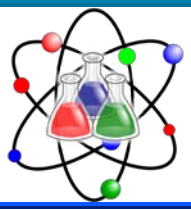
CHEM 122:
General Chemistry II
Spring 2017



Course Instructor:
Dr. Safa Khan
Email: safa.khan@csuci.edu

Lecture – Section #1	Aliso Hall 150	MWF 8:00-8:50 AM
Lecture – Section #2	Aliso Hall 150	MWF 10:00-10:50 AM
Office Hours	Solano Hall 1123	W&F 9:00-9:50 AM

I am here to help you, so please visit during office hours or set an individual appointment.

Course Description:
3 hours of lecture per week.
3 hours of lab per week.
Chemistry 122 is a 4 unit course in general chemistry. The catalog description is as follows: "An introductory chemistry course which provides an overview of the chemical and physical behavior of matter with a focus on quantitative general inorganic, physical, and analytical chemistry including kinetics and thermodynamics of reactions, gas phase and solution equilibria, and qualitative aspects of radiochemistry, organic chemistry, and polymer chemistry."

Prerequisites: You must have obtained a C or better in CHEM 121 – General Chemistry I in order to be enrolled in this lecture.

Course Student Learning Outcomes
Students who successfully complete this course will be able to:

A. Explain simple kinetics of reactions
B. Describe chemical equilibrium both qualitatively and quantitatively
C. Solve problems dealing with acid-base chemistry, including buffers and titration problems
D. Evaluate problems involving temperature dependence of solubility and complex equilibrium (e.g. solubility in acidic solution)
E. Solve problems with thermodynamics (free energy, entropy)
F. Describe oxidation-reduction chemistry qualitatively and in terms of equilibrium
G. Describe a galvanic cell and the relationship of electrochemistry to equilibrium and thermodynamics
H. Explain nuclear chemistry in radioactivity and nuclear bombardment reactions.

Course Materials

1. Textbook - *Chemistry, Tro, Chemistry: A Molecular Approach*, 3rd edition ISBN-13: 978-0321809247/ISBN-10: 0321809246

2. Lab Manual: General Chemistry Laboratory Manual II**, CSUCI (20XX)
   **Available for purchase from the Chemistry Club (Free Radicals)
   - Safety goggles, Lab Coat

3. Scientific calculator. It must be able to do logarithmic calculations. **Your phone *CANNOT* be used in place of a calculator for exams!** Graphing calculators will not be allowing for exams.

Any additional course materials will be made available on online. All changes to the course schedule will be posted on online. It is your responsibility to check online on a regular basis.

Course Grading:

The class average will be set at a C. The remainder grades will be distributed around the average with +/- grades assigned. Your grade for the will be based on your performance on the below items:

- *Lab (25%):* Point breakdown for lab will be discussed by your laboratory instructor.

- *Quizzes (10 %):* The quizzes will be given on blackboard. Thy will cover material based on the reading, weekly assignments and lecture material. **No make-up quizzes will be given**, but the lowest one will be dropped.

- *Attendance and In Class Exercises (10%):* **Please bring a scientific calculator to every class.** During class activities will be given. You may use your notes, book, or neighboring classmates to help complete in class exercises. **Top Hat** will be utilized in this course for attendance and in class questions. More information about Top Hat is given below. One absence will be dropped. If you miss more than one day, you will need to provide proof of a valid reason for missing class (e.g. note from health center, towing company, etc.).

- *Three Exams, (40%):* Three exams will be given according to the schedule attached. The exam will cover all the class material up to that point and you will have the entire lecture period to work on it. Each exam will emphasize the material in the class periods immediately preceding it, **but they can also be cumulative.** If you miss an exam; a student ***will not be given a make-up opportunity for any reason***. An alternative may be given ONLY if the student provides **documentation** for an excused absence (i.e. illness, injury, etc). ***No student is permitted to take any exam outside of the scheduled time. The make-up exam will be more difficult, and will include an oral exam section. Plus,***

your score will not be curved if the main exam is. You must bring your own approved and charged calculator to each exam. Periodic tables and scratch paper will be provided for each exam. All other belongings should be placed under your desk. It is recommended that students use the restroom before starting the exam. If a student needs to leave the room during an exam, the student will hand in the exam as completed before leaving the room and cannot continue the exam upon returning to the classroom. All exams will be closed book and closed note. Final comment, calculators must be removed from their covers and the cover put away during exams.

- *Final Examination, (15%):* **May 19th, 8:00-10:00 AM.**
  You will take the AMERICAN CHEMICAL SOCIETY GENERAL CHEMISTRY EXAM for your CHEM 122 Final. This is a national, standardized exam which covers material for the ENTIRE year of General Chemistry. The format is multiple-choice and the scores will be normalized. **You are not permitted to make this up for any reason.**

PLEASE be sure to use the restrooms BEFORE any quiz or exam!! If you wish to leave the room, your quiz or exam must be turned in for grading and cannot be continued afterwards. The exams, periodic table, and scratch sheets will be provided in class.

TopHat:

An online program will be used for in-class participation and random attendance checks. You can access the program at www.tophat.com. Signing into this program is required for CHEM 122. Register an account with Top Hat for FREE! Check your CSUCI email for an invite or search by the campus name &/or course name:

Once you have registered, there are 3 ways to access Top Hat during lecture:

		Section 01 - 8:00 AM	**Section 02 - 10:00 AM**
1	*Phone Number*	315-636-0905	315-636-0905
2	*Website URL*	Tophat.com/e/536838	Tophat.com/e/673784
3	*App code*	Download Application (Apple or Android) – 536838	Download Application (Apple or Android) – 673784
	Note: Course code is	**536838**	**673784**

Bring your device to class every day and be on time to be eligible for attendance &/or homework points.

Pre-Class Readings
To keep up with the material it is helpful that you read ahead and get familiar with the subject before each class.

Academic Dishonesty

All students are expected to complete assignments in this course as their own work. Plagiarism is defined as to pass off the ideas or words of another as one's own without crediting the source. If the instructor suspects a student has violated the academic honesty guidelines, she will discuss the apparent violation with the student to provide them with an opportunity to explain the situation. If the instructor feels that Academic Dishonesty has occurred, she will report the matter to the Vice Presidents for Academic Affairs and Student Affairs. Depending on the severity of the offense, the instructor may assign the responsible student a failing grade on the assignment/exam or an overall course grade of an "F".

Students Needing Accommodations

If a student requires additional accommodations, he/she can visit the Educational Assistance Center (EAC). The Center is located at the Student Service Center. Staff can be reached at (805) 678-5830.

Make friends/network:

To succeed in this course and many others it is very helpful to make friends. In class we will do group activities that will require you to work with others. I recommend you exchange phone numbers and emails with at least 2-3 other students. Study groups are extremely beneficial.

Need Extra-help?

Chemistry is a class where the material builds on itself. If you do not understand a certain concept it can keep returning to haunt you. Do not fall behind! Below are resources for tutoring on campus.

1) Aliso Hall, 2nd Floor at the open study area. The tutors are chemistry majors and any of them should be able to help you.
2) Learning Resource Center: Located at the Broome library. For tutoring schedules check: http://www.csuci.edu/learningresourcecenter/subjects-schedules.htm
3) STEM Center: Located in El Dorado Hall. This is a great place to study and get help. They have a microwave, sink, computers and lots of tables. For tutoring schedules check: http://www.csuci.edu/projectacceso/student-support-services.htm#STEMTutoring
    - I recommend signing up for the **Peer-Led Learning Workshop** at the STEM center for weekly worksheets taught by a peer.

Class Rules

- ***Phones are NOT allowed in class –*** if you have an emergency and need to be available by cell phone, please see me prior to class. If you are found texting, e-mailing, or messaging, you will receive a "0" for your in class assignment for that day.

By taking this class, you agree to abide by the rules in this syllabus.

How to Succeed in this Class

- ***Attend lectures*** *– Never miss a lecture. If you HAVE to miss a lecture, then contact your professor to make sure you did not miss any important announcements. Get notes from at least 2 friends.*
- ***ALWAYS read the appropriate material in the text BEFORE coming to class!*** *The pace of lecture will likely seem fast if you come to lecture without familiarizing yourself with the material beforehand.*
- ***Print lecture notes*** *and bring them to class if the instructor provides lecture notes ahead of time online. Read the notes before coming to class. Write questions that you may have about the notes. If the instructor does not answer your question, ask the question.*
- ***Review the material from class, immediately (or as soon as possible).*** Don't wait until the exam or quiz. Right after class review the material and problems covered in class. Make sure you understand EVERYTHING. Write down important things to memorize on a single sheet of paper for easy quick review later.
- ***Work problems from the textbook!*** In order to get the grade you want, you need to be willing to put the effort required into the class. You need to work many problems in addition to reading the book and attending lecture to succeed in this class. Do not fall behind on the homework. If you have extra time, do extra problems from the book. The A+ students always do extra problems.
- ***Don't ever let yourself get behind!*** On average, plan to spend at least 10-20 hours per week outside of class working problems. Spend additional time preparing for each test.
- ***Form study groups.*** Learning from each other is an excellent way to succeed in this class (which is part of the reason why the in-class activities exist).
- ***Double (or even triple!) check your work.*** It is very easy to forget to write the units of an answer, or to have the incorrect number of significant figures. Minor point deductions will add up and could affect your final grade. Only the paranoid survive.
- ***Go to office hours or tutoring every week*** to get help on understanding the lecture notes and homework. If you don't have questions, then you are not studying properly.
- ***Before the exam review everything****! Check your list of things to memorize, redo problems, quizzes and old exams. Exam time should be review time, not learning the material for the first time.*
- ***After the exam*** *– review your work and compare to the answers given by the instructor. If something does not make sense, seek help – you will probably see that question again on the final or the material will build on that concept. Also, sometimes instructors make mistakes.*

Disclaimer: *This syllabus is a "work in progress" and is therefore subject to change. It is the student's responsibility to remain informed about alterations in course structure/ content/ assignments. All changes will be posted online.*

Tentative Course Schedule* (MWF)

Week	*Topic*	*Lab Schedule*
1	Introduction/Chapter 13 (Chemical Kinetics)/Diagnostic Exam	*Check-in, Safety, Lab #1: Writing Workshop*
2	Chapter 13 (Chemical Kinetics)	*Lab #2: Chemical Kinetics: The I^- and $S_2O_8^{2-}$ 'Clock Reaction'*
3	Chapter 14 (Chemical Equilibrium) ***Kinetics Quiz – Saturday, 2/11***	*Lab #3: Chemical Kinetics: The Decomposition of Hydrogen Peroxide (H_2O_2)*
4	Chapter 14 (Chemical Equilibrium)	*Lab #4: Spectrophotometry: What Makes a Red M&M Red?*
5	Chapter 14 (Chemical Equilibrium)	*Lab #5: Equilibria: Measuring An Equilibrium Constant Using Spectrophotometry*
6	Chapter 15 (Acids and Bases) ***Equilibrium Quiz – Saturday, 3/4***	*Lab #6: Equilibria: An Overview of Le Chatelier's Principle*
7	Chapter 15 (Acids and Bases)	*Lab #7: Acid-Base Reactions*
8	Chapter 16 (Aqueous Ionic Equilibrium) **Exam 1 (Chapter 13/14)**- ***Friday, 3/17***	*Lab #8: Equilibria: Measuring pH To Find Acid Dissociation Constants*
9	**Spring Break – No classes**	***NO LAB: Spring Break***
10	Chapter 16 (Aqueous Ionic Equilibrium) **No Class – Cesar Chavez – 3/31** ***Acid/Base Equilibria Quiz – Saturday, 4/1***	***NO LAB: Cesar Chavez Day***
11	Chapter 16 (Aqueous Ionic Equilibrium)	*Lab #9: Synthesis of Complex Ions*
12	Chapter 17 (Free Energy and Thermodynamics) ***Exam 2 (Chapters 15 and 16) –Friday, 4/14***	*Presentations – Expt. 9*
13	Chapter 17 (Free Energy and Thermodynamics)	*Lab #10: RedOx Reactions: Metallic Activity Series*
14	Chapter 18 (Electrochemistry) ***Thermodynamics Quiz – Saturday, 4/29***	*Lab #11: Electrochemistry; Check-out*
15	Chapter 18 (Electrochemistry) Chapter 19 (Radioactivity and Nuclear Chemistry) ***Exam 3 (Chapter 17 and 18)- Wednesday, 5/10***	
16	Chapter 19 (Radioactivity and Nuclear Chemistry)/Review ***Final (Section 01 – 8AM Class) 5/19: 8 – 10 AM Aliso Hall 150*** / ***Final (Section 02 – 10AM class) 5/17: 8-10 AM Aliso Hall 150***	

Disclaimer – Alterations at the instructor's discriminations