

## De Anza College Chem25 Prep for General Chemistry Winter 2024

Meeting	Time	Days	Location
Lecture	05:30 pm - 7:20 pm	Monday/ Wednesday	MLC103
Lab	7:30AM - 10:20 PM	Wednesdays	SC2208
Office Hours	7:30 PM – 8:30 PM	Mondays	After lecture

Instructor	Valeria Martinovic, PhD	Email: martinovicvaleria@fhda.edu
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\* Schedule at: <https://calendly.com/martinovicvaleria/30min>

### Introduction

This course is an introduction to the core theories and problem-solving techniques of chemistry as preparation for general chemistry and other science-related fields. Topics discussed include modern theories and laws of chemistry, chemical reactions, gases, and thermochemistry, all with emphasis on reasoning and problem solving skills. We will also discuss chemistry topics from a cultural, historical, and societal perspective. The laboratory program teaches laboratory safety, general procedures, methods of chemical analysis, the maintenance of your laboratory notebook and writing laboratory reports.

This course is a preparatory course for entry into the General Chemistry sequence, which is the primary course sequence that is a major preparation requirement in the discipline of Chemistry at all CSUs and UCs. This course meets general education requirements for De Anza GE (Area B), CSU GE (Area B), and IGETC (Area 5).

**Pre-requisite:** MATH 114 or MATH 130 or equivalent.

### Required Online Resources

- i The [Chem25 Canvas Website](#) has your Chem25 course information, study aides, homework assignments, quizzes, and current grades.
  - ✓ Class information is subject to change, and it is your responsibility to keep up to date with the most recent information.
    - *I recommend you set Notification Preferences in Canvas to alert you (via email) when changes are made to the Canvas website, for example for new assignments and as your current grades are assigned, so that you do not miss any information.*
  - ✓ The course eBook, study aides, online homework are delivered in the “ALEKS” Tab in Canvas. First two week access code to ALEKS:  
**Financial Aid Access Code is: 66A68-9F47B-C4A20-3A82E**
    - The eBook is Bauer, Birk, and Marks. "Introduction to Chemistry", 5th Ed.
  - ✓ You must complete the Module “ACS Safety Training” and post your certification of completion on Canvas before you can participate in the lab program for Chem25.

### Required Materials

- Lab Manual available from the Bookstore
  - ✓ Subramaniam: Preparation For General Chemistry Lab Manual ISBN: 9781307817706
  - ✓ This is a custom lab manual that can only be purchased at the De Anza Bookstore
- A scientific calculator with scientific functions must be brought to each class meeting.
  - ✓ Calculators on cell phones are not allowed during exams or quizzes.
- Safety goggles / safety glasses to protect your eyes.
  - ✓ Uvex Stealth Goggles: available from the Bookstore or Amazon.
- A hard bound laboratory notebook (spiral bound notebooks are not allowed) is required for recording laboratory operations (what you did), observations, and data collected in lab.
  - ✓ A good one from the Bookstore: COMP BK 80SH 10x8 FLEX CM BLCK Roaring Spring

### Course Policies for Chem25

- ï Email. All announcements from Canvas are emailed to your email address registered with FHDA.
- ï Participation in all lectures and lab meetings is required.
  - ✓ In person lectures and lab meetings start promptly on time!
  - ✓ Arrive with plenty of time to be ready to start the day's lecture quiz and participate.
- ï You are responsible for material presented in all Lectures.
  - ✓ In person lectures are given on Fridays
    - Lecture slides are posted as handouts on Canvas
  - ✓ Recorded Lectures are posted on Canvas.
    - You can view the recordings at your convenience.
- ï There are no make-up assignments.
  - ✓ Students are responsible for ALL work, handouts, and material missed during an absence.
  - ✓ A missed class meeting will earn zero points for all activities and assignments in the missed meeting.
- ï Any student with two or more absences from class meetings or who fails to turn in two or more assignments by due dates may be dropped from the course.

### Grade for this Course

All grades will be assigned according to the following percentage scale:

A+ ≥ 98% A ≥ 92% A- ≥ 89% B+ ≥ 85% B ≥ 82% B- ≥ 79% C+ ≥ 75% C ≥ 68% D ≥ 64% D- ≥ 58% F < 58

Your % Score earned will be assigned according to weighted grade categories in the table:

Category	Grade %
Participation	5
Homework	25
Lab Reports	25
Exams	45

### Participation

Participation is actively engaging in activities and assignments in Chem25. Participation points are deducted for:

- ï Absence
  - ✓ Absence will also result in a zero for work done during the class meeting.
  - ✓ Exceptions due to documented health or personal situations may be granted by the instructor.
    - Please contact your instructor before the meeting if you must miss a class meeting.
- ï Late arrival (up to 10 minutes late, 30% penalty for each late arrival)
  - ✓ Any student who arrives more than 10 minutes late to any class meeting will be counted absent.
    - In addition, the student will not be permitted to perform the scheduled experiment or remain in the lab due to safety and operational concerns.
- ï Texting, answering phone calls, visiting social media websites, any online activity not related to Chem25.
- ï Lack of preparation for Labs as shown by:
  - ✓ Failure to bring you copy of the lab manual.
  - ✓ Failure to bring your lab notebook to lab meetings.
  - ✓ Being unaware of goals or learning objectives of the labs.
  - ✓ Not starting work immediately after lab lecture.
- ï Submit all assignments on time (by due date) to show your active participation.

### Quizzes

- ï Quizzes about topics covered the week before are given in class on Friday at 8:30 AM.
- ï The time allowed for quizzes is 10. Minutes.

### Homework

- ï “ALEKS” is an online homework and learning management platform from McGraw-Hill.
- ï Homework is found under the “ALEKS” menu on **Canvas**.
  - ✓ Homework questions focus on topics covered in lecture.
  - ✓ Access to the eBook, resources, and hints is allowed.

## Lab Program

Lab time is used to perform experiments and engage in collaborative workshops (group work).

- ï Experiments and workshops demonstrate and apply chemical concepts taught in Chem25.
- ï Experiments in Chem25 are fun learning opportunities!

### General Lab Requirements and Rules

- ï Before each lab: Read the Lab Instructions and do the Prelab
- ï Safety precautions will be discussed, and experimental techniques will be demonstrated during the Lab Lecture at the beginning of lab.
- ï If you miss the Lab Lecture, you will not be allowed to participate in that lab.
- ï A bound laboratory notebook with copy pages is required for recording laboratory operations (what you did), observations, and data.
- ï You must bring your own copy of the Lab Manual to each lab.
  - ✓ Subramaniam: Preparation For General Chemistry Lab Manual ISBN: 9781307817706
  - ✓ This is a custom lab manual that can only be purchased at the De Anza

### Bookstore [Lab Notebooks](#)

You must understand and follow “Guidelines for Lab Notebook.pdf” posted on Canvas

- ï Digital (scanned) copies of your lab notebook pages must be included with each lab report
- ï Notebook pages are graded with your lab report.
- ï Follow the document “Guidelines for Lab Notebooks” found on Canvas to get full credit for your lab notebook.

### Lab Safety Policy

- ï You must complete the Module “ACS Safety Training” and post your certification of completion on Canvas before you can participate in the lab program for Chem25.
- ï After one warning, failure to follow safety policies presented in ACS Safety Training or discussed in class will result in being dismissed from lab that day.

### Lab Report

- ï Instructions for lab reports are given on each Lab Report assignment page found on Canvas.
- ï Unless otherwise stated, Lab Reports are submitted as pdf files on the course site on Canvas.
- ï Any modifications to requirements for lab reports or changes to experimental procedures will be discussed during the Lab Lecture.
  - ✓ *Be sure to take notes!*

### Lab Report Policy

- i Lab reports are based on measurements, observations, and results from study of the properties of matter and chemical reactions.
- i For most experiments, you will be sharing data and observations with a partner; however, you must describe what you do in lab and record observations in your own words.
- i You also must enter data into your notebook as it is collected, do your own calculations; answer questions and state your conclusions in your own words.

### Exams

- i The average of your 3 exams counts as 40% of your course grade.
- i The dates of three exams are listed on the class schedule.
  - ✓ **NO** make-up exams will be given.
- i Complete policies for exams are given on the Canvas Page for each exam.
- i Exams are given in two concurrent parts in two different formats.
  - ✓ Questions in Part 1 includes questions with multiple choice answers.
  - ✓ Questions in Part 2 includes problems requiring calculations (show your work with unit conversions and correct significant figures) and short essay questions that requires you to explain your answers in grammatically correct sentences using appropriate chemical terms and concepts.

### Chem25 Course Objectives

- i Explore the core concepts of modern atomic and molecular theory.
- i Assess the importance of the mole concept in stoichiometric calculations.
- i Apply fundamental mathematical concepts to the proper collection and evaluation of experimental data.
- i Explore the various gas laws and understand the relationships between pressure, temperature, and volume of a gas.
- i Differentiate between standard classes of chemical reactions.
- i Acquire an elementary understanding of thermochemistry
- i Explore the discipline of chemistry from a cultural, historical, and societal perspective.

### Academic Integrity Policy

Common forms of academic dishonesty are plagiarism, fabrication, and cheating. When you submit answers as an individual (lab reports, quizzes, exams) it must be your own, original work. Any student found pursuing any form of academic dishonesty will be subjected to disciplinary action according to the guidelines described in the College Catalog. Any cheating or plagiarism will result in a zero grade and report to the Office of Student Affairs for disciplinary action.

### 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.

Week of	Lectures -Mondays/Wednesdays	Lab - Wednesdays
(1) Jan 8	Ch. 1/2	<b>ATTENDANCE MANDATORY</b> - Laboratory Drawer Check-In
(2) Jan 15	<b>NO LECTURE Martin Luther King Day</b>	Lab 1: Measurements, Uncertainty and Significant Figures
(3) Jan 22	Ch.2/3	Lab 2: Density and Gravity
(4) Jan 29	Ch. 4	<b>LECTURE EXAM 1</b> Lab 3: Atomic Structure & Periodic Table
(5) Feb 05	Ch.4/5	Lab 4: Ionic Compounds
(6) Feb 12	Ch.5/6	Lab 5: Empirical Formulas
(7) Feb 19	<b>NO LECTURE - Presidents' Day</b>	Lab 6: Chemical Reactions
(8) Feb 26	Ch.6	<b>LECTURE EXAM 2</b> Lab 7: Molar Volume
(9) Mar 04	Ch.7/8	Lab 8: Covalent Compounds
(10) Mar 11	Ch.8	Lab 9: Vinegar Analysis
(11) Mar 18	Ch.9	<b>LAB FINAL CHECK OUT</b>
(12) Mar 25	<b>FINAL EXAM Monday 6:15 - 8:15 pm</b>	

**I** mportant Dates:

JANUARY 8 - First day of winter quarter

JANUARY 15 - Martin Luther King Jr. Holiday - no classes, offices closed

JANUARY 20 - Last day to add classes

JANUARY 21 - Last day to drop classes without a W

FEBRUARY 16-19 - Presidents' Holiday - no classes, offices closed

MARCH 1 - Last day to drop classes with a W

MARCH 25-29 - Final exams

**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	07:30 PM	08:30 PM	Zoom, In-Person, By Appointment	MLC103
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