

General Chemistry I Syllabus
Fall 2026 – CHEM 1A
Dr. Alexander Chang

I. Course Overview

This class is the first quarter of the three-quarter general chemistry sequence, CHEM 1. This course is in-person and includes both a lecture and lab component. One grade is assigned for the two parts combined. The lecture and lab cannot be taken separately.

Important Information

Lecture Time/Location: TTh 11:30 AM – 12:45 PM in S32

Lab Times:

Section 03: TTh 8:30 AM – 11:20 AM in SC2202

Section 04: TTh 2:30 PM – 5:20 PM in SC2202

Final Exam: **Tuesday, December 8, 11:30 AM – 1:30 PM** in S32

Instructor: Dr. Alexander Chang (Email: changalex@fhda.edu)*

Office Hours:** TTh 1:30 – 2:20 PM in S55 (in-person only)

W 3:00 – 4:40 PM via Zoom

Required Items:

1. [Chemical safety goggles](#) (*n.b.* safety goggles must seal all the way around your eyes and be specifically designed for chemical lab work)
2. Chemistry: A Molecular Approach, Tro, 6th edition eText + **Mastering**. (if you have a physical textbook you still need to purchase Mastering Chemistry)
3. Scientific or Graphing Calculator (no internet access capability)
4. Access to Canvas

Recommended Items:

1. Supplementary Lecture Text: OPEN STAX Chemistry, Second Edition (free and online)
2. [Physical lab notebook](#)

General Course Philosophy

You will see that throughout this syllabus I offer you a large amount of academic freedom. Learning how to handle academic freedom is an important skill to learn, and is deceptively difficult to master. I will not grade completion of homework assignments or attendance of lectures, but understand that you are *expected* to do all assignments and attend all lectures.

Historically, students who have struggled in my courses fail to manage this autonomy until AFTER they fell behind. Be proactive, not reactive. Do not wait until you fail a midterm to start engaging with the course – it will already be too late.

*Email me for all official correspondence. Assume that I do not remember spoken conversations – realize I have many students. Additionally, I prefer email over Canvas correspondence (Canvas messaging has some flaws)

**Individual meetings can be requested for concerns such as improving poor grades, debating drop decisions, or discussing circumstances that may be affecting your course experience.

II. Grades and Graded Assignments

There will be **1000 points total** for the class.

Lab Prelabs (Drop lowest):	75 points*
Lab Participation/Safety:	100 points
Lab Exam	75 points** (out of 100 possible)
3 Quizzes (25 points each, can be replaced by MT):	75 points***
3 Midterms (125 points each):	375 points [†]
Final Exam:	300 points [†]
1000 points	

*At the end of the quarter, assignments will be scaled to be worth 75 points for Lab Prelabs

**You are capped at 75 points for the lab exam, but 100 points will be available.

***Quiz 1 can be replaced by Midterm 1 score, Quiz 2 can be replaced by Midterm 2 score, etc.

[†] For flexibility, your final exam score can replace your lowest midterm grade. In that case your midterm score would be $\text{final exam score} \times \frac{125}{300}$

The grading scale below shows how final grades correspond to points. It is possible the grade ranges shift at the end of the quarter when grades are determined. However, any shift in a grade range will only serve to help you. That is, these ranges will only ever move downward.

Grade	%	Grade	%	Grade	%	Grade	%
A+	95+	B+	82 – 85	C+	70 – 75	D	55 – 63
A	89 – 95	B	78 – 82	C	63 – 70	F	< 55
A–	85 – 89	B–	75 – 78	No C–			

III. Lab

All students are required to have some form of lab notebook, physical or electronic. This is where you will store all lab-related content. I will not formally check the notebook, but you are expected to have all lab work organized in one location (if electronic, a word document would suffice).

Signing the safety contract, watching the safety videos, and completing the safety quiz provided on Canvas is required for attending any lab experiment. Failure to do so by the first experiment may result in loss of registration in the class.

A. Lab Assignments:

Each lab experiment will have an associated prelab report and/or assignment. All prelab assignments must be your own writing. This applies regardless of whether you have a lab partner for an experiment or not. Plagiarism or other violations of academic integrity will result in a zero on all points related to that lab. Egregious or multiple violations will automatically result in a 0/100 for lab participation points. No portion of a prelab should be shared from one person to another – that would be plagiarism.

Late assignments will receive a 25% deduction for every day the assignment is not submitted. However, late assignments will always be worth a minimum of 50% of the points – incentivizing you to turn them in, even when late.

i. Prelabs

Pre-labs will be submitted electronically (you may submit a photo of your lab notebook page if applicable) on Canvas at the **start time** of the first lab for each new experiment.

Submission of a **completed** pre-lab is required to participate in the lab experiment. Failure to do so will result in an unexcused absence. Pre-labs are essential for class safety – coming into lab class without an understanding of the hazards or procedures is inherently unsafe.

Format and content of pre-labs may vary from lab to lab, but they all will require you to provide a table of reagent information and write out your procedures in a step-by-step form.

ii. Built-in Flexibility

There is **built-in flexibility** with the Lab Prelabs. This flexibility provides a buffer intended to ease your stress and reduces the need to request official exceptions for one-off issues (*e.g.* illness, technical issues). Your **lowest percentage prelab** will be dropped **if all lab assignments are submitted and adequately completed** (*i.e.* missing or partially completed prelabs are not dropped).

Therefore, for one-off issues, extensions or exceptions will not be granted. This flexibility is meant to account for those issues. For more extreme circumstances, please do email me so we can discuss options.

B. Lab Participation/Safety

This section covers attendance, participation, safety, and cleanliness in lab. It is intended that everyone should easily receive all points in this category. These points cannot be made up with the Lab Exam.

i. Absences/Tardiness

Attendance is required in all lab classes. For flexibility, you are allotted **one** absence, regardless of the reason for that absence. After that first absence, all other absences must be cleared with me, and may be **excused** at my discretion. However, you must **email** me to request an excused absence **before the start of lab**. Evidence (such as a doctor's note for illness) should be provided via **email**. It is **your responsibility** to address any absences. For safety reasons, attending another lab section to make up lab is not possible.

All other absences are **unexcused**. Unexcused absences result in a 15-point penalty, and any work missing due to an unexcused absence cannot be made up. You are allowed **three** total absences (excused + unexcused). **Additional absences beyond that may result in**

automatic failure of the course (this would be at Dr. Chang's discretion depending on the circumstances of these absences).

For tardiness, arriving a couple minutes late on occasion happens. However, consistent tardiness will result in a 5-point penalty. Tardy students may even be asked to stay late to help clean-up the lab. Students arriving more than 15 minutes late will miss most of the pre-lab lecture, resulting in an unexcused absence due to safety concerns. Failure to wear proper PPE will result in an unexcused absence as you will be sent home.

Additionally – on exam days, you are still required to attend lab. **You will not be allowed to complete the exam if you miss lab that day.**

ii. Participation

In general, completion of lab experiments and assignments is your participation grade. Buried within this is preparation. You are expected to have read through the procedure before lab, and should pay attention to the mini-lecture at the start of lab. Not only are you responsible for this material on the lab exam, but it is also a courtesy to your peers and instructor – your instructor has 30 students to monitor in a given lab section, and cannot dedicate much time to walking an individual student through the basics of the procedure.

That being said – students are in lab to learn and are not expected to fully understand experimental procedures. When you are unsure how to proceed (ESPECIALLY if you think something is unsafe), do ask me questions. Being confused is acceptable; not doing anything about it is not. On rare occasions, a student will stand around and do nothing for the majority of the lab period (essentially letting their lab partner do all the work). If this occurs, the lab will be counted as an unexcused absence.

Additionally, the traditional lab report is becoming increasingly obsolete with recent advances in technology. These may be replaced with in-lab activities/assignments, which could vary from experiment to experiment. These activities are included as part of your lab participation grade. Failure to engage or participate in these activities or assignments may result in an unexcused absence.

iii. Safety

Safety is the most important part of lab. It should be first made clear that accidents and unintentional safety hazards happen in lab, and a student will not be penalized in these circumstances, unless these hazards are repeatedly caused by carelessness and disregard for the lab safety.

Informing your instructor of any accident/spill/hazard is a must. Honesty is the best policy, and your instructor understands students are far from perfect. Causing a spill or accidentally breaking glassware or instrumentation happens – not informing your instructor of these situations is an intentional disregard for safety.

Intentional disregard for safety is unacceptable in the lab and may result in a 20-point penalty for a first offense and a 0/100 in this point category for future offenses. See the safety guidelines on the next page for more details.

Unless explicitly given permission by your instructor, you are to have your safety goggles on at all times in lab. You must also wear long pants and closed-toed shoes. Dr. Chang will forbid participation in lab if you do not adhere to these guidelines, resulting in an unexcused absence. See the safety guidelines on the next page for more details.

iv. Clean-up

Before leaving lab, **you are expected to clean up your area and all glassware and equipment you used.** Students are expected to check with me if everything is satisfactorily clean. Leaving a mess for me, or another faculty member, to clean up is unacceptable and will result in a 5-point penalty for the first offense, and a 20-point penalty for each additional offense. In some circumstances, the entire class may be penalized for egregious offenses. I may assign students (often the late ones!) for each lab to assist me with general cleanup; ignoring this cleanup assignment will result in a 5-point penalty to the lab participation grade.

C. Lab Exam

There are 100 points available in the lab exam, but you are capped at 75 points in this category.

The content of the lab exam will be specified before the lab exam, but will concentrate on

- 1) Analysis of data
- 2) Understanding of lab procedures and why certain steps were included.

This material will be covered through lab lecture and in the assigned readings and analysis for each experiment. No notes or electronics other than a calculator are allowed for the lab exam. The lab exam will solely be a written exam, no chemicals or glassware will be used.

Excused absence policy for the lab exam follows the regular exam excused absence guidelines. However, if the lab exam is missed **for excusable reasons**, a makeup exam may be given. The makeup lab exam will be different from the original version, to discourage academic integrity violations, and may have less than 100 points available. Dr. Chang reserves the right to move the lab exam points to the final exam if a makeup lab exam is unable to be scheduled.

D. Lab Safety Guidelines (adapted from American Chemical Society Safety in Academic Laboratories Guidelines, 7th edition)

1. **Department-approved safety goggles must be worn at all times that chemicals or glassware are in use**, including when obtaining items from the stockroom or moving equipment to or from your locker. Goggles may not be removed until all lab work has been completed and all chemicals and glassware have been stored.
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, may be worn in lab.**
3. **Shorts, cut-offs, skirts, or pants exposing skin above the ankle, and sleeveless tops may not be worn in lab.**
4. Hair reaching the top of the shoulders or below must be tied back securely.
5. Loose clothing must be constrained, while form-fitting items should be avoided as chemicals can be held against the skin.
6. Wearing jewelry (rings, bracelets, watches, etc.) is discouraged as chemicals can seep in between jewelry and skin.
7. Eating, drinking, or applying cosmetics in the laboratory room is forbidden at *all* times, including during lab lecture.
8. **Headphones are prohibited in lab at all times as you must be able to hear any emergency announcements made.**
9. Students are required to know the locations of the eyewash stations, emergency shower(s), and all exits.
10. You may not be in the laboratory, balance, or instrument rooms unless an instructor is present to supervise.
11. Students not enrolled in the course may not remain in the lab even for lecture once the add deadline has passed.
12. If for any reason you feel faint during the lab, notify an instructor before stepping out for air so you can be supervised.
13. Never point a heated system towards any person, including yourself.
14. Glass and needles must only be disposed of in the appropriate containers, never in the regular trash.
15. Except for soapy or clear rinse water from cleaning glassware, **no chemicals may be poured into any sink**; any remaining chemicals from an experiment must be poured into the appropriately labeled waste bottle.
16. Students must follow the Code of Conduct at all times while in the lab. Any behavior that could startle, frighten, or injure anyone in the lab is not allowed.

IV. Lecture

A. Attendance and Course Engagement

Attendance is expected at every lecture. However, there is no grade penalty for missing lecture. You are strongly advised to attend every class. **Do not fall behind in this class.** Each lecture builds on the previous lecture. It is easy to skip class and tell yourself that you will look over the notes later, but in practice this does not happen.

Electronics are allowed in the classroom, provided they are on silent mode. How you choose to spend your time in lecture does not concern me. My only ask is that you show courtesy to your peers. Causing noise or disruptions that hinder the learning of those around you is **unacceptable**.

I encourage you to raise your hand to ask questions or volunteer answers. Don't be afraid to ask questions or be wrong in class – lecture is when I *expect* you to be confused or incorrect. Even the best students often do not immediately understand most topics. That understanding often comes outside of lecture (usually through homework). Do not be discouraged if you are lost in lecture. Use the active learning opportunities to ask me to help catch you up.

There will be active learning opportunities sprinkled in during lecture. This will usually be done through Poll Everywhere (PollEV). All you need is a phone/laptop/tablet that can access the class poll everywhere link. Your answers will not be graded, so no need to make an account. These questions allow me to quickly assess where the class is at on a certain topic. Thus, putting effort into these active learning questions will only help your own education.

B. Homework via Mastering

Homework is completed through Mastering Chemistry, an online platform. It is **ungraded**, but contains suggested due dates that encourage you to keep up with the course. Often, the next lecture will not make sense if you haven't already mastered skills from the previous lecture. For further motivation, I guarantee that every exam will have at least one question that is trivially derivative, or even identical, to a Mastering homework problem.

Additionally, quality is better than quantity – I rather you completely understand one problem than half-understand ten. Don't give up on a question until you're happy with the effort you've put into that problem. You should be physically writing down answers to homework problems, not just simply staring at problems and imagining what the answer would look like. **If there is one piece of advice I will give you (from personal experience), it is that the best learning occurs when you are struggling through homework for hours.** One of the most important skills in life is knowing when to ask for help. If you're still confused after looking at the explanation given by Mastering, take the time to struggle and figure it out. This may involve looking over class notes or the textbook. If that doesn't help, then **feel free to email me** to ask the question, or **come to office hours**. Students in my previous classes usually would compile a list of questions from each HW to email me. Normally I'll get back to you within two days.

C. Exams

There are 3 quizzes (25 points each), 3 midterms (125 points each), and a final exam (300 points).

i. **Exam/Quiz Rules**

Exams are closed book. No notes, formula sheets, or internet-connected devices are permitted at your desk or on your body. A periodic table and formula sheet will be provided for you. Backpacks will be placed at the front of the classroom away from the desks. If you need to exit the room for any reason during an exam (*i.e.* using the restroom), you must show me that your phone is inside your backpack. Only one student will be allowed outside the room at a time.

Each quiz is 25 points and serves to familiarize you with how I write and grade assessments, as well as provide feedback, before you reach the midterm. If you perform better (percentage-wise) on the midterm than the quiz, your quiz score percentage will be replaced with your midterm score percentage (raw midterm score only, without any extra credit and the like). Midterm 1 replaces Quiz 1, Midterm 2 replaces Quiz 2, etc.

ii. **Final Exam**

The final exam is cumulative. The final exam time is assigned by the college and will not be offered at any other time.

Additionally, your final exam score can replace your lowest midterm grade. For example, if your lowest exam score is a 50/125 (40%) on Midterm 2, and you score 150/300 (50%) on the Final Exam, your Midterm 2 grade becomes a 62.5/125 (50%).

iii. **Exam Absences**

Since your final exam score can replace a midterm, there is built-in flexibility for missing one exam. Thus, there is no need to ask for an excused exam absence. Similarly, the quizzes are replaced by the midterms. **Because of this flexibility, the quizzes, exams, and final will not be provided outside of the scheduled times.**

If a second midterm is missed due to unavoidable conflicts or something unexpected (*e.g.* illness), you must email me **before** the exam is administered and request to allocate those points to the final exam. You must provide a doctor's note (if illness) or some other form of verification for the emergency. It is up to my discretion whether this request is granted.

iv. **Regrade Policy**

You may request regrades through Gradescope. Do not ask me in office hours for a regrade, submit your request via Gradescope. Do not abuse this policy – I will regrade the entire exam for students who submit multiple regrade requests. It is possible for the grade to go up or down. Additional work or explanation not already provided on the exam cannot be considered. Warnings aside, if it's an obvious error on my part, do not hesitate to request a regrade.

v. Academic Integrity

All violations of academic integrity are inexcusable regardless of circumstance, and will result in a zero on the assessment. All instances of cheating or plagiarism will be reported for further disciplinary action. Any violation of the Exam rules in section *C.i* is a violation of academic integrity. In addition, discussing the contents of any assessment with a student who has yet to take the assessment is a violation of academic integrity. All assessments given in class are protected by US copyright law and may not be posted online or redistributed without the written consent of Dr. Chang.

vi. DSPS Extended Time

Accommodations for a range of disabilities are available through Disability Support Programs & Services (DSPS). To receive an academic accommodation on assessments – such as additional time, a reduced-distraction environment, or the use of alternative media or assistive technology – you must first be evaluated by Disability Support Services (DSS) and obtain a Test Accommodation Verification (TAV) form. ***Absolutely no accommodations can be provided on assessments without a completed TAV form.***

V. Approximate Schedule

This is an approximate schedule for the course, which may change depending on course pace. The midterm dates may shift by a class, but will be in Weeks 4, 8, and 11. Quiz dates may also shift by a class, depending on course pace. Other than the lab exam, all assessments will take place in lab – however, on rare occasions, circumstances arise that may shift whether an assessment is in lab or lecture. Any such change will be communicated ahead of time.

Week	Class #	Dates	Chapter	Lecture topic	Lab topic
1	1	9/22	1/2	Atoms and Elements	Syllabus / Check-in
	2	9/24	2	Moles	<i>Measurement</i>
2	3	9/29	3	Molecules	<i>"Nomenclature"</i>
	4	10/1	4	Stoichiometry	<i>Hydrate</i>
3	5	10/6	4	Limiting Reagents	Quiz 1/ <i>Hydrate</i>
	6	10/8	5	Molarity	Ionic Equations
4	7	10/13	5	Review	<i>Types of Reactions</i>
	8	10/15	7	Heat Capacity	Midterm I*
5	9	10/20	7	Enthalpy	<i>Precipitation</i>
	10	10/22	7	Hess' Law	Intro to Quantum
6	11	10/27	8	The Hydrogen Atom	<i>Conductivity</i>
	12	10/29	8	Orbitals	Quiz 2/ <i>Conductivity</i>
7	13	11/3	9	Multielectron	<i>Acid-Base Titration</i>
	14	11/5	9	Periodic Trends I	<i>Acid-Base Titration</i>
8	15	11/10	9	Periodic Trends II	Midterm II*
	16	11/12	10	Covalent Bonds	Calorimetry
9	17	11/17	10/5	Lewis Structures	<i>Redox Titration</i>
	18	11/19	10/11	Resonance	Quiz 3/ <i>VSEPR</i>
10	19	11/24		Lab Exam	<i>Line Spectra</i>
	Thanksgiving – No Class				
11	20	12/1	11	Hybridization	Midterm III*
	21	12/3	11	Molecular Orbital Theory	<i>Molecular Model & Check-out</i>
12	Final Exam: Tuesday, December 8, 11:30 AM – 1:30 PM				

Other Important Dates:

9/22-9/24: Must attend lecture/lab to maintain your registration.

10/4: Last day to drop classes **without** a W

11/13: Last day to drop classes **with** a W

VI. Other Policies

A. Use of Artificial Intelligence (AI)

Popularity of AI tools (such as ChatGPT) has sharply risen in the last couple years. **I encourage** you to learn how to use these tools **correctly**, as long as you **do not use them on any assessments**; additionally, all content in prelabs **must be your own writing**, though AI may assist with the formatting and research. Be mindful of the drawbacks of these AI tools. Do not assume AI-generated answers are correct. Treat it as a Google or Wikipedia-like resource. Verify information by asking the AI to provide the source(s) and examine the source yourself. When in doubt, ask me to help you verify information. Keep in mind – the chemistry in real life is more complex than that in an undergraduate course. AI does not know the simplifications or rules we set in place to help achieve our learning goals.

B. Medical Considerations

Although you are not obligated to divulge any private information to me, if you have a medical condition that may affect your experience in this course (especially in lab!), you are encouraged to discuss with me what alternate arrangements can be made for your own safety. If you are pregnant or may become pregnant, I recommend you consult with your doctor about being enrolled in this course. A list of chemicals used during the quarter is available upon request so that your doctor can advise you about your participation in lab.

C. Copyright Statement

Materials in this course are protected by the United States copyright laws. I am the copyright holder of the materials I create, including notes, handouts, slides, and videos. You may make copies of course materials for your own use and you may share the materials with other students enrolled in this course. You may not publicly distribute the course materials without my written permission.

D. Locker Policy

If you are provided a lab locker for the quarter, you are required to officially check out of that locker, whether you complete the course or not. If you drop the course before the official *add* deadline, your locker may be cleared and reassigned to another student without your being present if there are students on the wait list attempting to add into the course. After the official add deadline, you must check out by the assigned checkout date for the lab section. If you drop or withdraw from the course, you may make arrangements to check out of your locker at an earlier time. Failure to check out of your lab locker by the official checkout date may result in your grades being held and/or a block being placed on your future registration.

E. Respect for Diversity

It is my intent that students from all diverse backgrounds and perspectives be well served by this course, that students' learning needs be addressed both in and out of class, and that the diversity that students bring to this class be viewed as a resource, strength, and benefit. It is my intent to present materials and activities that are respectful of diverse identities (e.g., those based on gender, sexuality, disability, age, socioeconomic status, ethnicity, race, religion, and culture). Your suggestions are encouraged and appreciated. Please let me know ways to improve the effectiveness of the course for you personally or for other students or student groups.

F. Other Resources

I know you will do the best you can in this course; however, it should never be at the expense of your own mental and physical health and your overall well-being. **Your performance in my class does not reflect you as a person.**

De Anza has many resources and programs to support you. These resources may be especially helpful:

- i. **Student Success Center:** <https://www.deanza.edu/studentsuccess/>
In-person and online peer tutoring available in all areas Monday through Thursday, beginning the second week of the quarter.
- ii. **General Counseling:** <https://www.deanza.edu/counseling/>
Many **academic programs** and **Learning Communities** have their own counselors. To find a counselor, visit [Our Counselors](#) page. Students who aren't in a specific program should visit the [General Counseling Center](#).
- iii. **Disability Support Programs and Services:** <https://www.deanza.edu/dsps/>
The mission of Disability Support Programs and Services (DSPS) is to ensure access to the college's curriculum, facilities, and programs, and to promote student success in realizing individual educational and vocational goals. DSPS includes on- and off-campus programs and services offering students with disabilities a comprehensive array of accommodations, educational assistance classes and support services.
- iv. **Mental Health and Wellness Center:** <https://www.deanza.edu/mhwc/>
The Mental Health and Wellness Center provides up to ten one-on-one individual therapy sessions to registered De Anza students each academic year, from Fall through Spring quarter. Session limits reset every Fall and do not carry over to the following year. During the Summer quarter, students are eligible for up to four individual therapy sessions. For those who may need more than the allotted sessions or are seeking longer-term support, they also offer access to an online therapy service called [Uwill](#).
- v. **Pride Center:** <https://www.deanza.edu/pride-center>
The Pride Center provides a **safe, supportive and welcoming** space for all students across the gender and sexuality spectrum to build community, find resources and connect with the support needed to thrive in their college experience.
- vi. **Higher Education for AB 540 Students (HEFAS):** <https://www.deanza.edu/hefas/>

HEFAS (Higher Education for AB 540 Students) is an institutional and educational program that provides **free services**, reduces financial stress, and creates a **safe space** for all – with an emphasis on students with an undocumented, low income, or AB 540 status.

Student Learning Outcome(s):

- Identify and explain trends in the periodic table.
- Construct balanced reaction equations and illustrate principles of stoichiometry.
- Apply the first law of thermodynamics to chemical reactions.

Office Hours:

1:30 PM - 2:20 PM

3:00 PM - 4:40 PM

S55 T,TH

Zoom W