

General Chemistry I

Course Syllabus

Chem 161: General Chemistry I
Spring 2023

You are at the syllabus page for the course.

Welcome

Welcome to Chem 161. This is the first part of a two semester general chemistry class. This is one of the most common classes taught in the universities across the nation. About 1/4 of all college students take this class at some point in their academic careers. This is a course most science and engineering majors have as a requirement, and many pre professional majors like Pre-Med and Pre-Pharm also have this as a requirement. I do hope you enjoy this course and it's online learning platform.

Instructor Information



Instructor: Michael Ferguson. Ph.D.

Office Hours: MT 9-11:30 AM

Virtual Office: <https://hawaii.zoom.us/j/98910339608>

Email: mferguso@hawaii.edu or use Lulima Messages tool

Phone: (808) 984-3312

Email: mferguso@hawaii.edu or use Lulima Messages tool

Note: During normal week hours I will respond within a day. On the weekend or holidays I may not respond until the following business day.

Course Information

Course Purpose

Teach the concepts of the first half of general chemistry for STEM majors.

Course 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.

Course Content

Stoichiometry, atomic theory, gas laws, thermodynamics, introduction to quantum mechanics, periodic trends, bonding, Lewis Theory, VSEPR, Molecular Orbital Theory.

Course Communication

I will send weekly announcements to the class and I will be available via email or through lulima.

Academic Prerequisites

- *ENG 22 with grade C or better or placement at least ENG 100, and MATH 103 with grade C or better or placement at least MATH 135*
- or consent

- Keyboard and [basic computer skills](#)
- Add other prerequisite skills necessary as related to your course.

Course Learning Outcomes

The learning outcomes for General Chemistry are: to understand the molecular nature of all phases of matter, to understand the various ways of depicting chemical compounds and chemical reactions, to develop an ability to solve basic quantitative problems regarding the properties of molecules, chemical equilibria, and chemical kinetics, and to develop the ability to appropriately apply this knowledge to general scientific problems in various fields of science and engineering.

More specifically, students should understand:

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

Program Learning Outcomes

1. Explain the natural and technological world using reflection and quantitative analysis including preparation of a plan to collect, process, and interpret data; evaluation of the plan, procedures, and findings; and communication of the conclusions;
2. Explain scientific knowledge and understanding to different audiences for a range of purposes; and
3. Apply scientific knowledge, skills, and understandings to problems and issues in daily life.

Required Materials and Technology

Supplies

- Tro, N. Chemistry a Molecular Approach, 6th ed. (with Masteringchemistry access)

Required Hardware and Software

- A more recent model desktop or laptop (2014 or later model), either Windows or Mac
- Reliable high-speed (Cable or DSL) Internet connection
- A recent version of Firefox Browser. Download from <https://www.mozilla.org/en-US/firefox/new/> if you don't have it.

Technical Skill Requirements

Students should be able to create and edit word documents. Students should be able to navigate lulima (sakai learning management system).

Grading Policies

Grading Breakdown

Grades will be based on the following weighted categories (subject to change):

Assessment	% of Grade
Test 1-4	10%
Tests total	40%
Homework	35%
Final	25%
Forums	0%
Total	100%

Assessment Descriptions

Tests follow each series of chapters: test 1 for CH 1-4 (Due Feb 1); test 2 for CH 5-7 (Due Mar 1); test 3 for CH 8-9 (Due Apr 5), test 4 for CH 10-11 (Due May 3); comprehensive final (Due May 12). Homework is on Masteringchemistry. Each chapter homework is due at the same time as the tests. Final exam is due May 12.

Forums are optional and are not graded.

Grading Policy

Grade	Percent
A	100-90%
B	89-80%
C	79-70%
D	69-60%
F	Below 60

No late tests will be accepted. The comprehensive final score will replace any tests missed. No late submissions on homework.

Student Accomodations

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 Accessibility 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.

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:

Jojo Miller, Confidential Advocate

Phone: (808) 348-0663

Email: advocate@hawaii.edu

Office: Hale Kāko‘o 110

Desrae Kahale, Mental Health Counselor & Confidential Resource

Phone: (808) 235-7393

Email: dkahale3@hawaii.edu

Office: Hale Kāko‘o 101

Karla K. Silva-Park, Title IX Coordinator

Phone: (808) 235-7468

Email: karlas@hawaii.edu

Office: Hale ‘Ākoakoa 220

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 mana.hawaii.edu/titleix/

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 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.

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: Alaka‘i 121
- Phone: (808) 235-7422

Academic Support Services

Please see the following link to access additional services:

<https://windward.hawaii.edu/services-for-students/>

Ka Piko Services

[Ka Piko Services](#) provides FREE academic and technical support to all WCC students. Our services are available both in-person and virtually (via Zoom). Our goals are to help students succeed academically and to become independent lifelong learners. We are staffed by friendly and knowledgeable peers who are ready to assist you!

- Ka Piko Math Lab provides assistance for all math courses offered at WCC, helping to improve students’ understanding of important concepts and problem solving processes.

- Ka Piko Writing Lab provides assistance with any and all aspects of the writing process, including: brainstorming, research, MLA formatting and citations, drafting, and revising.

- Ka Piko Student Tech. Support can assist students with Google@UH, Lulima, MyUH, UH accounts, and can provide best-effort support for problems or questions with personal computers and other smart devices.

- Ka Piko also provides free weekly Success Connection Workshops for students

Visit the Ka Piko webpage at go.hawaii.edu/A42 for more information about our services, to learn how to connect with our tutors and tech assistants, or to RSVP for a Success Connection Workshop. Contact the Ka Piko Coordinator, Scott Sutherland, at scottjks@hawaii.edu if you have any questions.