

Chemistry 1A General Chemistry

De Anza College Spring 2025 (4/7 – 6/28/2025)

Class times:

Section /CRN	Lecture Room SC1102	Laboratory Room SC2202
CHEM D001A.03 CRN 42664	Tuesday and Thursday 10:30 AM-11:45 AM	Tuesday and Thursday 07:30 AM-10:20 AM
CHEM D001A.04 CRN 42665	Tuesday and Thursday 10:30 AM-11:45 AM	Tuesday and Thursday 02:30 PM-05:20 PM

Instructor:

Dr. Margarete Leclerc, email: leclercmargarete@fhda.edu

Office Hours: Tuesday and Thursday: 01:00-2:30 SC1200. In case you need to speak to me outside office hours, please reach out and we will find time for a Zoom meeting.

Course Description:

This course provides an introduction to the structure and reactivity of matter at the molecular level, as well as an application of critical reasoning to modern chemical theory and structured numerical problem-solving. Students will learn the development of molecular structure from rudimentary quantum mechanics, including an introduction to ionic and covalent bonding; chemical problem solving involving both formula and reaction stoichiometry employing the unit analysis method, and be introduced to thermochemistry and a discussion of the first law of thermodynamics. This is a 5 credit course.

Prerequisites and Hours:

CHEM 25 or CHEM 30A or satisfactory score on the Chemistry Placement Test;
Advisory: EWRT 1A or EWRT 1AH or ESL 5

Hours: Lec Hrs: 36.00; Lab Hrs: 72.00; Out of Class Hrs: 72.00

Course Objectives:

- Examine contributions by investigators of diverse cultures and times to the body of chemical knowledge, with an emphasis on physical and chemical conceptual frameworks.
- Investigate the critical aspects of measurement.
- Explore the historical development of understanding the structure of the atom.
- Assess the development of the Periodic Table of Elements in light of modern atomic theory.
- Differentiate the causes and types of molecular bonding.
- Appraise the effect of quantum mechanics on formulation of molecular structure.
- Employ systematic nomenclature to the identification of molecules.
- Utilize the principles of stoichiometry to analyze compounds, chemical mixtures, and reactions.
- Examine the prominent characteristics of solutions.
- Classify the major types of chemical reactions.
- Apply the essential principles of thermodynamics to chemical systems.

Course Format:

This course is divided into two separate instructional periods, the lecture and laboratory sections. The lecture portion is primarily devoted to the material discussion while the laboratory portion gives a chance for students to practice chemical experimentation. One registration code will enroll for the lecture and lab sections. Lecture and lab sections must be taken together to pass Chem 1A and will both go towards a single grade. Attendance is mandatory.

Required Course Material:

1. **Access to Canvas: Information, assignments and course material will be provided through Canvas.** Turn on Canvas notifications to receive class announcements.
2. Text Book: Modified Mastering Chemistry with eText for Chemistry: A Molecular Approach for DE ANZA COLLEGE **WITH** Modified Mastering Chemistry with eText Student Access. The course eText, study aides, reading assignments and graded online homework are delivered in the “Access Pearson” Tab in Canvas. You must sign up for this online access to Mastering Chemistry through the “Access Pearson” Tab in Canvas. The price for this required course material is about \$45. You can either pay at the Access Pearson App or purchase and access code at the books store (ISBN 9780135402306)
3. Lab Manual: Available on Canvas Module. **You must bring a paper copy of the lab manual to each lab meeting.**
4. **Lab Safety Goggles:** You will need full safety goggles (not safety glasses) that seal on the sides, not just safety glasses. The goggles need to meet the ANSI Z87.1 or Z87+ specification
5. **Lab Notebook:** Permanently bound, about 9”×11” notebook. Make sure it is **not spiral bound** but permanently bound, so no pages can be easily detached. Here are two examples: [Computation Notebook](#) or [Interactive Notetaking Composition Book](#). You can also use a carbonless copy laboratory notebook. Or a composition notebook preferable with 5x5 Sq available [in the bookstore](#).
6. **Scientific Calculator.** Logarithm and exponential functions required. No graphing calculators. Phones will not be allowed for calculations during tests so be sure to bring a calculator every day.
7. **Optional Supplemental Texts:** [OpenStax Chemistry, 2nd edition](#). Available free online at openstax.

Registration details:

Class Registration. This class is a lecture and laboratory-based course, so the registration limit is strictly set at 30 students per section based on the number of people able to safely conduct experiments in the space provided.

If you miss a lab or lecture on the first day of class, you will be dropped from the course unless previous arrangements have been made with the instructor. Regular participation in class is essential for success in class. **Please know that instructors can drop students who miss class in the first two weeks of the quarter.**

Dropping the Course. Students that choose to drop this course are responsible for requesting a withdrawal through the admissions and records department **before** the deadline. Students who drop the class are to be also required to officially check-out of the lab locker.

Course drops, withdrawals, and other deadlines

All registrar deadlines for winter quarter are as follows:

Adding the course	Sunday 4/20/2025
Dropping the course without a W	Sunday 4/20/2025
Dropping the course with a W	Friday 5/30/2025

Resources: Learn about [Student services](#) Academic support and Information about tutoring can be found at the [Math Science and Technology Resource Center](#) .

Academic Integrity: By enrolling in classes at De Anza College, you agree to the academic integrity policy and are held to all standards. Specifics can be found at [Academic Integrity](#) and it is your responsibility to understand what academic dishonesty involves. Cheating during an exam or quiz will not be tolerated and will result in zero for that quiz/exam regardless of what percentage of the work is from cheating and the offending student will be reported to the Dean of Student Affairs. For laboratory work you will have to write your own lab report and show your own data analysis even when the data in lab was collected with a partner.

Disability Service Support: De Anza is committed to providing support for students with disabilities. Please contact me as soon as possible if you require special accommodation and I will be happy to do what I can to help. For more information, visit [Disability Service Support](#)

Missing class: You are responsible for all the material covered in this course, and it is expected that you will attend and participate in all of the lecture and laboratory sessions. **If you miss a lab or lecture on the first day of class, you will be dropped from the course unless previous arrangements have been made with the instructor.** Regular participation in class is essential for success in class. **Please know that instructors can drop students who miss class in the first two weeks of the quarter.**

Grades/Evaluations:

Your grade will be determined through assignments and assessments in lecture and lab. Here are the approximate percentages that each assignment groups contributes to the final grade:

Assignment groups	Approximate Overall %
Homework (lowest scored of 11 will be dropped)	9
In-class assignments and lecture quizzes	9
Lecture Exams	34
Lecture Final (1)	16
Lecture Total	70
Lab assignments (prelabs, lab reports with postlab questions)	24
Lab exams (2)	8
Lab Assignments Total	30
Course total	100

Grade Assignment. Grade cut offs are as follows:

A+ (97.0), A (92.0), A- (89.0), B+ (86.0), B (82.0), B- (79.0), C+ (76.0), C (69.0), D (60.0), F (0-59.9)

I reserve the right to adjust the grade cut off if necessary.

NOTE: You must receive **at least 55.0%** on the combined lab assignments **AND 55.0%** on the combined lecture exams (midterms + final) for a passing grade of C in addition to achieving 70% or higher overall.

If you stop participating in the course after the “W” deadline, I may assign you an “FW” grade. Participation is determined by submitting assignments on a regular basis, so not submitting assignments on a regular basis for more than 2 weeks or not responding to email notifications for more than 2 weeks will be considered non-participation.

Assignments fall into the following categories.

Graded Homework through Mastering Chemistry: You need to sign up for Mastering Chemistry through the Canvas interface. You will have 2 attempts at the homework. However, make sure that you can solve at least 70% homework problems without any assistance from notes, the internet, a friend, etc. If you have difficulty completing the homework questions without assistance, you need to seek support and/or practice more examples. Completing the homework is strongly recommended and represents the minimum practice needed for the topics. You are strongly encouraged to go beyond the assigned problems and try others throughout the textbook or the supplementary texts. The lowest of 11 weekly homework assignments will be dropped. Solving HW and other practice problems is the best way to prepare for exams.

In class assignments and lecture quizzes: A variety of assignments and low stakes quizzes during lecture time or within 18 hours after lecture. The lowest 2 assignments of class assignments will be dropped.

Lecture Exams. There will be three lecture exams to test comprehension throughout the quarter, the dates are indicated in the lecture schedule. Exams will cover material from lectures, homework, and book chapters. If you have difficulties completing the homework without outside help you need to get additional support before you take the exam. There are **no automatic make-up exams** if you miss an exam. Missing a midterm will result in zero credit.

There may be special circumstances that warrant an exam make up. These circumstances require **written proof** of an excused absence such as a police report, an official doctor's note, etc. Only one make-up per quarter may be granted in an accepted excused absence due to a special situation.

Lecture Final. A comprehensive final will cover all material from the course. The time is set by the final schedule for Thursday 6/26/2025 9:15am-11:15am. Please do not sign up for this class if you can't make the final time.

Lab assignments. They consist of Pre-labs, Lab reports which will be a mixture of worksheets and discussion submissions, and 2 lab exams as indicated in the lab schedule. The lab points represent 32% of your final grade.

Class policies, Participation & Attendance & Late Work Policy

Regular lecture participation in class is essential for your success in this course. There are **no make-ups** for missed lecture quizzes or in-class assignments. There are no automatic make-up dates for lecture exams. Please contact me if you have a documented medical or other emergency to address missed exams as soon as possible. You must take the final at the date indicated in the final schedule to pass the class.

Work Expectation: Each week there are two lectures, and 2 x 3 hour lab section. Expect to spend an additional 7 hours a week on the course. Expect to spend this out of class time on reading and lecture assignments as well as prelabs assignments. Completing Homework and lab reports will take up the remaining out of class time.

Lab class is in-person and mandatory for this course. Missing three labs will result in an automatic failing grade in the course. Please review the lab description below carefully and approach me with any questions you may have regarding lab attendance.

Late work is accepted on Mastering Chemistry after the due date until the day of finals 6/26/2025. There is a late submission penalty of 5% each day after the due date, however you can get not less than a 50% reduction. Lab reports are due a week after the lab session. There is a late submission penalty of 5% each day after the due date. Lab reports are accepted up to **1 week late after the due date**. After being 1 week late, I will **not** accept the lab report for credit. Each student can get the late penalty waved or can request a specific extension for one lab report.

A note on disruptive behavior: Professional behavior, conduct, communication (verbal and nonverbal), and language is expected at all times. The college will enforce all policies and procedures set forth in the *Standards of Student Conduct*:

(<https://go.boarddocs.com/ca/fhda/Board.nsf/goto?open&id=9U2UC77B2DA5>Links to an external site.). Any student disrupting the class may be asked to leave that class.

How to be successful in Chemistry:

1. Prepare for lecture by reading and previewing the textbook chapter before attending lecture. This will make the presented material much easier to understand and you will be able to engage in exercises and discussion about the material. Reading assignments and other short Mastering Chemistry assignments before class will allow you to sort the presented information more effectively and therefore will help retain the concepts.

2. Attend lecture. Attending the lecture will clarify material and will also include additional active learning activities that will help you make deep connections with the material. In lecture additional information may be presented that is not in your textbook. Also, Chemistry concepts are build on previous concepts and foundational knowledge. If you miss too many lecture classes, you will increase the likelihood that you may fail the class. 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. Please turn OFF your cell phone when you enter the class or lab. You may NOT take calls or texts during either. I expect you to step outside if for emergencies.

3. Review the lecture material and complete post lecture assignments promptly to review the material. By engaging with the material through problem solving, you actively learn the material! There is not enough time to go over every possible example, so re-reading the textbook in connection with problem solving is essential to master the concepts. Don't wait until the midterm exam is approaching: Review the material promptly such as within 1 day of the lecture!

4. Complete the HW as your self-assessment, treat is as a quiz/exam question. The homework should inform you if you have mastered the concepts of the chapter and uncover gaps you need to work on closing. Ultimately, you will need to be able to solve the questions without assistance from your notes, the textbooks, friends, the internet etc. to score high on the exams.

5. Don't fall behind. Make sure to set aside time to complete your assignments weekly by the due date. Cramming before exams without studying the material during the weeks leading up to an exam does not usually work. Also, in chemistry, each new topic will build on the previous, so it is essential to understand the topics as they are presented (hence do the practice problems). Following a lecture when you do not understand the previous material is not an effective method for learning and will lead to further problems. To avoid falling behind...

6. Get help. If you are having a difficult time with a topic, it is your responsibility to get help promptly. There are plenty of resources for aiding in material comprehension, but it all starts with you making an effort to get this help. You are encouraged to find a study group, working with peers is extremely helpful for mastering material. The [Student Success Center](#) will continue providing tutoring services online and in-person for this Spring quarter 2025. **Come to office hours** to get any follow-up questions answered.

LABORATORY PROCEDURES AND POLICIES:

Lab class is twice a week in-person and mandatory for this course. Please refer to the lab schedule below.

You will need to prepare for each of the 11 labs by reading the entire experiment manual available on the De Anza chemistry website and get a printout. After you read and understand the experiment you will complete a prelab for most of the experiments that you then submit to Canvas before your lab time.

Make sure you come to lab on time. Missing the initial discussion and demonstration may prevent you from performing the experiment on that day safely and will count as missing lab that day. Missing lab will result in a zero for that lab session assignment. Missing three (3) lab sections or not completing lab reports for 2 experiments will result in an automatic failing grade in the course. Be aware that you need to get 55% of lab points in order to achieve an overall passing grade in addition to achieving 70% or higher overall.

You may not wear or use headphones, ear buds, etc during lab. I will ask students who do not comply with this policy or with any safety policy covered to leave the lab.

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.

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. I 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 15 minutes late for lab lecture, you may not be allowed to do the experiment for that day and you will receive zero points of all the assignments of the lab session.

ATTENDANCE/PARTICIPATION

Your participation is required at all scheduled laboratory sessions. No participation will result in zero points for the related assignments. You demonstrate your participation by:

Being on time: If you are more than 15 minutes late for lab lecture, you will not be allowed to do the experiment for that day and you will receive zero points of all the assignments of the lab session.

Be prepared: Failure to bring your paper copy of the lab manual or being unaware of the goals or learning objectives of the lab indicates your lack of preparedness. Prelab assignments will help you to be prepared. Come to lab with attire according to safety standards such as clothing covering you from the shoulders to your ankles completely and **closed toe shoes**.

Complete the lab activities in the allotted time: Labs will regularly take the total amount of time allotted. Do not plan on leaving lab early. Complete the hands on and written parts of each lab during lab time. Lab reports are due a week after the lab session. There is a late submission penalty of 5% each day after the due date. Lab reports are accepted up to 1 week late after the due date. After being 1 week late, I will not accept the lab report for credit. Each student can get the late penalty waved once or can request a specific extension. The lowest score lab report will be dropped.

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 Assignments

A safety assignment you will need to pass with 100%

There will be a total of 11 lab-based exercises this quarter that will loosely correspond to the topics we are covering in lecture. Depending on the lab, the assignments will slightly vary. All assignments will be assigned on Canvas and detailed instructions will be given at the beginning of the course.

6 Full Labs: Hydrate, Precipitation, Conductivity, Acid/Base Titration, Calorimetry, Redox Titration. For these six labs, you will read the procedure, complete a prelab, attend the lab introduction at the beginning of the lab period, perform the procedure, answer the follow-up questions/calculations, and write a conclusion.

3 Half Labs: Measurements, Types of Reactions, Line Spectra. For these three labs, you will read the procedure, complete a prelab, attend the lab introduction at the beginning of the lab period, perform the procedure and complete a worksheet.

2 Hands-on Lessons: Nomenclature and Molecular Modeling: No prelab is needed for these but attending the lesson during the lab period and completing the associated worksheet is required.

2 lab exams: The lab exams will test your understanding of the theories utilized in lab sections this quarter as well as the calculations implemented to yield meaningful data. These exams will be during your in-person lab time indicated on the schedule. You may use any notes in your lab notebook **you** have taken this quarter during this test.

Tentative Schedule:

Here is the approximate timing for the material we will cover. This is subject to change; see Canvas for updates. All dates except for final are subject to potential change throughout the quarter.

WEEK OF	WEEK	Approximate Lecture Chapters	TUESDAY LAB	THURSDAY LAB
4/6/2025	1	Chapter 1	CHECK-IN, SAFETY	MEASUREMENT
4/13/2025	2	Chapter 2	NOMEMCLATURE	HYDRATE (1)
4/20/2025	3	Chapter 3	HYDRATE (2)	TYPES OF REACTIONS (1)
4/27/2025	4	Chapter 4 Exam 1 (1-3)(Tu)	TYPES OF REACTIONS (2)	PRECIPITATION (1)
5/4/2025	5	Chapter 5	PRECIPITATION (2)	PRECIPITATION (3)
5/11/2025	6	Chapter 7	Lab exam 1 CONDUCTIVITY (1) (VERNIER)	CONDUCTIVITY (2) (VERNIER)
5/18/2025	7	Chapter 8 Exam 2 (4,5,7)(Tu)	ACID-BASE TITRATION (1)	ACID-BASE TITRATION (2)
5/25/2025	8	Chapter 8,9	CALORIMETRY (1) (VERNIER)	CALORIMETRY (2) (VERNIER)
6/1/2025	9	Chapter 9,10	REDOX TITRATION (1)	REDOX TITRATION (2)
6/8/2025	10	Chapter 10 Exam 3 (8-10) (Tu)	LINE SPECTRA	MOLECULAR MODEL
6/15/2025	11	Chapter 11	Lab exam 2 CHECK-OUT	JUNETEENTH no class
6/22/2025	12	FINAL Th (all)		

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:

SC1200 T,TH 1:00 PM - 2:20 PM