

CHEM 1B: General Chemistry**Syllabus**

Instructor: John Saunders, MS
 Email: saundersjohn@fhda.edu
 Office Hours: Tu/Th 8-9¹⁵am & by appt
 Zoom PMI: 413 944 4512
 Password: OliveOil
 By Appt: <https://calendly.com/saundersj>

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|----------|-----|--------------------------------------|--------------|-------|
| Lecture: | n/a | n/a | Asynchronous | |
| Lab: | M/W | 8 ³⁰ -10 ²⁰ am | Synchronous | 42667 |
| | W/W | 2 ³⁰ -4 ²⁰ pm | Zoom Meeting | 42668 |

Pre-requisites

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

Course Description

CHEM 1B is the second of a three-quarter general chemistry series. This class investigates intermolecular forces and their effects on properties, gas laws and kinetic molecular theory, and reversible reactions from the standpoints of kinetics, thermodynamics, and equilibrium.

Student Learning Outcomes

1. Evaluate the principles of molecular kinetics.
2. Apply principles of chemical equilibrium to chemical reactions.
3. Apply the second and third law of thermodynamics to chemical reactions.

Required Materials

- Textbook: Silberberg, Amateis; *Chemistry: The Molecular Nature of Matter of Change*; 8th Ed. (other editions should be fine for content, but the problem numbers might not line up)
- Chem101 – online platform for taking exams/quizzes, doing homework, and practice
- Lab Manual: online via HOL website
- Lab Kit: HOL lab kit, ordered during the third week of class through the bookstore
- Lab Notebook: Bound lab notebook for writing down observations, data, and any calculations **[there should be separate sections for lab and lecture!]**
- Calculator: Scientific calculator (with log functions)
- Scanning App: Adobe Scan App – used for converting pictures to PDFs (any free app will do)
- Internet: stable connection during synchronous zoom meetings

Attendance

Lecture hours will be asynchronous. The lecture material will be posted as videos on canvas under the lecture pages for each chapter. If you wish to review or discuss any of this material, I'm happy to meet one on one or in a group to review anything that is confusing or difficult or anything you are curious about. Since there are no lecture meetings, there will be review sessions for each exam during lab hours.

Labs are mandatory. You should plan to arrive early to lab (5-10 minutes at least) and waiting in the waiting room with your lab materials ready and the HOL website loaded. The exams will take place during lab hours on zoom. The format of the exams/quizzes is tba, but plan to take them during lab with camera and microphones on.

CHEM 1B: General Chemistry**Syllabus****Class Conduct/Zoom Lab Expectations**

- Log into Zoom on time or early to sit in the waiting room. The login information is posted on Canvas under the “Zoom Meeting” tab on the Welcome Page.
- Be on zoom during the synchronous meeting times and make sure to be actively participating and paying attention. Zoom meetings may be recorded, but not posted so you should pay attention to what is discussed.
- Keep your microphone muted until you are ready to speak or have been called on.
- Have your video turned on during meetings. If you don’t have your video on, you will be considered absent from class and could miss the chance to receive credit for the lab. Discuss with your professor if there are any special accommodations that might be needed.
- Always use your real name as it appears on the roster, this way I can keep attendance when necessary.
- Use the nonverbals (raise hand, yes, no, slower, faster) to help communicate your needs with me without interrupting the flow of the class.

Grades

***DISCLAIMER:** I will not assign letter grades until the end of the term; I then create my own grading scale based on the distribution of percentages in the course. An example of a previous term is shown to the right. My goal in this course is to challenge you and develop your critical thinking. The level of difficulty will demonstrate that and test you, but the grades are meant to show your level of effort & understanding in the course.*

| Letter Grade | A | B | C | D | F |
|----------------|--------|---------|---------|---------|-----|
| Standard Scale | 90-100 | 80-89.9 | 70-79.9 | 60-69.9 | <60 |
| My Old Scale | 88-100 | 74-87.9 | 64-73.9 | 54-63.9 | <54 |

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

- **Homework (9%)** – your homework will be online through chem101. There is a link on the canvas site to log in and register. The homework will be due 2 weeks after the chapter material is posted, due dates are listed on canvas and chem101. Homework will be a good idea of what material might be on the exams. Additionally, there are end of chapter problems that are suggested to complete to help study.
- **Problem Sets (12%)** – Associated with each exam will be a problem set worth 30 points. These will be released 1 week prior to the exam and must be submitted immediately prior to the start of the exam. The format will either be on chem101 or on paper that will be submitted to canvas. These problem sets are meant to be difficult and challenge your critical thinking, try to solve them alone, but definitely feel free to check with me for help or a study group to discuss the problem, but again try to think critically, that’s the goal!
- **Quizzes (10%)** – During the course of the term, there will be 4 quizzes given during lab hours that will cover any material up to the date of the quiz. This means you must stay on topic and be prepared for a quiz at any given day. Quizzes will last approximately 15 minutes and will be worth 25 points each you will then have a 10minute window to submit your work to canvas for credit, if you do not submit within that window as per canvas timestamps, I reserve the right to drop the score to a zero. The format of the quiz will either be on chem101 or on paper to be submitted as a pdf to canvas. These are meant to act as a knowledge check. They will be based in part on HOMEWORK and on lecture notes.

| | |
|--------------|-------------|
| HW | 90 |
| Problem Sets | 120 |
| Quizzes | 100 |
| Labs | 240 |
| Exams | 450 |
| Total | 1000 |

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- **Labs (24%)** – The lab portion of the class will be synchronous during the week. Meaning you are completing a lot of the lab during lab hours and on zoom. The labs will use a take home lab kit through Hands on Learning. This program has an online platform where you will see the lab procedures and pre- and post-lab material to be submitted. In total the labs are worth 240 points towards your final grade. During the labs you should make sure to be safe and understand all safety protocol for each chemical you are using and all equipment. If you have questions, please direct them to me during lab hours and make sure to have your video on in case of emergency.
- **Exams (45%)** – There will be four exams each worth 150 points. Three of them will cover specific chapters while the final will be cumulative. I will drop the lowest exam score, but if you receive greater than 80% on the first three cumulatively, then you have the option not to take the final and keep the first three exam scores. The exams are to be 70 minutes (slightly longer than normal to account for online difficulties) and you will have a 10-minute window after the exam to upload the pages to canvas for credit, if you do not submit within that window as per canvas timestamps, I reserve the right to drop the score to a zero. Since 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 then attempting the practice exams on chem101.

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.

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:

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- 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

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|--|--|
| April 5 th | First Day of Classes |
| April 17 th | Last Day to Add Classes |
| | Last Day to Drop Classes with No Record Of "W" |
| May 28 th | Last Day to Drop with a "W" |
| June 21 st – 25 th | Final Exams |

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Schedule

| CHEM 1B Schedule (subject to change) CRN 42667 & 42668 | | | | |
|--|------|---|------|--------------------------------|
| Week # | Date | Monday | Date | Wednesday |
| 1 | 4/5 | Introduction | 4/7 | Getting Started |
| 2 | 4/12 | Act 1 | 4/14 | Act 2 |
| 3 | 4/19 | Lab Safety | 4/21 | Optional OH |
| 4 | 4/26 | <i>Exam 1 Review</i> | 4/28 | <i>Exam 1 - Ch 5 & 12</i> |
| 5 | 5/3 | Exp 1 | 5/5 | Exp 1 |
| 6 | 5/10 | Exp 2 | 5/12 | Exp 2 |
| 7 | 5/17 | <i>Exam 2 Review</i> | 5/19 | <i>Exam 2 - Ch 16 & 17</i> |
| 8 | 5/24 | Exp 3 | 5/26 | Exp 3 |
| 9 | 5/31 | Exp 4 | 6/2 | Exp 4 |
| 10 | 6/7 | Act 3 | 6/9 | Act 3 |
| 11 | 6/14 | <i>Exam 3 Review</i> | 6/16 | <i>Exam 3 - Ch 18 & 20</i> |
| Finals Week | 6/21 | <i>Exam 4 (Wednesday 6/23 @ 915-1115am)</i> | | |

Student Learning Outcome(s):

*Evaluate the principles of molecular kinetics.

*Apply principles of chemical equilibrium to chemical reactions.

*Apply the second and third laws of thermodynamics to chemical reactions.