

De Anza College
Chemistry 25 Course Syllabus
Winter 2023

Instructor: Nadia Biglari

Lecture: TTh 5:30 - 7:20 PM Room S32

Lab: T 7:30 - 10:20 PM Room SC2208

Office Hours: TTh 4:30-5:30 PM

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This course syllabus is a contract:

One purpose of this syllabus is to provide you with the guiding principles upon which the class runs. Another purpose is to make sure that you have answers to common questions that might arise. This document is available at all times on Canvas. Please read it in its entirety before you ask me any questions about the course schedule, requirements, grading, etc... It is also a contract between you the student, and I, the instructor of record. Make sure that you understand its contents fully, especially the parts that pertain to testing and the computation of your grade, because so long as you remain enrolled in the course, you are implicitly agreeing to abide by these terms.

Course Description: Chemistry 25 is meant to serve as an introduction to and grounding in the core theory and problem-solving techniques of chemistry as a preparation for a General Chemistry course (Chem 1A) and other science related fields. Conceptual topics include modern atomic and molecular theory, the mole and stoichiometry, behavior of gases, thermochemistry, and an exploration of the standard classes of chemical reactions. Laboratory topics covered include an introduction to gravimetric and volumetric analysis, introductory lab equipment and techniques, and keeping a laboratory notebook. Throughout all topics we will stress both conceptual and mathematical problem-solving techniques in order to prepare students to tackle these topics more in depth in following classes.

Prerequisites: Math 114 or equivalent

Textbook & Materials:

- **Text:** Introduction To Chemistry, fifth edition by Bauer, Brik and Marks (McGraw-Hill)
- **Lab Manual:** Preparation for General Chemistry: Chem 25, by Applegate, Neely and Sakuta (McGraw-Hill).
- A scientific calculator with log and exponential functions.
- Safety Goggles, needs to meet the ANSI Z87.1 or Z87+ specification, which will generally be listed in the product description. Visorgogs or Z87.1-2010 Rates Safety Glasses
- **AktivChem online homework ISBN 978-1-955404-64-8 Activation F26 Net \$26**

Resources

Tutoring: De Anza's tutorial center is in S43. This and many other campus services can be found as part of the student success center: <http://www.deanza.edu/studentssuccess>

Disability Support Program and Services: DSPS can help you get the right tools to succeed. Their website is <http://www.deanza.edu/dsps/>

Attendance:

Attendance in the Laboratory Lecture and Lab is required. Any student who has two or more unexcused lab absences may be dropped from the course. Allowances may be made for emergencies and other complications in life. However, every absence will lower your grade.

Grading:

Three exams	30%	Lab reports	10%
Homework	10%	Lab exam	10%
Four quizzes	10%	Prelab	5%
Final Exam	20%		
Subjective Lab and Lecture	5%		

No makeup exam or quizzes will be given!

Homework (10%): Homework will consist of assigned problems on Canvas and is graded based on completeness and accuracy. As we learn by doing, "practice makes perfect," and as exam questions may be similar to the homework, it is to your advantage to take the homework seriously. Copying another student's homework is counterproductive. If you're not working it out, you won't get the benefit.

Quizzes (5%): There will be a total of five quizzes given at the beginning of each specified lecture period. Quizzes will be distributed at the beginning of class and you will be given 10 minutes to complete them. Students arriving after the quiz period will **NOT** have an opportunity to make up the quiz. Your lowest quiz score will be dropped at the end of the quarter.

Laboratory Work (25%): You will be expected to participate in lab, complete lab worksheets and reports, and pass lab exams. More details on these items can be found in the laboratory section.

Chapter Exams (30%): There will be 3 chapter exams worth 10% of your grade each. Exams will be a combination of any of the following: multiple choice, short answer/calculation problems, and vocabulary questions. Early and late exams are not administered. Missing an exam **will result in a zero** for that exam without proof of an excused absence (doctor's note, police report, etc...).

Final Exam (15%): The Final Exam is cumulative and will have the same format as the chapter exams. The exam will be given **Wednesday, Dec 14th from 7:00 AM – 9:00 AM.** The final exam cannot be retaken. *****If you cannot make your assigned exam time, you should not enroll in this class.*****

Subjective Grade (5%): A subjective evaluation will be assessed by your instructor at the end of the quarter to reward you for: your good and punctual attendance; **active participation**, preparedness for the lecture and laboratory, ability to follow written and verbal instructions, adherence to the safety rules, cleanliness practices, and overall respect for the laboratory through the proper care and use of all laboratory apparatus and instruments. These are NOT free points and must be earned.

Class Policies.

- A. Time Requirement:** This class includes appx. 4 hours of lecture and appx. 3 hours of lab per week. In order to receive a "C" or better grade, you should allow 8-12 hours of studying, reading, and preparing outside of class **PER WEEK**. Help yourself to do your best by making time to keep up with the reading and homework. *If this time commitment is not possible given your current situation, please consider taking this class at a later date when you do have more time available.*
- B. Lecture Attendance:** Attendance is a critical component of the learning process, and the lecture will cover material that may not appear in your text and help clarify the material that is. Learning Chemistry effectively depends on building up from a base of knowledge. If you do not set a firm foundation, you will not be able to build your understanding of the field effectively. **In other words, miss too many classes and you'll likely fail the class.**
- C. Class Behavior:** Be ready to start class at the scheduled time. Please arrive on time and plan on staying the entire session as late arrivals and early departures distract everyone. If you are unavoidably late, please enter quietly and find your seat as quickly and quietly. Please do not disrupt class with irrelevant conversations, either in the form of inappropriate comments or private conversations. I would always prefer you show up a little late as opposed to skipping the class entirely.
- D. Late Assignments:** **Homework is not accepted late as I will distribute the answer key the day after the assignment is due so that all students may review their work and the proper answers.**
- E. Please turn your cell phone OFF when you enter the class or lab.** You may **NOT** take calls or texts during either, except for emergencies. Students caught abusing this rule may be docked points or expelled from class or lab.
- F. Academic Dishonesty:** Cheating or plagiarizing another student's work, in whole or part, will result in a zero for the assignment, a referral to the dean and my immense displeasure. Any case where you attempt to gain unfair advantage over other students or attempt to pass off another's work as your own **is cheating**. Please see me if you have any questions. You implicitly agree to abide by the Honor Code as a condition of enrollment in this class: https://www.deanza.edu/policies/academic_integrity.html
- G. Grading:** This class is not graded on a curve. Grade cut offs are as follows: **A+ (97), A (93), A- (90), B+ (87), B (83), B- (80), C+ (76), C (69), D+ (65), D (60), D- (56), F (56-0)**
- H. Extra Credit:** Extra credit assignments are not offered in this class on an individual basis. It is unfair to allow some students to improve their grade while not allowing others that same opportunity. Some extra credit problems may appear at the end of exams and in homework.
- I. Dropping the Class:** If you wish to drop the class after the first 2 weeks, it is your responsibility to do so. If you fail to drop the class you will be assigned a grade in keeping with your submitted work.

J. Questions/Help: I am available to answer questions during office hours, by email, or by appointment. Please feel free to contact me with any problems or concerns that you have. Also remember that your fellow students are great resources.

Attendance Note

You are responsible for all the material covered in this course, and it is expected that you attend and participate in all of the lecture and laboratory sessions. *If you must be absent, then it is in your best interest to contact your instructor as soon as possible in order to find out what work you have missed.* ****Due to the high number of students wishing to enroll in this class, any unjustified absences during the **first two weeks of class will result in you being dropped.**

LAB POLICIES:

CAREFULLY read the attached DeAnza Chemistry Department laboratory policies and safety and housekeeping rules.

You must complete and turn in the Student Contract (provided by instructor) by the second lab meeting. You will not be allowed to attend lab until the Contract is signed and turned in.

LABORATORY CHECK-IN

This class utilizes a common glassware system in which you will check out the necessary items for each experiment on the day of the lab. It is your responsibility to make sure that all glassware is returned clean and unbroken at the end of the lab period. Students who do not do so will lose lab participation points.

LABORATORY PROCEDURES AND POLICIES

All students are expected to arrive to lab on time and to come to lab prepared to carry out the experiment scheduled for that session. This means that you have studied the experiment for the day, have a basic understanding of its purpose and procedure, the chemistry involved and have prepared your laboratory notebook for the experiment prior to the start of lab. I ask that all students do a conscientious and thorough job of cleaning up after themselves, whether it is in their own work area in the lab, or shared areas such as the chemical supply table and balance room.

LABORATORY SAFETY

Laboratory safety is an everyday assignment. ***Being safe in the lab is a top priority.*** The importance of safety in the laboratory will be reviewed the first day of lab. *Any unsafe behavior, intentional or not, will be noted and may be cause for dismissal from the class.*

For your protection, **safety goggles** with indirect ventilation and an ANSI minimum rating of Z87 **must be worn AT ALL TIMES** in the laboratory. **ONE warning** will be issued to any student that is observed wearing their goggles on their forehead, hanging them around their neck, etc... instead of wearing over their eyes. If the **warning is disregarded, expulsion** from the lab and a zero on the assignment may result.

LABORATORY LECTURE

The beginning of each laboratory session is designated as a laboratory lecture period for which you **must be on time** in order to perform the scheduled experiment. The instructor will use this lecture period to outline important details of the procedure, overview theory and calculations, and to emphasize safety hazards and proper chemical disposal. *If you are more than 10 minutes late for lab lecture, you will not be allowed to do the experiment for that day.*

ATTENDANCE

Attendance is required at all scheduled laboratory sessions. NEVER plan on missing a lab. **You will receive a zero on the first lab you miss and will fail the course on the second, no matter the reason for the absence.** These absences include those in which you arrive too late for lab lecture and are thus not allowed to complete the experiment. Additionally, do not plan on leaving lab early. Labs will regularly take the total amount of time allotted.

CHEMICAL DISPOSAL

As a concern for the environment and to follow county, state and federal law, proper chemical disposal is essential. *Students who do not comply with directed procedures may be expelled from the lab or failed in the course for repeated offenses.* Check with the instructor if you have any questions.

LAB REPORTS

All lab reports must be completed and turned in to receive a passing grade in this class. **Using another student's data or making up data is plagiarism and data falsification and will result in a zero for the assignment and referral to the dean.** In cases where a student was unable to complete a lab, the instructor

may direct you to use another's data in order to complete follow up quests at his discretion. The source of your data must always be cited in lab reports.

LATE ASSIGNMENTS

Due dates for assignments are listed on the class schedule. Late assignments will lose 50% of their value per lab period missed. (**All Labs must still be turned in to receive course credit**).

It is the student's responsibility to know when labs are due based on the provided class schedule. Labs are always due the following lab period after the lab session in which they are completed.

EXCUSED ABSENCE

Every student gets one excused absence. To reflect this, your lowest lab report is dropped at the end of the quarter. **Missing a second lab will result in failing the course.**

Week	Date	Section	Topics	Homework (due date)
1	1/10	1.1-1.4	Syllabus, Classifying Matter and its Changes. Measurements Atomic Theory. Atomic Properties.	Chap 1 (1/17)
	1/12	2.1-2.4	Atomic Theory. Atomic Properties. The Periodic Table.	Chap 2 (1/19)
2	2/17	2.5, 3.1- 3.3	Chemical Compounds; ionic and molecular, monatomic and polyatomic ions, ionic compounds, naming ionic Compounds, naming acids and bases	Chap 3 (1/26)
	1/19	3.4-3.8		Quiz 1(ch 1-3)
3	1/24	4.1-4.4	Percent Composition The mole: Calculations and Conversions. Solutions	Chap 4 (1/31)
	1/26	5.1-5.3	What is a Chemical Reaction? How do we identify them? How do we write them?	
4	1/31	5.4-5.5	Classifying types of chemical reactions.	Chap 5 (2/7)
	2/2	Exam 1		
5	2/7	6.1-6.4	Equations and Moles: Stoichiometry and Conversions	Chap 6(2/16)
	2/9	6.5-6.7, 7.1-7.2	Limiting Reactants and Percent Yield. Solutions. Changes in Energy and Heat. Energy and Atomic structure	Quiz 2(ch 3-5)
6	2/14	7.3-7.7	Modern Atomic Theory. Electron configuration and the Periodic Law. Periodic Trends	Chap 7(2/21)
	2/16	Exam 2		
7	2/21	8.1-8.4	Ionic and Covalent bonds. Lewis Structures Hydrocarbons. Molecular Geometry.	Chap 8(2/28)
	2/23	8.5, 9.1-9.2	Shapes of molecules, intro to gasses	Quiz 3(ch 6-8)
8	2/28	9.2-9.5, 10.1	The Ideal Gas Law. Gasses in Chemical Reactions Intro to Phase Changes.	Chap 9(3/7)
	3/2	10.1-10.3	Phase Changes and Intermolecular forces Intro to Acids and Bases	Chap 10(3/10)
9	3/7	Exam 3		
	3/9	13.1-13.5	Phase Changes and Intermolecular forces Intro to Acids and Bases	Chap 13(3/16)
10	3/14	11.5, 14.1-14.4	Strong & Weak Acids. The pH Scale. Titrations Oxidation Numbers and Balancing Redox Reactions	Chap11 and 14 (3/20)
	3/16			
11	3/21	TBD	Quiz 4 and Review	
	3/23			
12	3/27	Review		
	3/29	FINAL EXAM	TBD	All work due by 3 PM

*Homework: Homework is due on the day listed.

******Important Dates:***

1/22: Last day to add classes or drop with no W on record

3/3: Last day to withdraw with W on record

Tentative Lab Schedule for Chem 10: *Subject to Change*
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Week	Week of	Lab Topic	What's Due	Notes
1	Jan 10	Introduction, Safety, Check in, Scientific Method		
2	Jan 17	Lab 1: Taking Measurements	Safety Contract	
3	Jan 24	Lab 2: Density and Gravity	Lab 1	
4	Feb 31	Lab 3: Atomic Structure and periodic Table	Lab 2	
5	Feb 7	Lab 4: Ionic Compounds	Lab 3	
6	Feb 14	Lab 5: Covalent Compounds	Lab 4	
7	Feb 21	Lab 6: Empirical Formula	Lab 5	
8	Mar 28	Lab 7: Chemical reactions	Lab 6	
9	Mar 7	Molar Volume	Lab 7	
10	Mar 14	Lab 9: Vinegar Analysis	Lab 8	
11	Mar 21	Lab Exam / Check Out	Lab 9	
12	Mar 28	Final's Week. No Lab		No Lab Finals Week

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:

M,W	04:30 PM	05:30 PM	In-Person	SC 1232
T,TH	04:30 PM	05:30 PM	In-Person	SC 1232