

CHEM162 GENERAL CHEMISTRY II

3 credits (CRN 64214)

Mon & Wed (10:00-11:15AM)

INSTRUCTOR:	Marc Bresler
OFFICE:	'imiloa via zoom 112B or https://hawaii.zoom.us/j/5803716362
EMAIL:	mbresler@hawaii.edu
OFFICE HOURS:	Monday 9:00-10:00 A.M. or by appt.
EFFECTIVE DATE:	Spring 2023
PHONE:	TBA

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 O'ahu's Ko'olau region and beyond with liberal arts, career and lifelong learning in a supportive and challenging environment — inspiring students to excellence.

CATALOG DESCRIPTION

Second course of a two-course sequence designed to meet the one-year General Chemistry requirement for pre-med, science and engineering majors.

Topics include thermochemistry, kinetics, acid-base equilibrium, solubility equilibrium and electrochemistry. Emphasis will be placed on problem-solving. Concurrent registration in CHEM 162L is required.

Prerequisites: A grade of "C" or better in CHEM 161, credit or concurrent registration in MATH 135, or instructor's consent. Co-requisite: Concurrent registration in CHEM 162L.

STUDENT LEARNING OUTCOMES

Upon completion of the course, the student will be able to:

1. Predict properties (boiling point, melting point, osmotic pressure, vapor pressure) of solutions based on concentrations.
2. Determine reaction rate law and calculate rate constants and half-life based on experimental data.
3. Calculate the equilibrium concentration of chemicals in solution involved in precipitation, acid-base and redox reactions.
4. Predict spontaneous reactions based on enthalpy and entropy considerations.
5. Determine the electrochemical potential of redox reactions.

COURSE TASKS

We will be covering 9 chapters over the semester which means we will be going at a brisk pace. Everyone's background is different and some of you might have taken more chemistry classes but allow for **4-8 hours of work per week** in addition to lectures. Maybe more time for some of the more challenging chapters. This includes reading the textbook, reviewing notes, and working on assignments. Here is the recipe for success:

- Show up for every class.
- Read the material before class.
- Take notes and work through problems as they are presented in class.
- Review material, ask questions to your teacher, work with classmates.
- Submit all the work on time.
- Do additional problems to prepare for exams (sourced from: libretext, chem101, sciencegeek.net, websites, instructor).
- DO NOT PROCRASTINATE and cram the night before the exam – the outcome is rarely good!

ASSESSMENT TASKS AND GRADING

Grading: The Final Grade will be based upon 900 points (the lowest score out of 100 will be dropped).

1. Worksheets and quizzes (100 points)
2. Homework and Aktiv Chemistry (100 points)
3. Mid-Term Exam #1 (100 points)
4. Mid-Term Exam #2 (100 points)
5. Mid-Term Exam #3 (100 points)
6. Presentation on topic of choice (100 points)
7. Participation/Attendance (100 Points)
8. Final Exam (either 100 or 200 points depending on score in other categories)

Extra credit: you may earn up to 25 extra points doing extra credit work which will be made available throughout the semester.

The final exam will be cumulative.

Students can check their grades and examination scores on Lulima gradebook at anytime. The gradebook is usually updated on Sundays. The following scale will be used to determine final grades:

A: 90 - 100 %; B: 80 – 89 %; C: 70 - 79 %; D: 60 - 69 %; F: below 60 %

Grades of I, W, CR, CN are described in the current college catalog. The last day for withdrawals (W, CR, CN) is **February 24, 2023**, 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 such as those listed under the withdraw policy, will be accepted.

LEARNING RESOURCES

1. Required: Internet access (with adequate software including Adobe Reader), and Lualaba.
2. Required: Access to AktivChemistry, <https://app.101edu.co/> - use the same account as last semester (if applicable). Cost 27\$.

If you are starting the course without a previous Aktiv chemistry account register with the code: ZLJDX7

3. Required: Textbook - download free pdf from: <https://openstax.org/details/books/chemistry>
Cost \$0
4. Required: Zoom access for course: <https://hawaii.zoom.us/j/98576474626>
5. Required: Scientific Calculator. Programmable calculators and cell phone calculators will NOT be allowed during exams!! Recommended: Texas Instruments TI-30XIIS Scientific Calculator
6. Required: PowerPoint Slides and worksheets. (Will be posted on Lualaba under **Resources**).
7. Highly Recommended: Tutoring at Trio (Pending COVID-19)
8. Highly Recommended: Study Hall (Pending COVID-19)

Additional Information

Schedule:

Day	Date	Chapter/ Event	Topic/Event
Monday	9-Jan	10	Liquids and Solids
Wednesday	11-Jan	10	Liquids and Solids
Monday	16-Jan	No class	MLK Day
Wednesday	18-Jan	10/11	Liquids and Solids and Colloids
Monday	23-Jan	11	Solutions and Colloids
Wednesday	25-Jan	11	Solutions and Colloids
Monday	30-Jan	12	Kinetics
Wednesday	1-Feb	12	Kinetics (**Last day to withdraw without W)
Monday	6-Feb	12	Kinetics
Wednesday	8-Feb	12	Kinetics
Monday	13-Feb	Review	Lecture
Wednesday	15-Feb	Exam 1	Good luck!
Monday	20-Feb	No class	Presidents' Day
Wednesday	22-Feb	13	Fundamental Equilibrium Concepts
	24-Feb		**Last day to withdraw with W
Monday	27-Feb	13	Fundamental Equilibrium Concepts
Wednesday	1-Mar	13	Fundamental Equilibrium Concepts
Monday	6-Mar	14	Acid-Base Equilibria
Wednesday	8-Mar	14	Acid-Base Equilibria
Monday	13-Mar	No class	Spring Break
Wednesday	15-Mar	No class	Spring Break
Monday	20-Mar	14	Acid-Base Equilibria
Wednesday	22-Mar	14/15	Acid-Base Equilibria/Other Reactions

Monday	27-Mar	Holiday	Prince Jonah Kuhio Kalaniana'ole Day
Wednesday	29-Mar	Exam 2	Good luck!
Monday	3-Apr	15	Equilibria of Other Reaction Classes

Wednesday	5-Apr	15/16	Equilibria of Other Reaction Classes Thermodynamics
Monday	10-Apr	16	Thermodynamics
Wednesday	12-Apr	16	Thermodynamics
Monday	17-Apr	Review	Lecture
Wednesday	19-Apr	Exam 3	Good luck!
Monday	24-Apr	17	Electrochemistry
Wednesday	26-Apr	17	Electrochemistry
Monday	1-May	17	Electrochemistry
Wednesday	3-May	21	Nuclear chemistry
Wednesday	11-May	Final Exam	Good luck! 11:30-1:30

Class policies:

a. Math skills and basic concepts

This course relies heavily on math including algebra, logarithms, graphing. If you feel you need to review these concepts, let me know immediately and I will suggest tools to help you. It is assumed that you have mastered the concepts of significant figures, unit conversions, calculating molar mass, balancing equations, etc... It is up to you to review these concepts as they will be reviewed only briefly in class and will be the basis for more advanced problem solving.

b. Attendance, worksheets, and quizzes

We will meet twice a week – you are expected to attend every class. Excessive absences WILL detrimentally affect your grade. Short quizzes (closed book) will be given regularly at the beginning of class – do not be late for class – there will be no make up for missed quizzes. Printed worksheets will be handed out frequently to provide additional problem practice.

The link for the class is via zoom:

<https://hawaii.zoom.us/j/98576474626>

Completed worksheets must be submitted at the beginning of the next class unless the instructor decides otherwise. The worksheets may not always be graded but answer sheets may be provided to verify your work. If you are unable to attend class, you should contact the instructor in advance to give notification of the absence and make necessary arrangements to make up work.

c. CHEM101 & Group Work

The assignments will be available on the CHEM101 website. The deadline is set on the projected date that the material will be completed in class, 10% per day will be deducted for late submissions, capped to 30% - better late than never.

d. Mid-term Exams

All exams are closed-book exams and will consist of a combination of quantitative calculations, multiple choice, matching and short-answer questions. Each mid-term exam is administered over an entire class period. Only one missed mid-term exam can be made up if it is accompanied by a valid justification (doctor's note, police report, obituary notice, etc...).

e. Final Exam

The exam will consist of multiple choice questions and quantitative answers and cover all topics presented in the course (i.e. cumulative). This exam is administered over 2 hours during 'finals week'.

The exam date and time is TBA based on WCC's finals schedule.

f. Extra credit

Additional activities such as attending chemistry forums, and participating to outreach chemistry projects will earn extra credit (up to 10 points). Opportunities will be announced in class and on the Laulima Class Homepage.

g. Classroom behavior

A high level of maturity and professionalism is expected in the class. Distractions which will not be tolerated include: talking, audible cell phones, texting, listening to audio/music, 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.

Phones! Yes, it is possible to attend 75 minutes of class without checking your phone! With that said, the CHEM101 platform can be accessed from a phone app and you will be informed when it is acceptable to use it.

h. Special learning needs

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

i. Schedule

The schedule is subject to change. Any changes to the course schedule will be announced in class and online. An announcement will be posted on Laulima and forwarded via email every weekend. You are responsible for checking your email regularly.

j. Academic Honesty

Working with others to study is encouraged but each student is responsible for presenting his/her own work at all times. Cheating on any assignment, quiz, or exam will earn you an F and the Department Head and Office of the Dean will be notified.

The rules are:

- Absolutely no talking once the exams begins. If you have a question, raise your hand and I will come to you.
- Keep your eyes on your own paper. If I see you looking at other people's paper, I will assume you are cheating and will ask you to leave the class and you will receive an F.
- No textbook, no notes, no smartphones – only pen, pencil, eraser and scientific calculator are allowed. I will provide required formulas, constants, and a periodic table. I will tell you what will be provided before each exam.
- No listening to an audio device allowed.
- For zoom exams it is expected you take them during class time with your camera on. Make up exams will not be given, however, your lowest exam will be replaced with your final exam score if applicable.

Academic Integrity

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.

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.

DISABILITIES ACCOMMODATION STATEMENT

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. Ann Lemke can be reached at 235-7448, lemke@hawaii.edu, or you may stop by Hale 'Akoakoa 213 for more information.

TITLE IX

Title IX prohibits discrimination on the basis of sex in education programs and activities that receive federal financial assistance. Specifically, Title IX prohibits sex discrimination; sexual harassment and gender-based harassment, including harassment based on actual or perceived sex, gender, sexual orientation, gender identity, or gender expression; sexual assault; sexual exploitation; domestic violence; dating violence; and stalking. For more information regarding your rights under Title IX, please visit: https://windward.hawaii.edu/Title_IX/.

Windward Community College is committed to the pursuit of equal education. If you or someone you know has experienced sex discrimination or gender-based violence, Windward CC has resources to support you. To speak with someone confidentially, contact Karla Silva-Park, Mental Health Counselor, at 808-235- 7468 or karlas@hawaii.edu or Kaahu Alo, Designated Confidential Advocate for Students, at 808-235- 7354 or kaahualo@hawaii.edu. To make a formal report, contact the Title IX Coordinator at 808-235-7393 or wcctix@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: Alakai 121
 Phone: 808-235-7422
 Email: wccaa@hawaii.edu