SOUTHERN CALIFORNIA UNIVERSITY OF HEALTH SCIENCES

Syllabus Table of Contents

COURSE INFORMATION

Course Number (Prefix Code): CHEM216

Course Name: General Chemistry II Lecture

Course Description: The General Chemistry II course further develops the concepts of chemical bonding in order to appreciate the size, shape, polarity, and macroscopic behavior of molecules. The processes of oxidation-reduction will be explained, particularly as they apply to biological systems. Solution chemistry will be introduced, stressing the concepts of kinetic equilibrium and colligative properties. Acid/base chemistry, including titration, buffers, pH and thermodynamics will be studied.

Course Delivery Model(s): Online, Online-Interactive

Time Requirement:

Lecture Hours per term:	45 Hours
Course Duration (weeks):	5
Credits:	3

Credit Hour Verification:
This list represents the average amount of time a student is expected to spend to successfully complete this course.

	Activity Type	Online-Interactive Hrs/wk	Online (Self-paced) Hrs/wk
Course Time	Lecture Attendance	9	0
Lecture Engagement	Discussion Posts / Participation	2	2
	Video Lectures	0	0.5
	Quizzes (outside of class)	1	1
	Exams (midterm/finals)	1	1
	Homework (Including Learning Curve)	3	6
Preparation and Study	Study time (assessment prep)	6	8.5
	Reading	4	7
Other	Exams (outside of class)	1	1
Total	Total per week	27	27
	Total per course	135	135

LEARNING OUTCOMES, OBJECTIVES, & ALIGNMENT

Student/Course Learning Outcomes

In successfully completing this course, you will be able to:

SLO/CLO
1. Describe how the properties of solids, liquids, and solutions determine the chemistries that occur within them.
2. Predict the rates at which reactions occur by identifying the factors that influence those rates.
3. Describe chemical equilibrium.
4. Determine the equilibrium concentrations of acid/base, aqueous complex, and other reactions.
5. Use the principles of chemical thermodynamics to predict reaction outcomes.
6. Describe how electrochemistry determines electrochemical phenomena.

TEXTBOOKS & MATERIALS

Required Textbook(s): White, J., Anderson, B., Green B., and Hall, M. *Chemistry: Achieve for Interactive General Chemistry* ISBN: 9781319257866, 1st edition, 2021.

An electronic version will be provided on Canvas.

Required Material(s): Working computer with a strong internet connection and a scientific calculator: *Graphing or text-memory calculators are not allowed for use during quizzes or exams in the lab. If you bring one you will have to take your quiz without a calculator. You are encouraged to obtain a scientific calculator with exponents and logarithms immediately, rather than the day before a quiz or an exam. It is important to be comfortable with the calculator that you are using, rather than to be struggling to locate the keys for certain mathematical operations. For example, a TI-30X IIS is acceptable.*

Expectations for Online and Online Interaction Participation: All lectures will be recorded and made available to the full class. All assignments will also be posted on Canvas and exams will be administered electronically. Thus, all lecture materials will be made equally available to synchronous and asynchronous students.

Asynchronous students are expected to view all lectures after they are posted. Delaying the viewing of these lectures can significantly hamper your performance in the course as the lectures are critical to your understanding.

Technology Requirements:

External Resources: MacMillan Achieve Platform

Learning Management System: is Canvas. If you are not familiar with using Canvas, please visit the manuals and learning guides available in the Canvas Student Guide. It is important that you are comfortable and competent in using this; all course material and communication will be done via Canvas.

Navigating Canvas – the Canvas site has a large set of Canvas tutorials and videos for students

Browser and Computer Requirements for Canvas

Examination System: Proctorio. We will be using the Proctorio Online Exam Proctoring Service in this course. Proctorio is a software extension in Chrome that uses your computer's screen, web cam, and microphone to create a remote proctored environment, and enables students to take exams via Canvas from any remote location. *Students must have a strong and stable internet connection for Proctorio to work well.* During exams, students, the computer, and the surrounding environment may be recorded.

For information about Proctorio's privacy policies, please visit OIT's Proctorio Privacy page. In addition to the instructor(s) and Teaching Assistants(s) of this course, Proctorio and SCU Proctorio administrators are the only ones who will have access to the recordings. The Chrome browser extension must be installed before students can take any exam, and it can be removed once an exam is complete.

There will be an initial practice exam for students to become familiar with using Proctorio, which allows students to identify any potential issues prior to using this examination system.

Suggestions for completing online coursework: Save work often; this includes backing it up on multiple devices or cloud applications. When submitting final papers on the Canvas learning management system (LMS), ensure that all files have been uploaded properly. Also make sure to keep a hard copy of all papers/projects in case of an unforeseen technological failure or outage.

***Optional* External Resources:**

- OpenSTAX Chemistry Course: https://openstax.org/details/books/chemistry-2e
- Khan Academy Chemistry Library: https://www.khanacademy.org/science/chemistry
- Libretexts Chemistry: https://chem.libretexts.org/Bookshelves
- ChemCollective: http://chemcollective.org/home
- EdX General Chemistry I: https://www.edx.org/course/atoms-molecules-and-bonding?index=product&queryID=d80d21b6b8bc09a5019fedfdf12219e5&position=1
- EdX General Chemistry II: https://www.edx.org/course/chemical-equilibrium-and-kinetics?index=product&queryID=672023889fe93eb7bf3def840079ba71&position=2

EVALUATION OF STUDENT LEARNING

Grading scale:
Letter grade ("D" allowable): Undergraduate and Certificate Programs, Accelerated Sciences Courses
A = 90% - 100%
B = 80% - 89.99%
C = 70% - 79.99%
D = 60% - 69.99%
F = 0.0% - 59.99%

Lecture Assessments:

Assessment Name	# of assignments	Points Each	Weight	SLO Linkage
Pre-Lecture Activities	8	10	10%	1-6
Participation and Discussion boards	5-10	5	10%	1-6
Adaptive Module Quizzes (Learning Curve)	8	25	25%	1-6
Homework	8	20	15%	1-6
Exams	2	100	40%	1-6

Course Topics:

Module	Title	Topic	Assessment Activity	SLO Linkage
1	Liquids & Solids	Introduction to Liquids, Solids Solutions	Formative quizzes, homework, participation, learning curve	1
2	Kinetics and Equilibrium	Chemical Kinetics Chemical Equilibrium	Formative quizzes, homework, participation, learning curve	2, 3
3	Acid-Base Theory & Aqueous Equilibria	Acid-Base Theory Aqueous Equilibria	Formative quizzes, homework, participation, learning curve	4
Midterm Exam				1, 2, 3, 4
4	Thermodynamics	Chemical Thermodynamics	Formative quizzes, homework, participation, learning curve	5
5	Electrochemistry	Electrochemistry	Formative quizzes, homework, participation, learning curve	6
Final Exam				5, 6

UNIVERSITY POLICIES

All university policies apply to this course and all others. For full policy information please consult the SCU Catalog. Additionally, program policies apply to students in each program as described in the Catalog and in SCU Health Handbook for clinical courses.

Drop Date: It is your responsibility to understand when you need to consider unenrolling from a course. Refer to the SCU Academic Calendar for dates and deadlines for registration. Refer to SCU Academic Policies for information about the drop period.

Incomplete Policy: Under emergency/special circumstances, students may petition for an incomplete grade. See the SCU Catalog for Policies about Incomplete Grades

Academic Integrity: As a student at this university you are expected to maintain high degrees of professionalism, commitment to active learning, and integrity in and out of the classroom. See the SCU

Academic Integrity Code.

Accessibility Services and Accommodations: The Office of Student Services provides support to students with disabilities requiring accommodations in concert with the lead faculty for this course. All students are encouraged to request accommodations as far in advance of when the accommodation will be required as possible to allow the University to process the request and provide approved accommodations. To begin the process please request a consultation with the designated Accessibility Services Officer as soon as possible. Once the Office of Student Services approves the request, the letter of accommodation will be provided to the student and lead faculty member via email. The student should be certain to follow-up with the lead faculty member to plan for the specific accommodation needs for the course. Program requirements cannot be modified to accommodate a disability. Please see the catalog for details regarding Accessibility Services and Accommodations .

Learning Resource Center: Students can use the library's resources which provide students with an excellent collection of books, journals, electronic databases, and websites as well as consult with the librarian to help with the course.

Online Etiquette: In general, behavior in an online classroom should emulate the professional behavior expected in an on-ground classroom with a few additional requirements:

- Avoid using text slang and abbreviations such as "u" (instead of "you"), "TLDR" (Too Long, Didn't Read) or "TBH" (To Be Honest) - not everyone knows what they are. Do not use ALL CAPS for entire sentences or posts - this is seen as yelling at someone.
- Any form of personal attack or inappropriate response with other students or faculty is unacceptable. We will remove any discussion posts showing this and warn the author.
- If you disagree with someone's comments, do so respectfully and collegially, and provide legitimate examples to support your side. Try to find something to complement in the other's comments.
- Before you press the submit button, review your comments, making sure nothing is coming across as defensive, too "know-it-all" or critical, or academically inappropriate. It is easy for someone to misinterpret your meaning when they cannot see your expression or hear the tone of your voice.
- Avoid short, generic replies such as "I agree!", "I like it!" or "Funny!" – explain why you agree, add another point in support of the idea, or raise a question.

Attendance: SCU policy defines attendance for all courses and specifies online courses as active, weekly participation in the course as described in the syllabus. Examples of activities could include, but are not limited to:

- Participating in weekly online discussions
- Submitting or completing assignments
- Commenting on other student contributions
- Actively logged on and participating in class at least three times per week

See the Academic Policies page in the SCU Catalog for more details on Attendance Policy.

Course Specific Policies

Participation: Students are expected to actively participate in the course by completing assignments and activities in the course. To maintain "active participation," you have to complete at least 60% of the assigned work, including quizzes, activities, and discussion posts, on time, contribute fully to the general activities of the course, and access the course at a level that allows you to succeed in the course.

Late Assignments and Exams: Your instructor will post assignments by 12:01 a.m. Pacific Time at the start of each week. You are expected to have all your submissions for the week completed by the due dates and times listed. The instructor reserves the right to make changes to the schedule if necessary.

Late work is not accepted. The online learning environment is an INTERACTIVE environment - your classmates depend on you to submit on time so that they can produce on-time responses to your work.

Commitment to Honesty and Respect: In this class, we seek to create a classroom community in which the rights, dignity, and worth of every individual are respected. This includes use of respectful language, paying full attention to the words and works of our peers, exploring our own biases, and giving and receiving feedback as we work and learn together. Please speak up if I or any member of the community behaves in a way that undermines the security and effectiveness of our time together.

Recommendations for Success:

- Learning chemistry requires a significant time commitment. This commitment not only involves attending lectures, but actively studying both before and after each lecture.
- Successful students don't wait until exam time to begin studying. Instead, every hour spent in class requires two to three hours of effort outside of class to succeed in this course. For example, if you've just been assigned reading on the "stoichiometry;" don't let a day go by without learning how to balance reactions and convert among different quantities. All of chemistry necessitates an understanding of stoichiometry and this will be part of most lectures, quizzes and exams. Procrastination doesn't simply mean that you won't understand stoichiometry—you'll also face difficulty understanding all of the following material.
- Read before and read after each class. Skim the chapter before it is covered in class to become comfortable with some of the terms associated with each topic. Then, review the material after class to enhance your understanding of what was covered.
- Participate during class: Take notes during class and review them afterwards. Don't skip classes, arrive late, or leave early. Ask questions for clarification when you don't understand the material.
- Stay on top of the homework assignments: Work on them soon after lecture to increase the depth of your understanding of specific structures. This will help you learn the material more efficiently and effectively.
- Do not wait till the last minute to start working on an assignment. You will get more out of it if you take the time to really learn the facts and review the material without being rushed.
- Form and join a study group. Seek out those students who strive to excel in the course. This makes studying more fun and helps you learn the material better. If you can explain what you learned to another student, then you know the material. Exchanging knowledge reinforces each and everyone.
- Stay focused by finding an environment where you can study with few distractions.

Specifically for synchronous courses:

- Ask questions for clarification when not understanding the material being covered.

- *Do not skip class, arrive late, or leave early.* Given the accelerated nature of our courses, every minute of class missed can have a real impact on student success in a course.

- Work on assigned problems as close to the time as when the topic is covered in class to increase understanding of specific concepts.

- Find a group of students to study with. This makes studying more fun and helps learning of the material by teaching to and learning from peers. Explaining these concepts to other students aids in mastery of what is covered.

Teaching Methods & Instruction

In synchronous classes with scheduled class times, lectures will be delivered in real time/live by the instructor. Students must adhere to the attendance policy defined by the instructor for the class. In asynchronous classes, students will review lecture content on their own time. Due to the individualized nature of learning, students should expect to spend as much time as they need based on prior knowledge of foundational material and a realistic study schedule. Students should check both their schedule and the Canvas course page to confirm that they are correctly enrolled in the chosen course modality.

Pre-lecture Activities: Before each lecture, students complete very short, 5-7 question quizzes to orient them to the lecture content and to give them an idea of the prerequisite knowledge they might need to fully grasp each lecture's content. Pre-lecture activities are graded based on completion.

Participation: Students earn points by completing learning activities. *Attendance is not the same thing as participation.* Students are expected to be involved and engaged in all classroom activities (which may include activities graded on quality of participation).

Adaptive Module Quizzes (may be called LearningCurve): In each Adaptive Module Quiz, the instructor has established a certain score that must be reached to demonstrate comprehension of the concept. That score is called a target score. Once the target score is reached, full credit is given for completing the Adaptive Quiz. The target score must be reached to receive credit for the Adaptive Quiz. Questions get progressively harder through the Adaptive Quiz, and more points are allotted for answering harder questions. Reviewing portions of the electronic textbook may be required when questions are missed.

Homework: Students reinforce concepts learned in class by completing the homework assignments. Homework assignments are open-book formative assessments where students can have unlimited attempts to practice problems. The highest score achieved is recorded in the gradebook. Homework must be completed by the due date – late submissions incur a 2% grade reduction for every day submitted late.

Exams: There are two exams in each class, a midterm and a final exam. There will be questions on these exams that are similar to those on all quizzes, homework, questions at the end of each chapter, and any other activity given. The exams are all given on Canvas. Please pay attention to the due dates. They are final and will not be extended. Proctoring is required by the instructor for all exams.