CHEM 1C: General Chemistry Syllabus

Instructor: John Saunders, MS
Email: saundersjohn@fhda.edu
Office Hours: M/W 2^{30}-3^{30}pm & by appt
Office: across from the labs
Calendly: https://calendly.com/saundersj/john-saunders-office-hours

Lecture:	S32	M/W/F	10^{30}-11^{20}am	
Lab:	SC2208	M/W	11^{30}-2^{20}pm	32208

Pre-requisites:

CHEM 1B with a grade of C or better. EWRT 1A or ESL 5 recommended.

Course Description

This is the third and final quarter in the year long General Chemistry sequence. In this class, advanced equilibrium concepts pertaining to solubility and buffers will be discussed. This will be followed with an introduction to electrochemistry, the chemistry of transition metals, and nuclear chemistry.

Student Learning Outcomes:

1. Apply the principles of equilibrium and thermodynamics to electrochemical systems.
2. Apply the principles of transition metal chemistry to predict outcomes of chemical reactions and physical properties
3. Evaluate isotopic decay pathways.
4. Demonstrate a knowledge of intermolecular forces.

Class Materials:

- Textbook: either text is fine, the first is the recommended through the bookstore, but nothing is required
  - Silberberg, Amateis; *Chemistry: The Molecular Nature of Matter of Change*; 9th Ed. (earlier editions should be fine for content)
  - *Chemistry: Atoms First*, 2nd Ed. (online through OpenStax)
- Chem101 – online platform for taking exams, doing homework, and practice exams
- Lab Manual: online via canvas under Laboratory Information page
- Lab Notebook: any notebook is fine, **but you must have a specific section for lab work!**
- Calculator: Scientific calculator (with log functions)
- Scanning App: Adobe Scan App – used for converting pictures to PDFs (any free app will do)

Attendance:

All classes are mandatory. You should try to arrive 5-10 minutes prior to class to make sure you aren't late. Also due to the current pandemic, make sure to follow our school and local county guidelines with regards to COVID-19. If you are feeling sick AT ALL, DO NOT COME TO CLASS! Make sure to check in with me as soon as you can (preferably prior to missing class) to determine what we will do about the missed work/material. As soon as you can come back based on guidelines and negative tests, please again inform me, and come back to catch up.

CHEM 1C: General Chemistry Syllabus

Grades:

Letter Grade	A	A-	B+	B	B-	C+	C	D	F
Percentage	100-95	>95-90	>90-87	>87-83	>83-80	>80-75	>75-70	>70-60	>60

Your grade will be based on several parts and divided as shown to the right:

Discussions	20
Homework	150
Problem Sets	100
Lab	250
Exams	480
Total	1000

- Discussions (2%) – there will be several discussions on canvas to complete. Each will be associated with a different chapter material and require you to share with other students and interact with their posts. I encourage you to use this as an opportunity to chat with other students and be curious about the material.
- Homework (15%) – the homework will be given through chem101 and will be due 2 weeks after the material is presented, at midnight (11:59pm) on that Sunday. Make sure to complete the homework early as it will give you a good idea of material that might show up on exams. The homework is selected to help you focus on key problems for each chapter and to help you understand the material through practice. If you need extensions or more trials on the homework, please reach out to me!
- Problem Sets (10%) – there will be a problem set for different exams. They are posted on chem101 and will be available 1 week prior to the exam and close at the start of the exam. You are welcome and encouraged to solve these in study groups but be careful not to split up the work. In a group you should discuss the problem and ways to potentially solve it. Brainstorm the problem, don't let 1 student solve it. I'm also happy to help talk through any tough problems during reviews/office hours. A good thing to note is that problem sets tend to be harder than homework/exam questions you might see, but the goal is to practice critical thinking.
- Lab (25%) – the lab assignments will be a variety of assignments and everything will be submitted through canvas. Everything will be posted on the Laboratory Information page on canvas under the Welcome module. Make sure to review all the assignments there. Lab assignments will be due 1 week from the day they are conducted/discussed in class and the dates should be reflected on canvas. Late lab assignments will be accepted for a 10%/day penalty, so make sure to submit early in case you have questions or trouble with the lab.
- Exams (48%) – each exam will cover different material with the exceptions of the final exam which is cumulative. In order to pass the course, you must take all exams. Each exam will last the length of the lecture times for the class with the exception of the final exam during finals week which will be as listed by the school. The schedule below lists the dates of the exams, make sure you are available for all exams and let me know prior to the start of classes if there is a conflict. Otherwise, you are expected to appear at all exams during the listed times. Exams will take place during synchronous hours of the course. Make sure to show up early on exams days to be prepared for any last-minute information or technology issues if it applies. You may also be required to submit your work for the exam on canvas so make sure to clearly show work if needed on a problem and be prepared to submit a PDF of that work as soon as you are done with the exam.

  As chemistry always tends to build on previous knowledge, keeping up with old material will help you throughout the course. To study for the exams, I would recommend completing all homework assignments, reviewing lecture notes in a study group, and completing the problem sets on chem101. If you find that you need extra practice material for a certain section or chapter look at the end of chapter problems in the text and there are usually some sorted by section to practice with answers in the back of the text.

Students Seeking Accommodations

Students who are seeking support from the Disability Support Programs and Services (DSPS) should contact them directly at their office in LCW 110 or at (408) 864-8839 or via www.deanza.edu/dsps. De Anza College has the policy to accommodate all individuals regardless of disabilities, as such any students are welcome to come and speak with me privately regarding any accommodations necessary. They should email me directly and we can meet, please plan to bring your Accommodation Memo from the DSPS. Anything discussed will be kept in strict confidence and will not influence or affect your grade.

Academic Integrity

Academic integrity is a very serious thing. Cheating, copying, plagiarizing, or any form of using other person's work as your own is a serious offense. Any instance of academic dishonesty will not be tolerated and said students will not receive a passing grade on the assignment. Additionally, they will be reported.

Since this course is on zoom, the burden of proof of lack of cheating almost rests on the students. So during exams, please make sure to clearly show all work and do everything in your power to show you did not use outside sources or chat with others during the exam. This means that you must NOT use google, discord, or anything chat related during exams. If there is anything fishy during an exam or any work that looks like an outside source, it will be viewed as cheating and will receive a zero on the assignment.

While you may be working in groups, you should still be submitting your answers in your own words. A good rule of thumb is to discuss the question together, but then write your answer down alone.

Students can find more information from the Student Conduct Policy online at the following site: http://www.deanza.edu/studenthandbook/academic-integrity.html

---

How to Approach Chemistry and This Course

Learning chemistry is like learning a new language. It required a lot of practice and use of the specific language. Which means that one of your best tools will be talking out loud about the material and speaking in chemistry terms when applicable. Working in a study group will definitely help, so I would recommend forming a group of 3-4 students to review notes, ask questions, help with the setup of homework problems, and to teach each other. That's one of the keys towards learning material in general, by teaching and helping others understand, you yourself will have to understand the material even more. The actual process of attempting to explain new material helps you understand it better. In order to do well in chemistry, I advise a variety of methods to study:

- Read ahead in the textbook
- Complete homework problems (first with help if need be, second without help) always review the materials in the chapter if you are struggling with the homework problem before looking up the answer online
- Complete lab assignments
- Flashcards and study group work to teach each other (the best way to see if you know something, is if you can teach it to someone else)
- Teach each other
- Rewrite your notes and organize them for yourself

As for a general advice towards approaching online courses, COME TO OFFICE HOURS or SCHEDULE AN APPOINTMENT WITH THE PROF@! Seriously, it helps to come and speak one on one with the professor and ask

questions about the material as you are learning it. Curiosity will help you learn by trying to think about the material from all angles. So even though the lecture videos are posted, come to office hours with questions about specific material to dive deeper or seek a new explanation of everything. Also make sure you are spending an appropriate amount of time studying. It should be about 2-3 hours outside of lecture per 1 hour of lecture time, that's time studying, NOT doing homework or labs. That time should be spread out throughout the week, making sure to not spend more than 1 day away from the material, otherwise you start to lose the material from your brain. This means you immerse yourself in the subject regularly so that you are understanding it, rather than just memorizing material (which doesn't work for chemistry). Last minute cramming does not allow for adequate learning, nor does it help your stress level! This is good practice for future college courses and life experiences.

Important Academic Calendar Dates:

January 3rd	First Day of Classes
January 15th	Last Day to Add Classes
January 17th	Last Day to Drop Classes with No Record Of "W" & Full Refund/Credit
February 25th	Last Day to Drop with A "W"
March 21st – 25th	Final Exams

CHEM 1C: General Chemistry Syllabus

Schedule:

CHEM 1C (CRN 32207 & 32208)						
Week #	**Date**	**M Lec**	**W Lec**	**F Lec**	**M Lab**	**W Lab**
1	1/3	Ch 18 Review	Ch 13	Ch 13	Introduction	Introduction
2	1/10	Ch 13	Ch 13	Ch 13	1) Freezing Point Depression	1) Freezing Point Depression
3	1/17	**Holiday**	Ch 19	Ch 19	**Holiday**	1) Freezing Point Depression
4	1/24	Ch 19	Ch 19	Ch 19	2) Buffers and Titrations	2) Buffers and Titrations
5	1/31	***Exam 1 Review***	***Exam 1 - Ch 13 & 19***	Ch 21	2) Buffers and Titrations	2) Buffers and Titrations
6	2/7	Ch 21	Ch 21	Ch 21	3) Solubility Product & Common Ion Effect	3) Solubility Product & Common Ion Effect
7	2/14	Ch 21	Ch 23	Ch 23	3) Solubility Product & Common Ion Effect	3) Solubility Product & Common Ion Effect
8	2/21	**Holiday**	Ch 23	Ch 23	**Holiday**	Make Up day
9	2/28	***Exam 2 Review***	***Exam 2 - Ch 21 & 23***	Ch 24	4) Electrochemistry	4) Electrochemistry
10	3/7	Ch 24	Ch 24	Ch 24	6) Qualitative Analysis of Anions	6) Qualitative Analysis of Anions
11	3/14	***Exam 3 Review***	***Exam 3 - Ch 24 & Lab***	Final Exam Review	6) Qualitative Analysis of Anions	6) Qualitative Analysis of Anions
Finals Week	3/21	***Final Exam Wednesday 9:15-11:15am***				

Student Learning Outcome(s):

*Apply the principles of equilibrium and thermodynamics to electrochemical systems.
*Apply the principles of transition metail chemistry to predict outcomes of chemical reactions and physical properties.
*Evaluate isotopic decay pathways.
*Demonstrate a knowledge of intermolecular forces.