead/head. If I have to remind you more than once, you may be asked to leave the laboratory and will earn a zero for that experiment.
You must wear **closed-toed shoes** to protect your feet from chemicals or objects that may fall to the ground. No sandals, slippers, or any footwear that does not completely cover the foot will be allowed in the lab. No shoes – no lab experiment –> grade = 0. A lab coat is recommended but long pants and long-sleeved tops are acceptable, preferably made of natural materials as synthetic materials can easily catch on fire and stick to your skin. If you are wearing a short sleeve top, shorts, or any garment that exposes legs/arms, you must wear a long lab coat over your clothes. The lab coats should be long enough to provide protection from chemicals.

No food, no chewing gum, no drinks (including water bottles) allowed at any time during the lab. It is easy to contaminate your food and drinks, and minute amounts can be very harmful when ingested. You must wash your hands thoroughly with soap and water after completing an experiment (even if you wore gloves) and before consuming any food/drinks.
Treat chemicals with respect, keep your work area clean and wipe up any spills. Return reagents to their proper place, replace lids on bottles, and dispose of all chemicals according to the directions provided in the experimental procedure. You are responsible for your safety and the safety of others and should report ALL unsafe situations or incidents to the instructor. The last 10 minutes of class will be allocated to cleaning your workspace and equipment and putting everything away in its place.
This is worth repeating. Please work away from electronic devices, water is hazardous to computers and phones! Why am I saying that? I've seen a couple of computers getting fried over the years, it would be a shame if yours was the next one.
A high level of maturity and professionalism is expected in the lab. Distractions which will not be tolerated include: talking loudly responsible, audible cell phones, listening to devices using headphones/earbuds, texting, social media use, making offensive remarks, eating in class, sleeping in class (!), packing and leaving class early (unless you have notified the teacher), and arriving late. You will be given ONE warning – if the behavior continues you will be asked to leave the class and marked absent.
Before leaving the laboratory, you must show your results to your instructor who will verify if your results make sense and will dismiss you.

Data

You will be working in groups of two for these experiments and every person is responsible for participating and collecting data.
When recording data, write down the precision/units of the instrument used (for example, your balance should weigh to two decimal places, so you would record a reading at 10.45 grams).
Before dismantling your experiment setup, you should do a quick calculation to see if the data makes sense. Do NOT make up data to try to match expected results, this is unethical and dishonest and will be obvious to your instructor. Instead, try to provide an explanation as to why the results were not as expected.
There will be one final exam (120-minute duration) administered via Laulima. It will be open-book.

Weekly Experiments - Recipe for Success

• Prepare before each lab session so you're ready to ask questions if needed – read the experiment, complete the pre-lab assignment.
• Check the Lamaku homepage weekly for announcements and update/important information.
• Check your email 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 435 points.
1. 12 Experiments Worksheets (25 points each) – 300 points
2. 12 Pre-lab Quizzes (5 points each) – 60 points
3. Final Exam– 75 points

Students can check their grades and examination scores on Lamaku gradebook at any time.

Final Grade

Grades of I, W, CR, CN are described in the current college catalog. The last day for withdrawals (W, CR, CN) is **November 2, 2026**, after that date, the instructor will sign withdrawals only in cases of extreme or unusual circumstances, such as 1) a certified medical reason, or 2) a death in

the immediate family. Grade related excuses are unacceptable. 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:

Grading Scale

A = 90-100%
B = 80-89.9%
C = 70-79.9%
D = 60-69.9%
F = 0-59.9%

Course Schedule

Students may check the Windward Student Notifications page on the website for canceled classes and/or school closures.

Tentative Course Schedule

The following schedule is subject to change. Should changes occur, you will be notified by email. Please note the highlighted entries for the midterm and final exams. All due dates are on Monday prior to the start of class.

Week	Date	Event	Topic/Event
1	Aug-24	Lab Intro	Laboratory Safety and Procedures, Math and Labware
2	Aug-31	Lab 1	Scientific Measurement and Density
3	Sept-7		Holiday
4	Sept-14	Lab 2	Determination of Chemical Formula
5	Sept-21	Lab 3	Types of Chemical Reactions
6	Sept-28	Lab 4	Stoichiometry Experiment
7	Oct-5	Lab 5	Titration of Acetic Acid In Vinegar
8	Oct-12	Lab 6	Calorimetry
9	Oct-19	Lab 7	Calorimetry and Hess’s Law
10	Oct-26	Lab 8	Beer's Law Investigation
	Nov-2	Note	Last day to withdraw with a W grade
11	Nov-2	Lab 9	Conductivity of Solutions
12	Nov-9	Lab 10	Periodic Trends
13	Nov-16		Review/Catchup/Full lab writeup
14	Nov-23	Lab 11	Lewis Structures and Molecular Shapes
	Nov-26/27		Holiday
15	Nov-30	Lab 12	Pressure-Volume and Pressure Temperature Relationships
16	Dec-7	Exam	Covers All Labs

Academic Integrity

Work submitted by a student must be the student's own work. The work of others should be explicitly marked, such as through the use of quotes or summarizing with reference to the original author.

In this class, students who commit academic dishonesty, cheating, or plagiarism will have the following consequence(s):

- Students will receive a failing grade for plagiarized assignments.
- All cases of academic dishonesty are referred to the Vice Chancellor for Student Affairs.

Windward CC Student Conduct Information

UH System Student Conduct Policy EO 7.208

Artificial Intelligence

Generative AI Misuse

In this course, students are not permitted to use generative AI applications such as, but not limited to, ChatGPT, Bard, or Bing, in whole or in part, to generate course materials, assignments, or assessments unless explicitly approved the instructor. Grammar and spell checking tools such as those integrated into MS Word may be used. Violation of this course policy is an act of academic dishonesty as covered in the system-wide UH Student Conduct Code.
Citations: Do not use citations to external sources generated by AI; they are likely to be false. Only include citations to sources you have personally checked.

Student Kuleana

- Please review our Hawai'i-Style Netiquette, which blends the values of ALOHA with approaches to how we should consider treating each other online.
- Students should allocate 4-6 hours per week to complete each experiment and work on assignments/reports.
- Windward CC has Grievance Procedures in place, but I encourage us to try to work together first to see if we can work through any troubles. Mahalo!

Academic and Technical Support

Academic Support

- Windward Community College Library
- Library eResources
- Library Research Units (LRUs)
- Ka Piko Tutoring Services: Math Lab, Speech Lab, Writing Lab, ʻŌlelo Hawaiʻi Lab
- Online Learning at Windward Community College
- STAR Balance

Technical Support

- UH ITS Help Desk: email help@hawaii.edu or call (808) 956-8883 (or 1-800-558-2669) for Lamakū and most technology support. Available 24 hours a day, 7 days a week, including holidays.
- Student Tech Support: email winhelp@hawaii.edu, call (808) 235-7437, or stop by in person at Hale Laʻakea 228. Available Monday–Friday from 8:00 am–4:00 pm.
- Lamakū: Click on the Lamakū Help link in the menu bar at the top of the Lamakū homepage to fill out and submit a question and get your answer via email.
- Information Security for Students

College Policies & Support Services

Your instructor may also provide additional resources in your Lamakū course.

Basic Needs

Basic needs include food and housing, childcare, mental health, financial resources, and transportation. Student basic needs security is critical for ensuring strong academic performance, persistence and graduation, and overall student well-being. If you or someone you know is experiencing basic needs insecurity, please see the UH System Basic Needs.

Disabilities Accommodations Statement

Windward Community College's Disability Student Services Office (WCC-DSSO) is committed to providing equal access to qualified students with disabilities.

If you have a physical, sensory, health, cognitive, or mental health disability that could limit your ability to participate fully in this class, you are encouraged to contact the Disability Specialist Counselor, Roy Inouye, to discuss reasonable accommodations that will help you succeed in this class. The Disabilities Counselor can be reached at (808) 235-7448, wccdsso@hawaii.edu, or stop by the office (Hale Kakoʻo 106) for more information.

Financial Aid

If you are receiving financial aid and are contemplating not completing the course it is highly recommended that you contact the Financial Aid Office at (808) 934-2712 or email them at wccfao@hawaii.edu ***BEFORE*** you withdraw to discuss the impact this decision may have on your financial aid eligibility.

LGBTQ+

The University of Hawaiʻi system and Windward Community College are committed to building an inclusive community that supports and advocates for all students, staff, and faculty. We welcome all members of our campus community to our campuses: transgender, māhū, and people of all gender identities. All members of our campus community deserve a work and educational environment free from harassment or bullying based on their sexual orientation, gender identity,

or expression. For more information, see the University of Hawai'i Commission on LGBTQ+ Equality. Windward Community College Commissioner: Scott Sutherland, scottjks@hawaii.edu

Mental Health Counseling

Mental Health and Wellness at Windward Community College provides counseling services and activities on campus to support students' life goals as well as their academic goals. Information about services can be found at WCC Mental Health & Wellness.

Student Conduct Code

Windward Community College follows the University of Hawai'i Code of Student Conduct which defines expected conduct for students and specifies those acts subject to University sanctions. Students should familiarize themselves with the Code of Student Conduct since, upon enrollment at Windward Community College, they have placed themselves under the policies and regulations of the University and its duly constituted bodies. The disciplinary authority is exercised through the Office of the Vice Chancellor for Student Affairs. Copies of the Student Conduct Code are available at the Office of the Vice Chancellor for Student Affairs.

TRiO Program

The Federal TRiO Programs are educational opportunity outreach programs designed to motivate and support students from disadvantaged backgrounds. TRiO includes six outreach and support programs targeted to serve and assist low-income, first-generation college students and students with disabilities in progressing through the academic pipeline from middle school to post-baccalaureate programs. Information about services can be found at Windward CC TRiO.

Title IX - Sex Discrimination And Gender-Based Violence Resources

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:

Desrae Kahale, UH System Confidential Advocate
Phone: (808) 235-7393
Email: advocate@hawaii.edu
Office: Hale Kākoʻo 101

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

Mykie E. Menor Ozoa-Aglugub, J.D., Title IX Coordinator
Phone: (808) 235-7468

Email: mozoa@hawaii.edu
Office: Hale Kākoʻo 109

Karen Cho, Deputy Title IX Coordinator
Phone: (808) 235-7404
Email: kcho@hawaii.edu
Office: Hale ʻAlakaʻi 120

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, refer to the University's Title IX resources, and the Universityʻs Policy, EP 1.204.

UH Alerts

The UH Alert emergency notification system alerts the university community in the event of a natural, health or civil emergency. The information you provide will only be used in the event of an emergency that impacts the health and safety of the UH community or the closure of whole campuses. It will not be shared with others or used for routine UH communications or announcements. To sign up, visit UH Alerts for more information.