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

General Chemistry 1

Chem161

Fall/2026
3 Credits | CRN 62154

* 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 161**. 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 9:30 – 10:30 am 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

Basic principles of inorganic chemistry with an emphasis on problem solving. First course of a two-course sequence designed to meet the one-year General Chemistry requirement for pre-med, science and engineering majors. Topics include chemical calculations, electronic structure, chemical bonding, states of matter and solutions.

Recommended Preparation
Student should have taken high school chemistry, CHEM 100, or CHEM 151.

Prerequisites
A grade of “C” or better in Math 103 or higher, or placement into Math 135 or consent of instructor

Corequisites
Registration in CHEM 161L.

Student Learning Outcomes

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

- Use the mole concept in solving stoichiometry problems involving solids, liquids, gases and solutions.
- Balance chemical equations, classify reactions, identify and analyze the role of the chemicals involved in chemical reactions.
- Predict the behavior of gases while undergoing changes in volume, pressure, temperature and quantity.
- Manipulate thermochemical equations and calculate the amount of energy involved in chemical reactions.
- Predict physical and chemical properties of elements based on electronic structure and location in the Periodic Table.
- Predict physical and chemical properties of compounds based on chemical bonding, geometry and intermolecular interactions.

Course Materials

Required

• We will be using the following text: Chemistry 2e, which is available for free from OpenStax. This text can be accessed via an online reader (recommended) or downloaded as a pdf file at the following website: https://openstax.org/details/books/chemistry-2e

• Online homework assignments will be done through Aktiv Chemistry (formerly Chem 101). Online access is through their website (https://aktiv.com) and/or through an app that you can install on a smart phone. You will need to purchase an access code online. For instructions on how to set up your account, go to the “General Course Information” tab on the left side of our course website on Laulima and click on the "Getting Started With Aktiv Chemistry" link.

• Course website: Lecture videos, copies of the lecture slides, exam study guides, and announcements will be posted on our course website. There will also be links to online tutorials and interactive exercises that you can work with for extra practice.

• You will need to have a standard scientific calculator and Internet access.

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 for 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

Grades will be based on the following categories:
1) Attendance (20 points)
2) Homework (80 points)
3) Midterm Exam 1 (100 points)
4) Midterm Exam 2 (100 points)
5) Midterm Exam 3 (100 points)
6) Final Exam (100 points)
500 points total

Grading Scale

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

A = 100 - 90.0 %
B = 89.9 - 80.0 %
C = 79.9 – 70.0 %
D = 69.9 – 60.0 %
F = below 60 %

Curving may be employed if deemed necessary.
Grades of I, W, CR, NC are described in the current college catalog. Changing from letter grading (A-F) to CR/NC option must be done by the deadline for the current term – this must be discussed previously with the instructor.

• Daily attendance: Attendance will be checked at the beginning of each class period. You are required to attend every class. Class attendance is worth 20 points, which is 5% of your grade.

• There are eight homework sets, one for each chapter, worth 10 points each. The assigned problems are selected from the end-of-chapter exercises and are listed below. Answers to most exercises are located at the end of the textbook. Each homework set is due the day after the lecture for that chapter is completed.

Chapter 1: 1, 3, 8–14, 17, 19, 23, 25, 27, 29, 33, 34–40, 45, 47, 49, 51, 53, 55, 57, 61, 63, 69, 71, 73, 81, 89, 93

Chapter 2: 1, 5–7, 11, 16, 19, 23, 27, 29, 31, 37, 39, 41, 43, 47, 49, 51, 53, 55, 57, 59

Chapter 3: 1, 3, 5, 9, 13, 17, 21, 23, 25, 27, 29, 31, 33, 39, 41, 43, 47, 49, 53, 55, 59, 63, 65, 69, 71, 75

Chapter 4: 1, 3, 5, 9, 11,12, 28, 21, 25,17,19, 23, 39, 41, 43, 47, 49, 53, 57, 61, 63, 67, 71, 73, 79, 93

Chapter 5: 1, 3, 5, 7, 9, 11, 16, 17, 29, 33, 39, 41, 48, 49, 51, 55, 58, 60, 63, 65, 67, 69, 73, 77

Chapter 6: 1, 3, 17, 27, 29, 31, 33, 35, 39, 41–43, 49, 51, 53, 55, 57, 59, 61, 64, 67, 69, 73, 75, 81

Chapter 7: 1, 3, 7, 11, 13, 15, 17, 23, 25, 29, 35, 39, 45, 51, 52, 55, 60, 64, 67, 73, 79, 85, 91, 93, 97, 101, 109

Chapter 8: 1, 3, 5, 8, 10, 12, 15, 20, 21, 23, 25, 27, 29, 30, 41, 50

Chapter 9: 1, 3, 7, 9, 15, 19, 21–26, 29, 31, 33, 37, 43, 45, 49, 51, 59, 65, 71, 75, 85, 87, 89, 91, 95, 99, 101

• Midterm Exams: Three midterm exams will be given during the course. The exams are not cumulative and will cover only the chapters specified for each exam. Exams are closed-book; no notes or other outside materials will be permitted. A standard periodic table of the elements will be provided for use during each exam. Values for certain scientific constants will also be

provided. The specific constants that may be provided will be discussed during lecture and identified in the exam study guides posted on the course website. **Please remember to bring a calculator to each exam.**

• Final exam: The final exam is cumulative, covering chapters 1-9.

• Late and Missing Work: Assignments must be submitted by the stated due date and time. Assignments submitted late or not submitted will receive a grade of zero, except in cases of documented circumstances beyond the student's control or when prior arrangements have been made with the instructor. Students are responsible for contacting the instructor as soon as possible if circumstances beyond their control prevent them from completing an assignment on time.

• Extra Credit: Extra-credit opportunities, if offered, will be announced to the entire class and will be available to all students under the same conditions. Individual extra-credit assignments or opportunities will not be provided to replace missing work or improve a specific assignment or exam grade.

Course Schedule

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

Chem161 Class Schedule

Week	Date	Topics
1	8/24 (Mon)	1.1 Chemistry in Context 1.2 Phases and Classification of Matter 1.3 Physical and Chemical Properties 1.4 Measurements
	8/26 (Wed)	1.5 Measurement Uncertainty, Accuracy, and Precision 1.6 Mathematical Treatment of Measurement Results
2	8/31 (Mon)	2.1 Early Ideas in Atomic Theory 2.2 Evolution of Atomic Theory 2.3 Atomic Structure and Symbolism
	9/2 (Wed)	2.4 Chemical Formulas 2.5 The Periodic Table 2.6 Ionic and Molecular Compounds
3	9/7 (Mon)	Holiday: Labor Day
	9/9 (Wed)	2.7 Chemical Nomenclature
4	9/14 (Mon)	3.1 Formula Mass and the Mole Concept 3.2 Determining Empirical and Molecular Formulas
	9/16 (Wed)	3.3 Molarity 3.4 Other Units for Solution
5	9/21 (Mon)	MIDTERM 1
	9/23 (Wed)	4.1 Writing and Balancing Chemical Equations 4.2 Classifying Chemical Reactions
6	9/28 (Mon)	4.2 Classifying Chemical Reactions (ppt/acid-base)
	9/30 (Wed)	4.2 Classifying Chemical Reactions (Redox)
7	10/5 (Mon)	4.3 Reaction Stoichiometry

		4.4 Reaction Yields
	10/7 (Wed)	4.5 Quantitative Chemical Analysis
8	10/12 (Mon)	5.1 Energy Basics
	10/14 (Wed)	5.2 Calorimetry
9	10/19 (Mon)	5.3 Enthalpy
	10/21 (Wed)	5.3 Enthalpy
10	10/26 (Mon)	MIDTERM 2
	10/28 (Wed)	6.1 Electromagnetic Energy 6.2 The Bohr Model
11	11/2 (Mon)	6.3 Development of Quantum Theory 6.4 Electronic Structure of Atoms (Electron Configurations)
	11/4 (Wed)	6.4 Electronic Structure of Atoms (Electron Configurations)
12	11/9 (Mon)	6.5 Periodic Variations in Element Properties
	11/11 (Wed)	7.1 Ionic Bonding 7.2 Covalent Bonding
13	11/16 (Mon)	7.3 Lewis Symbols and Structures 8.3 Multiple Bonds
	11/18 (Wed)	8.2 Hybrid Atomic Orbitals 7.6 Molecular Structure and Polarity
14	11/23 (Mon)	7.4 Formal Charges and Resonance 7.5 Strengths of Ionic and Covalent Bonds
	11/25 (Wed)	MIDTERM 3
15	11/30 (Mon)	9.1 Gas Pressure 9.2 Relating Pressure, Volume, Amount, and Temperature: The Ideal Gas Law
	12/2 (Wed)	9.3 Stoichiometry of Gaseous Substances, Mixtures, and Reactions
16	12/7 (Mon)	9.4 Effusion and Diffusion of Gases 9.5 The Kinetic-Molecular Theory 9.6 Non-Ideal Gas Behavior
	12/9 (Wed)	REVIEW
17	12/14 (Mon)	FINAL

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

Students may use artificial intelligence (AI) tools, such as ChatGPT, for learning, studying, and completing homework assignments. AI may be used to explain chemistry concepts, provide additional examples, help identify mistakes, and support problem-solving.

However, students are responsible for understanding the material and for the accuracy of their submitted work. AI should be used as a learning aid, not as a substitute for learning. Students should not simply copy and submit AI-generated answers without understanding them.

Unless otherwise specified by the instructor, AI use may be restricted or prohibited for quizzes and exams (assessments intended to measure a student's individual understanding and work).

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. Holding to these values are essential for our discussion assignments.
- Cell phone use in the classroom and during class time is prohibited.
- 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 Hawaiʻi 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 Hawaiʻi 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 University's 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.