

GENERAL CHEMISTRY II

Chem V01B | CRN 59252 | Hyflex Format

Instructor Information

Name: Howard Han
E-mail: hhan@vcccd.edu
Office Hours: MTWR 12:20 pm – 12:50 pm @ SCI-320
MTWR After 3:00 pm (appointment)
Contact Hours: Monday-Thursday, you can expect me to respond to email within 3 hours. Messages and submissions posted after 11 pm on Thursday may not reach the instructor until Monday of the following week.

Class Information

This course presents a detailed study of chemical equilibrium, kinetics, electrochemistry, chemical thermodynamics, and a brief introduction to organic chemistry and nuclear reactions.

Course Required Materials

- General Chemistry textbook (OpenStax) : <https://openstax.org/details/books/chemistry>
 - A downloadable pdf copy of this textbook can be found on the class Canvas website
- Non-graphing, non-programmable Calculator (i.e. Ti-30Xa)
- Personal laptop/computer
- Scanning device (a scanner or mobile device with camera and scanner app)

On Campus resources:

Counseling	MESA	Library	Educational Assistant Center (EAC)	Extended Opportunity Programs and Services (EOPS)	Veteran's Affairs Office
					

Class Meetings

MTWR 1:00 pm - 2:50 pm
@SCI-222

Course Units

3.0 Units

Prerequisites

CHEM V01A with a grade of C or better.

Course Objectives

Upon successful completion of this course, the student will be able to demonstrate the following measurable skills and abilities:

- A. Apply the scientific method to chemistry data and problems, including developing hypotheses and hypothesis testing and evaluation.
- B. Solve problems involving logical reasoning in mathematics and chemistry.
- C. Solve problems involving rate laws and kinetic data.
- D. Write statements using logical reasoning to analyze chemical interactions in equilibrium and non-equilibrium conditions; correctly apply Le Chatelier's principle.
- E. Solve problems involving strong and weak acids and bases, as well as the titration of these.
- F. Solve problems involving the equilibrium of aqueous solutions and determine solubility and/or precipitation.
- G. Solve problems involving chemical thermodynamics.
- H. Solve calculations involving cell potentials, electrolysis, and free energy.
- I. Synthesize the theories of transition metal complexes and write names for coordination complexes.
- J. Solve problems involving nuclear reactions and rates of decay.
- K. Distinguish between different classes of organic compounds and name the compounds using the IUPAC system of nomenclature.
- L. Construct diagrams to illustrate the common cycles of elements and compounds in nature.
- M. Evaluate and discuss current events involving chemical phenomena.

Student Learning Outcomes

By the end of this class, you will be able to:

1. Use kinetic data to formulate chemical mechanisms and analyze the results using thermodynamic arguments.
2. Understand the concepts of equilibrium and the equilibrium constant as it pertains to acids, bases, titrations, and solubility product
3. Be able to apply the Nernst Equation to non-equilibrium systems and relate it to thermodynamic principles..

Core Competencies for the class can be found at:

http://www.venturacollege.edu/sites/default/files/imported/assets/pdf/core_competencies/corecomps_chemistry.pdf

Course Format: HyFlex

1. **Flexible Attendance Options:** Students can choose to attend class in person or over Zoom. All lectures will be recorded and streamed live via Zoom, ensuring that all students have access to the same content regardless of their chosen attendance method.
2. **Mandatory Attendance:** Regular attendance is required for all students, whether attending in person or online via Zoom. Participation and engagement are essential components of the course.
3. **Digital Homework Submission:** Homework must be submitted digitally via Canvas. Students are expected to know how to digitally write using a tablet and stylus or scan their physical work to submit online.
4. **In-Person Quizzes:** Quizzes will be conducted in person only, with no online version available. It is essential for students to attend these sessions on campus.

Classroom Policy

Attendance:

Each class covers half to an entire chapter or more of material, including examples that resemble questions on your quizzes and exams. Doing well in this course requires your initiative and involvement at all times. Attendance is mandatory and will be taken every class, whether you attend in person or via Zoom. School policy states that students missing two weeks' worth of class may be dropped and receive a W in the course. If an emergency keeps you from class, it is your responsibility to speak to me beforehand or as soon as possible to catch up on what you have missed. Absence is not a valid excuse for missing assignments and cannot be used to avoid late penalties or to make up quizzes or in-class activities.

Classroom Conduct:

Always come to class prepared with your notebook, calculator, writing utensils, and full attention. Professional courtesy is required in the classroom at all times, whether attending in person or via Zoom. This includes, but is not limited to, punctuality, turning off or silencing all electronic devices, refraining from talking or other disruptive behavior during class, and treating classmates and myself with respect. If you are being distracting to yourself, me, and/or the students around you, you will be warned. If the behavior is repeated, you will be asked to leave the class, points will be deducted, and the incident will be reported to the Behavioral Intervention Team.

Academic Integrity:

Cheating on or plagiarizing any assignment or examination is a serious breach of the Student Code of Conduct, is strictly prohibited, and will result in a zero for that assignment and a report sent to the Behavioral Intervention Team and Student Services. Cheating includes, but is not limited to, talking and using notes, references, or prohibited electronic devices during exams or quizzes or any other advantage not available to all students in the class. Plagiarism is copying homework assignments from online resources, tutors, or other students. Cheating, however minor or major, is always unacceptable no matter the circumstances.

Grading Policy

Throughout the semester, the grades for all assignments will be posted on Canvas so that the current progress can be tracked by students. The final letter grade will be assigned based on the final point total of each student. Final grades will be considered conclusive and will not be rounded.

Evaluation of Student Performance:

- **Quizzes** (7 total): 50 points each, totaling 350 points.
- **Homework (Worksheet)** (7 total): 50 points each, totaling 350 points.
- **Homework (Error Analysis)** (7 total): 20 points each, totaling 140 points.
- **Week 0 Assignments** (2 total): 10 points each, totaling 20 points.
- **Attendance:** 100 pts
- The total points available in this grading system are 960 points.

Grade Scale:

- A: 90%-100%
- B: 80%-89%
- C: 70%-79%
- D: 60%-69%
- F: 59% or lower

Quizzes:

Quiz will be given as the schedule indicates. Many questions will be similar in nature to the homework problems assigned in class. Expect questions not exactly like those on your homework as well. Any material covered in class, in assigned sections of the book, or in homework problems may appear on the tests. Most questions on the quiz will be short answer or require mathematical calculations. You will always be allowed and required to bring a calculator for every exam; sharing calculators or using phones is not allowed. If you require alternative classroom or test accommodations, please contact me and the Educational Assistant Center at 289-6300 so that your needs can be met as soon as possible.

Homework:

Worksheet:

Chapter Worksheets: For each chapter, students will receive a comprehensive worksheet. Completion of these worksheets is mandatory and serves as an integral part of their preparatory work. These worksheets are designed to reinforce key concepts and ensure a thorough understanding of the chapter material.

Exam Error Analysis:

After each quiz, students are required to conduct a detailed analysis of their performance. This involves a meticulous review of the exam to identify and correct any incorrectly answered questions. Students must not only correct their answers but also provide in-depth explanations for their initial errors and articulate specific strategies to prevent similar mistakes in future assessments. This reflective exercise is crucial for fostering a deeper understanding of the subject matter and enhancing exam-taking skills.

Tentative Schedule

Week	Monday	Tuesday	Wednesday	Thursday
1	6/17 Ch 12. Kinetics	6/18 Ch 12. Kinetics	6/19 No Class (Juneteenth)	6/20 Ch 12. Kinetics
2	6/24 Quiz 1 (Ch 12)	6/25 Ch 13. Fundamental Equilibrium Concepts	6/26 Ch 13. Fundamental Equilibrium Concepts	6/27 Quiz 2 (Ch 13)
3	7/1 Ch 14. Acid-Base Equilibria	7/2 Ch 14. Acid-Base Equilibria	7/3 Quiz 3 (Ch 14)	7/4 No Class (Fourth of July)
4	7/8 Ch 16. Thermodynamics	7/9 Ch 16. Thermodynamics	7/10 Ch 16. Thermodynamics	7/11 Quiz 4 (Ch 16)
5	7/15 Ch 17. Electrochemistry	7/16 Ch 17. Electrochemistry	7/17 Ch 17. Electrochemistry	7/18 Quiz 5 (Ch 17)
6	7/22 Ch 19. Transition Metals and Coordination Chemistry	7/23 Ch 19. Transition Metals and Coordination Chemistry	7/24 Ch 19. Transition Metals and Coordination Chemistry	7/25 Quiz 6 (Ch 19)
7	7/29 Ch 21. Nuclear Chemistry	7/30 Ch 21. Nuclear Chemistry	7/31 Ch 21. Nuclear Chemistry	8/1 Quiz 7 (Ch 21)