INSTRUCTOR INFORMATION

Instructor: **Guibo Zhu, PhD** (she/her)
Email: zhuguibo@fhda.edu
Office hours:

Online via Zoom: https://fhda-edu.zoom.us/j/2487899328
Friday: 9:30 AM – 10:30 AM

Thursday: 9:30 AM – 10:30 AM

CHEM 25: Preparation for General Chemistry

Class Meeting Times

CRN 28934

Lecture: MW 12:30 PM – 02:20 PM in DA-G2
Laboratory (M): 2:30 PM – 5:20 PM in SC2208

Required Materials

- Textbook: ***Introduction to Chemistry; Tro. 7th ed.*** Directions for obtaining the electronic version of this book are found in the **Getting Started** module. ISBN: **0135402220** ($40). You can also try to find a used version of the book on Amazon or any used book retailer.

- Lab Manual: **Preparation for General Chemistry** (Laboratory Manual for General, Organic, and Biological Chemistry) listed for Chem 25 at the De Anza Bookstore**.** This is a custom lab manual that can only be purchased at the De Anza Bookstore. Make certain to buy the version listed for Chem 25. ISBN:9781307817706.

- Calculator

You will need a scientific or graphing calculator. Contact De Anza College Library about checking out a calculator for the quarter.

- Lab notebook

A lab notebook with pages numbered (you could number the page by yourself before you use the notebook. It means no tear any pages during the quarter! Also, you have to write prelab and record your lab results in notebook each time. And before you leave the lab, please let me sign it.)

- Safety Goggles

UV sterilized shared safety goggles will be provided! You can also purchase your own safety goggles, but they must meet “ANSI Z-87.1-1989R” specifications.

- Laboratory coat

A lab coat is *recommended*. Please check if you can buy it at the student center. You may also want to purchase it on Amazon (about 20$). Laboratory coats are *recommended* to minimize the risk of chemical contamination of your clothing.

- Camera linked to the internet – For some of your classwork, you will need to take a picture of your work and submit it to CANVAS. Phones are 100% okay. Please let me know if this is an issue as soon as possible.

- Canvas

You will need access to a computer and Internet for this course. Lecture slides and other course materials will be posted on Canvas. You may download the Canvas Mobile App to your phone or use the MyPortal to access it.

Prerequisite: *Intermediate algebra or equivalent (or higher), or appropriate placement beyond intermediate algebra*

Advisory: *ENGL C1000 or ENGL C1000H or ESL 5*

Grade type: *Letter Grade (see Letter Grade assignments)*

Course Description

This course is an introduction to the core theory and problem-solving techniques of chemistry as preparation for CHEM D001A and CHEM D01AH and other science-related fields, as well as gravimetric and volumetric analysis, rudimentary laboratory equipment and operations, and the preparation and maintenance of a laboratory notebook.

Student Learning Outcomes

- Assess the fundamental concepts of modern atomic and molecular theory.
- Evaluate the standard classes of chemical reactions.
- Demonstrate a fundamental understanding of mathematical concepts pertaining to chemical experimentation and calculations.

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/policies/academic-integrity.html. All forms of cheating (cheating during an exam/quiz or copying/using work other than your own) will result in a 0 for the entire assignment. Academic dishonesty is reported to the disciplinary committee. Academic consequences of a failure of academic integrity may include receiving a lowered or failing grade on a particular piece of academic work, which may lead to receiving a lowered or

failing grade for the course. Administrative consequences may include being placed on disciplinary probation, suspension, or expulsion.

Disability Service Support

De Anza is committed to providing support for all students. Please contact me as soon as possible if you would like to use any accommodation and I will be happy to do what I can to help. For more information, visit Disability Service Support at https://www.deanza.edu/dsps/dss/.

Classroom Conduct

I believe that the role of an educator is to create an atmosphere where students feel valued, are free to express themselves, are enthusiastic about learning, and able to take ownership of their education. I encourage you to ask questions whether in class or by email/Canvas.

Late Work Policy

Late prelab write-ups are not accepted since preparation for safe lab work is mandatory. Prelabs are due by 2:29 PM the day before the laboratory period. Other late work is accepted, but once an assignment has been graded, submissions of that assignment will be worth half credit maximum. If you anticipate not meeting a deadline for an assignment, please contact me and we can work together to make an alternate schedule.

Course Schedule.

The tentative laboratory and lecture schedule is found at the end of the syllabus. For lecture final exam schedule, please check the De Anza College website.

Grading Policies

Letter grades are calculated from the percentage of total points accumulated according to the grade distribution shown below:

A^+:95-100% A: 90-94 % A^-: 87-89 % B^+: 84-86 % B: 80-83% B^-: 77-79% C^+: 73-76% C : 70-72% D^+:66-69% D:63-65% D^-:60-62% F:0-59%

Please Note: I will not give any 'W' drops after the drop deadline so be sure to watch for that date and drop the class if you must withdraw. It is your responsibility to officially drop the class. If you do not withdraw before the deadline, you will receive a letter grade (A-F). I will not make any exceptions to this rule.

A grade of 'C' or better is required to pass this course. No artificial curve will be used in grading, meaning the final letter grade is based solely on the number of points earned.

Points Distribution

Lecture Exams (200 points) (Lowest exam score will be dropped) 400 pt

Final Exam 300 pt

Homework (10 pt each* 14 chapters - 10) (Lowest score will be dropped) 130 pt

Pre-lab/lab-prep Assignments (5 points each*9 - 5) (Lowest score will be dropped) 40 pt

Laboratory Reports (20 pt each*9 -20) (Lowest score will be dropped) 160 pt

Lab safety/cleanup/In-lab participation: (2 pt each lab * 9-2) (Lowest score will be dropped) 16 pt

Lab Exam 50 pt

Total Possible Points : 1096 pt

Note: Dr. Zhu reserves the right to adjust lecture exam dates and to modify the distribution of grade points at any time during the quarter.

Exams – There are three lecture exams during the regular quarter, worth 200 points, and a final exam, worth 300 points. The material covered in the lecture, in the assigned reading, end-of-chapter problems, and on quizzes will be on the exam. Each lecture exam is worth 200 points. **Only your top two lecture exam scores will count as part of your overall course grade. No early, late, or make-up exams will be given.** If you miss a lecture exam due to truly exceptional circumstances – such as a debilitating accident or the death of a close relative – then the grade for the missing exam will be substituted by your grade on the final exam (adjusted proportionally for the difference in the number of points possible).

Final – The final exam is cumulative, requiring mastery of material covered throughout the entire course. The final exam is **not** one of the exam scores that may be dropped out of your overall course score. The final exam time and date is scheduled by De Anza and cannot be changed unless every student in the class agrees and the time change is approved by the dean. Be sure to schedule any trip around your final exam time. **NO make-up final exam will be given.**

Homework – Your understanding of general chemistry principles does not end in the classroom. Homework are assigned from the textbook or from other sources to give you additional practice with lecture material. A deduction of 10% per day will be applied to late submissions, up to a maximum penalty of 50%.

Laboratory Assessment

Safety – Labs offer an opportunity to have hands-on learning and extra practice for key chemistry topics/concepts. Critical to this, however, is lab safety. The prelab lecture at the start of lab will discuss important safety hazards, handling chemicals safely, and proper chemical waste disposal. During week 1, there will be a safety review, and students will sign a safety contract. Failure to submit the safety contract by the beginning of week 2 will result in being dropped from the course.

Notebook Preparations/Prelabs (5 points each) – Submit a picture of your Notebook Prep/Prelab on Canvas before the lab starts on Mondays (the prefab due time is 2:29 PM each Monday). Notebook preparations are required to ensure that you are prepared for the lab. Students who fail to submit the notebook preparations on time risk not being able

to participate in the lab and count as 1 of the 3 lab absences. For multi-day experiments, you are only required to submit one prelab, but this should be turned in based on the deadline specified above.

In your prelab, please include the following information:

1) TITLE OF THE EXPERIMENT and DATE STARTED

2) OBJECTIVE – Please write the goal of the experiment in your own words. You may include more than one objective/goal.

3) BACKGROUND – You are expected to make the connection between the relevant lecture material and the lab experiment. Briefly write in your own words the theory behind the experiment you are going to perform. You may include the relevant chemical reactions and formulas.

4) LIST OF REAGENTS - Include a list of necessary STOCK reagents. Make sure all concentrations are noted.

5) SAFETY – Consult the Safety Data Sheet (SDS) that you can find online for the more hazardous chemicals that you will be using in the experiment. You should also include the most hazardous part of the experiment (example is using concentrated HCl) and the safety precautions that you need to follow.

6) EXPERIMENTAL SET UP AND DIAGRAMS – Draw and label the relevant set ups and diagrams for the experiment.

7) DATA COLLECTION – You are expected to write meaningful observations and data as part of the experiment. Have your instructor initial your collected data at the end of the lab period.

8) WASTE DISPOSAL– Specify the expected waste that you will generate in the experiment. Make sure you know where and how to dispose of each type of waste material. This will be discussed during the first day of lab.

In-Lab (2 points each) –Critical to successful labs are prompt arrival on time and safe conduct during the lab. After finishing the experiment, clean up, and wipe down your bench to receive the full points, less any lost points for being late and/or safety violations.

Lab Reports (20 points each) – To demonstrate understanding of the experiment, labs have data analysis, graphs, and some follow-up questions to be completed. Lab reports are submitted on Canvas and are typically due by 11:59 pm one week after the completion of the lab. For multi-day experiments, the deadline is a week after the last day of the experiment. Lab reports submitted up to one week late will incur a 10% deduction. After one week, an additional 10% will be deducted for each subsequent week late, up to a maximum penalty of 50%. Submission of lab reports is permitted only for laboratories in which the student was present. Lab reports for unattended sessions will not be accepted or graded.

Check-In/Check-Out – Each student will have access to a lab drawer with the lab equipment required to complete the labs. Students will check-in and check-out of these drawers during the first and last lab periods, respectively.

Lab Final – The lab quiz is a comprehensive quiz covering key lab content. The lab quiz will be given during the last lab period.

Lab Attendance

It is department policy that any student with **3 or more lab absences** cannot pass Chem 25. If you anticipate missing a lab, please contact your lab instructor ASAP to see if any options are available. To make room for students on the waitlist, unexcused lab absences during the first 2 weeks of lab risk being dropped from the course. Missing the prelab lecture at the beginning of an experiment presents unnecessary safety risks to you and your colleagues. For these reasons, lab attendance is critical and will be recorded at the beginning of lab. Up to 5 points can be lost if you do not arrive within the first 15 minutes and arriving more than 15 minutes late risks not being able to complete the lab and receiving a zero for in-lab and lab report points for that experiment. **Missed labs cannot be made up**.

Clean Up

Part of your grade is to maintain any common work areas as well as your own laboratory bench at all times. Clean up any minor spills immediately, close all chemical containers, put away all equipment and wipe up your work area upon completion of the lab. Failure to clean up after yourself will cost you lab points and can result in safety hazards so please act responsibly. If you are unsure about how to clean up a spill, please seek assistance from your instructor.

Rules of Conduct (Laboratory)

- You are expected to be well prepared for the lab, as evidenced by your notebook preparation and your safety awareness (chemical handling, goggles, gloves, etc.)
- You are encouraged to seek help before and during the lab in order to ensure a safe and positive outcome.
- You must adhere to the safety/ hazardous material handling precautions outlined in the Laboratory Contract and the experimental procedure. Failure to do so will result in failing grades and possible dismissal.
- Attendance in the lab is mandatory. Labs cannot be made up. If an illness or other event necessitates that you miss more than two lab meetings, your grade will be compromised.

Academic Support

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/studentsuccess/mstrc/.

Student Support Services

De Anza College offers a variety of services to help you succeed. For a complete list of services, please visit https://www.deanza.edu/services/.

Tentative Laboratory Schedule Fall 2025

Week No.	Monday (2:30-5:20 PM)
1	**Check-in**
2	**Measurements (p11-28)**
3	**Density & Gravity (p29-41)**
4	**Atomic structure & Periodic table (p43-57)**
5	**Ionic Compounds (p59-74)**
6	**Empirical Formulas (p107-120)**
7	**Chemical Reactions (p91-106)**
8	**Molar Volume (see Canvas for lab instructions)**
9	**Vinegar Analysis (p121-134)**
10	**Covalent Compounds (p75-90)**
11	**Check-out and Lab Final**

12	**No Lab**

Tentative Lecture Schedule (Schedule is tentative, and dates/topics are subject to change in the event of extenuating circumstances)

Week No.	**Monday**	**Wednesday**
1	**Chapter 1** (Introduction)	**Chapter 2** (Numbers and units)
2	**Chapter 3** (Matter)	**Chapter 4** (Atoms and Elements)
3	**Chapter 4** (Atoms and Elements-continued)	**Exam 1**
4	**Chapter 5** (Molecules and compounds)	**Chapter 6** (Chemical Composition)
5	**Chapter 6** (Chemical Composition-continued)	**Exam 2**
6	**Chapter 7** (Chemical Reactions)	**Chapter 7** (Chemical Reactions-continued)
7	**Chapter 8** (Quantities in Chemical Reactions)	**Chapter 8** (Quantities in Chemical Reactions-continued)
8	**Exam 3**	**Chapter 9** (The electron in Atoms and Periodic Table)
9	**Chapter 10** (Chemical Bonding)	**Chapter 11** (Gases)

10	**Chapter 12** (Liquids, Solids, and IMF)	**Chapter 13** (Solution)
11	**Chapter 14** (Acids and Bases)	Final Exam Review
12	**Final Exam** (please see De Anza site for schedule)	

Laboratory Safety Contract

Adapted from the American Chemical Society Safety In Academic Laboratories Guidelines, 7th edition. These minimum safety requirements must be followed by all students and rigorously enforced by all chemistry faculty.

Instructions: All students must read and sign this contract prior to commencing lab activities or checking in to a lab drawer.

Enrollment Limits: Due to safety concerns and space limitations, enrollment for Chem 1ABC, Chem 10, Chem 25, and Chem 30AB is limited to no more than 30 students. Organic Chemistry (12ABC) is limited to no more than 26 students.

In case of an emergency, dial 911 from a classroom phone. If you must use a cellphone, the FHDA police emergency number is 408-924-8000.

Please see https://www.deanza.edu/collegeops/emergencies/evacuation.html for evacuation procedures and other emergency preparedness information.

The following rules must be followed at all times in the lab rooms, regardless of the activity.

1. 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
2. Shorts, cut-offs, skirts or pants exposing skin above the ankle, and sleeveless tops or tops that expose the abdomen may not be worn in the lab: ankle-length clothing must be worn at all times.
3. Eating, drinking, or applying cosmetics in the laboratory is forbidden at ALL times, including during lab lecture. Food and drink containers must be stored outside the lab.
4. Use of electronic devices requiring headphones or earbuds in the laboratory is prohibited at ALL times, including during lab lecture.

The following rules must be followed anytime students have glassware or chemicals out and in use. Note that if some students finish their experiments, they must keep their PPE on while others have chemicals and glassware out.

5. Chemistry Department-approved safety goggles (NOT safety glasses) must be worn at all times once laboratory work begins. Safety goggles must include a flex seal and indirect venting, and carry ANSI Z87.1+ and CSA Z94.3 certifications. Appropriate goggles may be purchased from the De Anza College bookstore.
6. Goggles must be worn at all times after lab lecture, 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 all student drawers.
7. Nitrile gloves should be worn when handling chemicals and glassware and removed prior to handing any personal electronic devices.
8. Hair reaching the top of the shoulders must be tied back securely

9. Loose clothing must be constrained
10. Chemically-resistant and flame-retardant lab coats are strongly recommended.
11. Shoes made out of leather or polymeric leather substitute are strongly recommended.
12. Wearing "...jewelry such as rings, bracelets, and wristwatches in the laboratory..." is discouraged to prevent "...chemical seepage in between the jewelry and skin...".
13. Students with a medical condition or disability (e.g. learning, sensory, mental health, or physical condition) that may hinder their ability to participate or succeed in the class safety should contact DSPS to coordinate accommodations. You may also communicate necessary accommodations directly to your instructor, and you are under no obligation to reveal private details.
14. If you are pregnant or experiencing a related condition, you are advised to contact the campus Title IX coordinator (Laureen Balducci, balduccilaureen@fhda.edu) to arrange necessary accommodations.
15. Students are required to know the locations of the eyewash stations, emergency showers, and all exits.
16. Backpacks and other trip hazards must be stored under a desk and walkways must remain clear.
17. Students may not be in the lab without an instructor being present.
18. Students on the waitlist may not participate in lab activities until and unless enrolled in the course.
19. 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 by your instructor.
20. You may only perform experiments as instructed.
21. At the end of each experiment, all glassware should be cleaned with water and detergent prior to storage.
22. Any chemical spills or broken glassware must be cleaned up immediately. Broken glassware must go in the sharps waste and not in the regular trash.
23. 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.
24. Reckless behavior will not be tolerated. If your actions endanger the health and safety of yourself or someone else you will be asked to leave and you will receive a zero for the day.

By signing below, I, _____ _____

(first name) (family/last 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):

• Assess the fundamental concepts of modern atomic and molecular theory.
• Evaluate the standard classes of chemical reactions.
• Demonstrate a fundamental understanding of mathematical concepts pertaining to chemical experimentation and calculations.

Office Hours:

TH	9:30 AM - 10:30 AM	Zoom
F	9:30 AM - 10:30 AM	Zoom