

## Welcome to Chem 1B – Fall 2023 – Sections 21584

### Who am I and how can you reach me?

**Instructor:** Dr. Josh Visser  
**Email:** [visserjosh@fhda.edu](mailto:visserjosh@fhda.edu)  
**Office:** SC 1206  
**Office Hours:** Tuesday 3:00 – 4:30 pm (Zoom) | Friday 12:30 – 2:00 pm (Zoom)

\* If you cannot make it to the above office hours, please email me and we can set up an appointment.

**Please email me with any questions or message me through Canvas.** This is the best way to get in touch with me. I will usually respond within 24 hours or less, I won't respond quickly on weekends and after 7pm.

<u>Lecture Meetings and Locations</u>	<u>Days</u>	<u>Time</u>	<u>Location</u>
Lecture	Mon/Wed	6:00 pm – 7:15 pm	G7
Lab	Mon/Wed	7:30 pm – 10:20 pm	SC2204

**Course Description:** Chem 1B is the second quarter of a year-long introduction to the principles of general chemistry and a direct continuation from Chem 1A. Chem 1B will constitute an investigation of intermolecular forces and their effects on chemical and physical properties, investigation of reversible reactions from the standpoint of kinetics, thermodynamics, and equilibrium; as well as an investigation and application of gas laws and kinetic molecular theory.

This course is divided into **two (2)** separate instructional periods – the lecture and laboratory sections. The lecture portion is primarily devoted to the material discussion while the laboratory portion gives students a chance to practice chemical experimentation and apply lecture concepts. Lecture and lab sections must be taken together to pass CHEM 1B and will both go towards a single grade. The course website is on Canvas and access to it will be discussed on the first day of class.

### Community Statement

Every person in this class, regardless of personal history or identity categories, is a welcome and important member of this group. Your experiences are important, and you are encouraged to share them as they become relevant. No person in this group is ever expected or believed to speak for all members of any group(s).

You have the right to determine your own identity, to be called whatever name you wish, and to be referred to by your pronouns. You have the right to adjust these things at any point. If you find any aspects of facilitation, instruction, subject matter, or program environment that result in barriers to your inclusion, please let me know right away, privately without fear or reprisal. We are all learning. It is my goal to continue learning and improving to support everyone in this class and, by extension, all my current and future students.

### Office (Student) Hours

Student hours are an opportunity for you to come talk to your instructor (me) outside of regular class time. You are welcome to come talk to me about the course, questions that you have about the material or practice problems, and your educational path. Please drop by!

## What do you need for the course?

### Course Materials:

1. **Textbook:** *OpenStax Chemistry, 2<sup>nd</sup> edition*: <https://openstax.org/details/books/chemistry-2e>. Also available on the OpenStax app (tablet/phone)
2. **A non-programmable scientific calculator** capable of logarithm and exponential functions. Please plan on bringing this calculator to class every day.
3. **Aktiv Online Homework Platform:** This quarter, we will be using Aktiv for online homework. A subscription to Aktiv is available online through the De Anza bookstore, and I will further discuss how to subscribe to and utilize this platform on the first day of class. If this subscription proves to be an issue, please email me and we can figure out alternative methods for homework.
4. **A scanner/scanning app:** We will be submitting (lab) assignments as uploaded pdf's. Use of a scanner or a scanning app on a phone will both work for this purpose. Please let me know if this is an issue.
5. The lab content for this course will be available on the Canvas site, no lab manual purchase necessary.
6. **Lab Equipment**
  - a) Goggles: For your protection, safety goggles or Visorgogs (<https://www.flinnsci.com/flinn-visor-goggles/ap1362/>) with indirect ventilation and an ANSI minimum rating of Z87 must be worn *AT ALL TIMES* in the laboratory while experiments are taking place. I will send out more info in an email.
  - b) Personal Protective Equipment (PPE): Long pants and closed toed shoes must be worn in lab. Specifics are provided in the safety document at the end of the syllabus.
  - c) Lab notebook: Any simple, ruled notebook that is permanently bound.

### Canvas Course Website:

Course material including lectures, exam keys, and other resources will be posted on Canvas. Grades are also posted on this site as we go through the quarter. Announcements and other notifications will be through Camino as well. Make sure to check Canvas on a daily basis.

### Class Registration.

Registration limit is strictly set to 30 per section since we are limited by space in lab. The class will be filled based on the official roster provided by De Anza Admissions and Records, including an official waitlist. Students on this waitlist may attend the lecture component during the first two weeks of class but aren't allowed to come to lab until officially enrolled due to space restrictions. I will endeavor to send course info and assignments to a waitlist during this 2-week time.

## How will I learn (and how is it measured)?

Your comprehension of course material will be measured using the following grading scale

A+	≥98 %	B+	≥87 %	C+	≥77%	D+	≥67 %	F	<60%
A	≥94 %	B	≥84 %	C	≥70 %	D	≥60 %		
A-	≥90 %	B-	≥80 %						

(This grade scale may be adjusted by the instructor as needed)

If your exam percentage, or lab work percentage, is less than 60%, you may not receive a passing grade for this course.

Incomplete grades will only be given for extenuating circumstances; for example, verified illness or legitimate emergencies. If an incomplete is given all exams and lab work prior to the incomplete are still counted in your grade, only material that has not yet been completed can be made-up in the future. You must be passing the course to receive an incomplete grade.

Provided below is a table of the assignments for the class, split up between lecture assignments and lab assignments. All relevant course materials will be uploaded to the Canvas website.

Lecture Assignment	Points	Percent
Student Welcome Questionnaire	5	0.5
Homework	50	5.0
4 In-class quizzes (drop the lowest)	45	4.5
Midterm 1 (Ch. 9 & 10)	200	20.0
Midterm 2 (Ch. 12)	200	20.0
Midterm 3 (Ch. 13 & 14)	200	20.0
Final Exam (Ch. 16)	200	20.0
<b>Lecture Total</b>	<b>700</b>	<b>70.0</b>

<b>Class Total</b>	<b>1000</b>	<b>100.0</b>
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Lab Assignment	Points	Percent
Chemical Lab Safety Sheet	5.0	0.5
Molar Volume Prelab	5.0	0.5
Molar Volume Data	2.0	0.2
Molar Volume Calculation	3.0	0.3
Molar Volume Conclusion	5.0	0.5
Structure and Polarity Wkst	15.0	1.5
<b>Lab Quiz 1</b>	75	7.5
Green Salt Prelab	5.0	0.5
Green Salt Lab Report	50	5.0
<b>Lab Quiz 2</b>	75	7.5
Iodine Clock Prelab	5.0	0.5
Iodine Clock Data	2.0	0.2
Iodine Clock Calculation	3.0	0.3
Iodine Clock Conclusion	5.0	0.5
K <sub>c</sub> by Spec Prelab	5.0	0.5
K <sub>c</sub> by Spec Data	2.0	0.2
K <sub>c</sub> by Spec Calculations	3.0	0.3
K <sub>c</sub> by Spec Conclusion	5.0	0.5
K <sub>a</sub> Prelab	5.0	0.5
K <sub>a</sub> Data	2.0	0.2
K <sub>a</sub> Calculations	3.0	0.3
K <sub>a</sub> Conclusion	5.0	0.5
Calcium Hydroxide Prelab	5.0	0.5
Ca(OH) <sub>2</sub> Data	2.0	0.2
Ca(OH) <sub>2</sub> Calculation	3.0	0.3
Ca(OH) <sub>3</sub> Conclusion	5.0	0.5
<b>Lab Quiz 3</b>	75	7.5
<b>Lab Total</b>	<b>300</b>	<b>30.0</b>

## Lecture and Lecture Assignments

Lecture Description: This class (Chem 1B) covers chapters 9, 10, 12, 13, 14, and 16 from the OpenStax textbook. My general philosophy towards lecture is that I am looking to give a deep description of the concepts as well as a thorough review of the associated math. This means I will spend a significant amount of time in lecture describing the atomic dynamics as well as going over calculations.

### Lecture Assignments

- Student Welcome Questionnaire: To become better acquainted with you and provide the best overall instructions possible, I have created a google form with a set of questions for you to answer worth **5 points**. My idea is that a strong relationship (and understanding of background) with mutual respect allows for communication and learning to be facilitated. Knowing about you early on allows for this relationship to be built. The assignment will become available on the first day of class.
- Homework: Homework assignments are worth **50 points** of the overall grade and are given through the online platform Aktiv. There are a total of 6 chapters covered, so each chapter assignment will be about 1% with 9 and 10 grouped. Scoring is on accuracy and overall completion. I will discuss how to subscribe to and utilize this platform on the first day of class. Doing all the listed problems is highly recommended and represents the minimum needed to practice the topics.
- In-class quizzes: A 20-minute quiz will be given a week before each exam to test basic comprehension and ensure you are keeping up with course material. Problems you find on quizzes are generally going to be less complex/challenging compared to full-length midterm exams. There will be NO makeup or online quizzes (exempting illness related absence). Each quiz is worth **15 points**. Four quizzes will be administered and the lowest score will be dropped. If you miss more than one quiz due to illness, we can discuss the allotment of quiz points towards the final exam.
- In-class Midterms and Final Exam: I aim to give all exams in person, health permitting. Travel is not considered an excused absence, so please make your travel plans accordingly. Midterm exams will be held on Wednesdays. The in-person final exam will be comprehensive in these sense that chemistry builds on itself, but will have an emphasis on chapters 16.

Exam 1	Exam 2	Exam 3	Final Exam
Wed Oct 11 <sup>th</sup>	Wed Nov 1 <sup>st</sup>	Wed Nov 22 <sup>nd</sup>	<b>Mon Dec 11<sup>th</sup> 6:15 – 8:15</b>

The dropped quiz and midterm policy allows you to miss each one due to any type of emergency. If, for whatever reason, you end up missing two quizzes or exams, we will discuss putting the weight of that assessment onto the remaining exams. For example, if you miss two exams, the remaining exams will be worth 300 points.

Regrade policy: Regrades will be accepted within one week of the day when the exam is returned to the class as a whole. Concerns must be submitted in writing. Regrading is only done in response to a particular (and valid) concern in the initial grading of the exam. Upon submission, I reserve the right to regrade the whole exam, not just those questions of concern. If the error is simple in totaling points, I will make the correction without a regrade.

## What about this lab component?

A passing grade in the lab section is required in order to pass the entire course. That is, even if you receive an A in all of your lecture components but fail the lab section, you will fail the entire course.

- 1) Laboratory attendance is mandatory. However, if you are feeling unwell, you are encouraged to **stay home**. While it is not possible to make up the lab specifically, there will be ways to make up the points so ensure that you put your health first before worrying about the assignment you'll miss.
- 2) Dress code for lab: Please note that the final dress code has been established for all students, staff, and faculty in laboratories in the chem department. Failure to meet these requirements will result in having to leave the laboratory section until the deficiencies have been addressed.
  - A t-shirt is the minimum coverage required for the upper body
  - Long pants are required
  - Closed-toe and closed-heel shoes are required
  - Ankles must be covered with pants, socks, or shoes (bring an extra pair of long socks to lab)
  - Safety splash goggles are required

### Lab Assignments

There will be a total of 8 lab-based exercises this quarter that will loosely correspond to the topics we are covering in lecture. For each experiment you are required to: (1) read the procedure, (2) complete a prelab, (3) attend the lab introduction at the beginning of the lab period, (4) perform the procedure, (5) answer the follow-up questions/calculations, and (6) write a conclusion. What follows are the steps to complete an experiment and associated assignments:

Step 1: The first thing to do to prepare for lab is to *read the entire experiment*. It is essential to become familiar with the experimental design and procedures before starting with the lab work, and this starts with a read-through of the methods. The lab documents can be found on the De Anza chemistry website as well as on our Canvas website under "files".

Step 2: Once you have familiarized yourself with the lab, the next step is to write a **prelab** that is worth **5 points**. Your prelab will consist of two parts, which I will outline on the first day of lab.

The first part of the prelab is the **lab introduction**, where you will (1) describe the goals of the experiment, (2) introduce the scientific principles that form the basis of the study, and (3) summarize the process by which you obtain the experimental data. This should not be a list of procedural steps, but rather 1-2 short paragraphs of writing in your own words.

The second part of the prelab provides **lab specifics**, and will be a one page summary for the lab with sections for: List of Reagents, Safety, Waste, Diagram of Experiment, and the type of data collected.

A completed prelab is required before you may begin an experiment and can either be physically shown to me or uploaded onto Canvas. We will discuss this further in lab.

Step 4: I will give an introduction to the lab that includes a discussion of the theory behind the experiment as well as a walkthrough of the harder aspects of the procedure. Missing this time will result in a loss of points and may prevent you from performing the experiment that day.

Step 5: After performing the experiment, take a picture of your data and observations. Please use tables with appropriate headings with units included and the correct number of significant figures. Neatness is also key – if you cross out data values, do so neatly and indicate the new measurement taken. This data will be uploaded to Canvas under the appropriate assignment and is worth **2 points**.

Step 6: With the collected data, you will need to perform calculations and follow-up questions and turn them in to Canvas for **3 points**. This will be completing the rest of the packet that is posted to our Canvas website – providing final values and answering a few conceptual questions relating to the lab. Often, this will include a few questions that go beyond what is part of the experiment as posted to the De Anza chemistry website, so keep this in mind. We will usually have part of a lab period, or even a whole lab period, dedicated to helping with these calculations.

Step 7: The last task is to write a **conclusion**. This section is the most important and often the most difficult because it requires deep consideration of the experiment as a whole. The conclusion should contain at least three sections.

The first section is a summary of the experiment, including the main goal and the methods used to collect/analyze data. This part should not be more than a paragraph and will be very similar to some of the context in the intro.

In the next section, **present the final values**. Many experiments require collecting a large amount of raw data, but including all of these values is not the point of this section. Instead, only include the values or conclusions that directly relate to the experimental goal. Additionally, **compare** one trial to the next and/or compare the average value to literature values.

Finally, provide a source of error that may have resulted in discrepancies between trials or between experimental averages and accepted values. This description should go beyond simple factors like human error and should connect an aspect of the experimental design or procedural step to any discrepancies between the experimental and expected values. That is, explain how an error could have affected your result by following this error through the calculation process.

The conclusion will be submitted through Canvas and is worth **5 points**.

Formal Laboratory Report: For the Green Salts experiment, you are required to do a formal, typed report worth **50 points** that will contain all parts of the lab together in one document, rather than individual parts turned in at separate times, as in other labs.

In scientific research, conveying what you have discovered in a clear, concise manner is essential to making your new ideas accessible to others and allowing your contributions to help the world.

It may feel like something completely new if you have not done a scientific report, and that is okay! We will not be doing everything that a manuscript would require but rather looking to gain familiarity with presenting an experimental study. I will talk about the specifics during the introduction for this lab, and I will provide an instructions sheet to help with the structure of this report.

Lab Quizzes: There will be three lab quizzes in this course. The quizzes will cover safety material, background theory, experimental techniques, calculations, and analysis related to your laboratory experiments. The average of your top two quizzes will be used towards your final grade. The expected content of each quiz is given below.

<b>Quiz 1</b>	Molar volume of a gas   Enthalpy of vaporization
<b>Quiz 2</b>	Green salt lab (all days) - Micropipette use - Redox titration - UV-Vis spectroscopy - Standard curve method - Gravimetric Analysis
<b>Quiz 3</b>	Iodine Clock rxn   $K_c$ by spectroscopy   $K_a$ of weak acid   Calcium hydroxide

## Some Guidance on Studying and Success:

CHEM 1B is a fast-paced class with a variety of material, which build upon each other. To perform your best, make sure you stay on top of the material from the very beginning. It will become really hard to catch up later in the quarter. To excel in this class:

1. **Familiarize yourself with the material to be covered before attending lecture.** In practice, this can just be reading the section in the textbook, reviewing the lecture slides, or even glancing at the homework. At this time, don't concern yourself with fully understanding the material, but instead the "broad strokes". This first contact will enable you to use the lecture time to organize and understand what is being presented without feeling overwhelmed.
2. **Attend lectures!** I will emphasize the most essential aspects of the material and place it into context for you to best understand. In the least, attending lecture gives you a sense of my approach to the material and what I'll use as a focus on exams.
3. **Don't only copy words from the slides during lecture.** Since I will post pdfs of the lecture slides before class, you will not need to copy down everything on the presentation.  
In fact, furiously copying down everything on the slide is less helpful than writing down what I am saying and/or what you were thinking during a particular slide.  
It is to your benefit to print these blank lecture notes or annotate them using your computer. If you prefer to just use your notebook, I suggest accompanying your notes with the slide numbers to organize them. Lecture slides and the practice problems we do in class serve as a very good tool for studying.
4. **Complete all homework problems.** Extensive practice is the best way to ensure concept mastery. The more you practice, the more comfortable you will be, and the better you will perform on exams. Beyond assigned homework problems, you are encouraged to do in-chapter problems, end of the chapter problems, and additional worksheets posted with keys. Sometimes questions from the homework or worksheet might show up on exams.
5. **Find a study buddy.** Having someone to cross-check answers and discuss ambiguities will be tremendously encouraging.
6. **Get help when you need it.** If you are having difficulty with a topic, please do not hesitate to ask questions in class or attend office hours (that is what they are there for!). There are plenty of resources, including myself, for aiding in material comprehension, but it all starts with you making an effort to get this help.

## Other Course Policies

### Resources:

Academic support can be found at the Learning Resources Division <https://www.deanza.edu/learningresources/>. Information about tutoring can be found at the Math Science and Technology Resource Center <https://www.deanza.edu/studentssuccess/mstrc/> with tutoring provided for the whole Chemistry 1 sequence and is located in room S43 in the S-quad.

### Academic Integrity:

By enrolling in classes at De Anza College, you are agreeing to the academic integrity policy and are held to all standards. Specifics can be found at <https://www.deanza.edu/studenthandbook/academic-integrity.html>.

Cheating during an exam/quiz or copying/using work other than your own for assignments will result in a 0 for the entire assignment, regardless of what percentage of the work is from cheating.

Worse than a 0 on an exam, I am required to report such incidents to the disciplinary committee, who will make a note of the incident on your transcript, which then becomes visible to 4 year colleges upon reviewing your transfer application.

### Disability Service Support:

De Anza is committed to providing support for all students. If you have specific physical, psychiatric, or learning disabilities and require accommodations, please let me know early in the quarter so that your learning needs may be appropriately met. For more information, visit Disability Service Support at <https://www.deanza.edu/dss/>

### Classroom Conduct:

I want to be very clear that this class is a place where everyone can feel safe to be themselves and to learn at their own pace. It is important to me that you feel comfortable to ask questions, and I hope you all will help me create a supportive atmosphere.

### Health:

Life at college can get very complicated. You may sometimes feel overwhelmed, lost, experience stress, anxiety or depression, or struggle with relationship difficulties. Many of these issues are very common and can be effectively addressed with a little help. Psychological Services students cope with difficult emotions and life stressors. Psychological Services is staffed by experienced, professional psychologists and counselors, who are attuned to the needs of college students. The services are FREE and completely confidential. One of the main goals from De Anza and PsychServices is to make it okay to ask for help and reduce the stigma of receiving support. Find out more on our Psychological Services website at <https://www.deanza.edu/psychologicalservices/>

### Academic Concerns:

If you are concerned with your progress in this class, please contact me so that we can find solutions together.



**8. Tentative Lecture Schedule**

Day	Date	Chapter	Lecture Topic	Week	Quiz
M	9/25	Ch. 9	Kinetic Molecular Theory and Gas Properties	1	
W	9/27	Ch. 9 and 10	Kinetic Prop of Gases, Deviations from Ideal Behavior		
M	10/2	Ch. 10	Intermolecular Forces and Properties of Water	2	<b>Quiz 1 Wed</b>
W	10/4	Ch. 10	Phase Changes and Review of Enthalpy		
M	10/9	Ch. 10	Phase Changes and Review of Enthalpy	3	
W	<b>10/11</b>	<b>Exam</b>	<b>MT1: Gases, IMFs, and Phases of Matter</b>		
M	10/16	Ch. 12	Chemical Kinetics and Reaction Rates	4	
W	10/18	Ch. 12	Reaction Mechanisms and Transition States		
M	10/23	Ch. 12	Rate Laws and Integrated Rate Laws	5	<b>Quiz 2 Wed</b>
W	10/25	Ch. 12	Kinetics Continued		
M	10/30	Ch. 13	Equilibrium	6	
W	<b>11/1</b>	<b>Exam</b>	<b>MT2: Kinetics and Qualitative Chemical Equilibrium</b>		
M	11/6	Ch. 13	Equilibrium: ICE Tables	7	
W	11/8	Ch. 13 & 14	Le Chatelier's Principle and Acids Intro		
M	11/13	Ch. 14	Weak Acids and Bases	8	<b>Quiz 3 Wed</b>
W	11/15	Ch. 14	Acid-base Properties of Salts		
M	11/20	Ch. 16	Thermodynamics: Reaction Entropy	9	
W	<b>11/22</b>	<b>Exam</b>	<b>MT3: Eq Calculations and Acid-Base Chem</b>		
M	11/27	Ch. 16	Thermodynamics: Reaction Entropy	10	
W	11/29	Ch. 16	Thermodynamics: Spontaneous Reactions		
M	12/4	Ch. 16	Thermodynamics: Spontaneous Reactions	11	<b>Quiz 4 Mon</b>
W	12/6		Quarter wrap-up and Review		
<b>CUMULATIVE FINAL EXAM will be held in G7 on Monday December 11th 6:15 - 8:15</b>					

**Other Important Class Dates**

Sunday, 10/08: Last day to add

Sunday, 10/08: Last day to drop w/ Refund

Sunday, 10/08: Last day to drop w/o W

Friday, 11/17: Last day to drop w/ W

Monday, 12/11: Final Exam

9. Tentative Lab Schedule

WEEK	MONDAY	WEDNESDAY
1	<b>CHECK-IN</b> Complete lab safety assignment at home	<b>Molar Volume of a Gas</b> Data due Submit calc and conclusions by next class
2	<b>Structure and Polarity Review</b> In-class worksheet due at end of class	<b>Heat of Vaporization Day 1</b> Prelab due Perform experiment and collect data
3	<b>Heat of Vaporization Day 2</b> Data due Calc and conclusions next class	<b>Green Salts Day 1</b> Synthesis of iron oxalate Start recrystallization
4	<b>Lab Quiz 1</b> <b>Green Salts Day 2</b> Filter recrystallized product Micropipette practice	<b>Green Salts Day 3</b> Introduction to UV-Vis spectroscopy Oxalate quantification by redox titration
5	<b>Green Salts Day 4</b> Iron quantification by UV-Vis Prepare class standard curve	<b>Green Salts Day 5</b> Hydrate quantification by gravimetric analysis
6	<b>Lab Quiz 2</b> <b>Iodine Clock Rxn Day 1</b> Prelab due Experimental design Collect data for parts I and II	<b>Iodine Clock Rxn Day 2</b> Finish collecting data for parts I and II
7	<b>Iodine Clock Rxn Day 3</b> <b>Green Salts Formal Report Due</b> Collect data for parts II and IV	<b>Iodine Clock Rxn Day 4</b> Data due Calc and conclusions next class
8	<b>K<sub>c</sub> by Spectroscopy Day 1</b> Prelab due Collect data	<b>K<sub>c</sub> by Spectroscopy Day 2</b> Data due Calc and conclusion due next class
9	<b>K<sub>a</sub> of a Weak Acid Day 1</b> Prelab due Collect data	<b>K<sub>a</sub> of a Weak Acid Day 2</b> Data due Calc and conclusions due next class
10	<b>Calcium Hydroxide Day 1</b> Prelab due Collect data	<b>Calcium Hydroxide Day 2</b> Continue collecting data
11	<b>Calcium Hydroxide Day 3</b> Data due Calc and conclusions due next class	<b>Lab Quiz 3</b> <b>Check-Out</b>

## Lab Safety/Preparedness

Maintaining safety when performing experiments is a primary concern. There are many hazards associated with chemistry labs, so it is essential to recognize these hazards and understand that with proper techniques, the risk drops significantly. There are a few very simple steps students should take to execute safe lab techniques.

First, always wear personal protective equipment (PPE) when performing lab experiments. Such items include, but are not limited to, safety goggles, long pants, sleeved shirts, and closed-toe shoes. **All of this safety equipment must remain on until you complete the experiment, including cleanup.** A detailed list containing safe lab procedures and general practices is given on the next page and must be reviewed and signed before starting experiments.

Second, read the lab procedure BEFORE executing the lab procedure. Notes, facts, or some recognition of the hazards is required for the prelab to ensure the section on safety has been read. Reading the procedure ahead of time and knowing what tasks are at hand will also help the experiment go smoothly.

Finally, listen carefully to the directions provided by the instructor. Many techniques can be performed safely and easily with the proper technique but become a safety hazard when performed improperly

What follows is a list from the American Chemical Society Safety In Academic Laboratories Guidelines, 7th Ed., the following mandatory minimum safety requirements must be followed by all students and be rigorously enforced by all Chemistry faculty:

From the American Chemical Society Safety In Academic Laboratories Guidelines, 7th Ed., the following mandatory minimum safety requirements must be followed by all students and be rigorously enforced by all Chemistry faculty:

- 1) Chemistry Department-approved safety goggles purchased from the De Anza College bookstore (NOT safety glasses) must be worn at all times once laboratory work begins, including when obtaining equipment from the stockroom or removing equipment from student drawers, and may not be removed until all laboratory work has ended and all glassware has been returned to student drawers.
- 2) Shoes that completely enclose the foot are to be worn at all times; NO sandals, open-toed, or open-topped shoes, or slippers, even with socks on, are to be worn in the lab
- 3) Shorts, cut-offs, skirts or pants exposing skin above the ankle, and sleeveless tops may not be worn in the lab: ankle-length clothing must be worn at all times
- 4) Hair reaching the top of the shoulders must be tied back securely
- 5) Loose clothing must be constrained
- 6) Wearing "...jewelry such as rings, bracelets, and wristwatches in the laboratory..." should be discouraged to prevent "...chemical seepage in between the jewelry and skin...".
- 7) Eating, drinking, or applying cosmetics in the laboratory is forbidden at ALL times, including during lab lecture
- 8) Use of electronic devices requiring headphones in the laboratory is prohibited at ALL times, including during lab lecture
- 9) Students are advised to inform their instructor about any pre-existing medical conditions, such as pregnancy, epilepsy, or diabetes, that they have that might affect their performance.
- 10) Students are required to know the locations of the eyewash stations, emergency shower, and all exits
- 11) Students may not be in the lab without an instructor being present
- 12) Students not enrolled in the laboratory class may not be in the lab at any time after the first lab period of each quarter.
- 13) Except for soapy or clear rinse water from washing glassware, NO CHEMICALS MAY BE Poured INTO THE SINKS; all remaining chemicals from an experiment must be poured into the waste bottle provided.
- 14) Students are required to follow the De Anza College Code of Conduct at all times while in lab: "horseplay", yelling, offensive language, or any behavior that could startle or frighten another student is not allowed during lab;
- 15) Strongly recommended: Wear Nitrile gloves while performing lab work; wear a chemically resistant lab coat or lab apron; wear shoes made of leather or polymeric leather substitute.

By signing below, I, \_\_\_\_\_,

First Name

Family Name

acknowledge that I fully understand and agree to abide by the laboratory safety rules listed above. Further, I acknowledge that my failure to abide by these rules will result in my being dropped from this chemistry class immediately.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

**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.

**Office Hours:**

T	3:00 PM	4:30 PM	Zoom
F	12:30 PM	2:00 PM	Zoom