

## Chem 25 - Course Syllabus (Spring 2024) Preparation Course for General Chemistry

### Course and Contact Information:

Instructor: Semere Bairu, Ph.D.

Email: [bairusemere@fhda.edu](mailto:bairusemere@fhda.edu)

### Class Days/time/office hours (all in-person):

Lecture: MW 5:30 pm – 7:20 pm in DA-G7 and Lab (section 62): W 7:30 pm – 10:20 pm in DA-SC2208

Office Hours: M 11:30 am – 1:00 pm in faculty office room SC1206

This class is divided into two separate instructional periods: a lecture period devoted to the primary course material; and a lab period for conducting lab experiments. One registration code automatically enrolls you in all two periods. Everyone will have the same lecture and lab period but at different times. Lecture meets twice a week, while labs meet once a week. One grade is assigned for lecture and lab combined, so the lecture and lab cannot be taken separately under any circumstances.

### Course Description

Chem 25 is an introduction to 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 to prepare students to tackle these topics more in depth in following classes.

**Prerequisites:** Math 114 or equivalent.

### Textbook & Materials:

**1. Text:** Introduction to Chemistry, 6th edition by Bauer, Birk, and Marks (McGraw-Hill). *eBook will be available for you after registering for ALEKS Chemistry (via canvas; see registration announcements).*

**2. Lab Manual:** Preparation for General Chemistry: Chem 25, by Applegate, Neely and Sakuta (McGraw-Hill). 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.

1. A scientific calculator with log and exponential functions. No graphing calculators.
2. Safety Goggles, needs to meet the ANSI Z87.1 or Z87+ specification, which will generally be listed in the product description.

*This course requires the use of the **Canvas platform** for the completion of some of the course assignments. You can access Canvas either through your MyPortal account or directly at <https://deanza.instructure.com>.*

*All the exams will be conducted on Canvas during our class period. You need to bring your laptop to class to take the exam.*

### Registration, Attendance, and Conduct Policy:

**Registration:** Due to safety concerns, enrollment in each section is strictly limited to 30 students per section. Class spaces are filled in accordance with the official class roster from Admission and Records, followed by

the official waitlist. Any errors with registration or status must be addressed directly to Admission and Records. Please note that if you are placed in a section from the waitlist, you will not be assigned a laboratory locker or be allowed to perform experiments until you are officially enrolled in the class.

**Attendance:** Attendance is expected during all lectures, all lab lectures, and all laboratory periods. Students are expected to be prompt and to leave only when lecture or lab is concluded. Arriving late to lecture is disruptive to the class and strongly discouraged. If you miss lecture, laboratory lecture, or a laboratory period for any reason within the first two days of class, you will be dropped from the course.

**Dropping the Course:** If you choose to drop the course at any point during the quarter, it is your responsibility to withdraw from the course through Admissions and Records by the appropriate deadline (see important drop dates on last page). You are required to officially check out of your lab locker whether you remain in the course or drop the course. Failure to check out of lab by the scheduled check-out date will result in an administrative fee and a block will be placed on your future registration.

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

### **Course Assessment** (*Lecture Exams and Final Exam*)

Two lecture exams (100 points each) will be given. Scheduled dates for the exams are attached to help you plan accordingly. The final exam (200 points) will be 2 hours long; it is a comprehensive multiple-choice exam. This course builds on itself so material covered on a previous lecture exam is needed in a following exam. There will be no make-ups for lecture exams. Should you miss an exam because of illness or equally compelling reasons, you should email me of the fact as soon as possible, and hopefully before the exam is given. You will need to provide me with written evidence (doctors' note, police report, etc.) for your excuse. If I accept your excuse, I will use the score on your final exam (questions pertaining to the particular exam) as your exam score. An unexplained or unsatisfactory excuse for missing a lab or exam will result in a grade of zero. Please note that all the exams will be proctored in the classroom during lecture period. You will take the exams on your laptop via Canvas.

### **In-Class Exam Dates**

**Exam 1:** Wednesday, May 8<sup>th</sup>

**Exam 2:** Wednesday, June 12<sup>th</sup>

**Final Exam:** Monday, June 24<sup>th</sup> from 6:15 pm – 8:15 pm (lecture hall).

**Lecture Quizzes:** One in-class quiz will be given during the beginning of class via-canvas or ALEKS Chemistry (quiz questions cover previous lecture materials, bring your laptop). No make-ups for missed quizzes. The quizzes will be posted on your Chem 25 Canvas account, and you will need to finish them in-class. More information will be given in lecture meetings before the due dates.

**Lecture Homework's:** One homework will be given for each chapter covered via-canvas or ALEKS Chemistry. No make-ups for missed homework's. The homework's will be posted on your Chem 25 Canvas account, and you will need to finish them as early as possible once the chapter is over. More information will be given in lecture meetings before the due dates.

**Laboratory:** The total lab grade constitutes 35% of the final course grade. Do not miss labs!! No makeup labs will be allowed unless it is a dry lab (for excused absentees only)! We will conduct 9 experiments and will turn in 9 Lab Reports (25% of your grade) and there will be a Lab Final (10% of your grade) on the last day of lab. The format for each lab report will be discussed in the lab. LABORATORY REPORTS generally include the signed pre-lab,

recording of data, and the completed laboratory report sheets. Each lab report will be worth 15 points and is due at the start of lab lecture on the day it is due. Late lab reports will not be accepted!

**Pre-Labs:** Before beginning a new experiment, you are required to complete the pre-lab questions for that experiment. The pre-lab questions are in the laboratory manual and should be answered directly on there (not on a different piece of paper).

**Lab Final:** There is one cumulative laboratory exam for this course (closed book; no notes permitted). The lab exam is worth 100 points. The laboratory exam will be given during your regularly assigned laboratory session. The date for the lab exam will be on **June 23**. No early, late or make-up lab exams will be given, and all lab exam scores will count toward your overall course grade (10% of your grade).

**Important:** Lab reports should be in your own words. Copying data, calculations, phrases or paragraphs from another student or the web is considered plagiarism. Lab reports are generally due the next lab period after the wet chemistry is completed. The due date is every Wednesday at 5:00 pm.

### Grade Computation

Your course grade will be determined according to the following:

Two in-class lecture exams	30%
Comprehensive in-class final exam	15%
Homework's	15%
In-Class Quizzes	5%
Laboratory	35%

At the end of the semester, you will receive a single grade for the course. The following grade scale is for the full course, including lab.

above 97.0 %	<b>A+</b>	76.9 - 72.0 %	<b>C+</b>
96.9 - 92.0 %	<b>A</b>	71.9 - 65.0 %	<b>C</b>
91.9 - 89.0 %	<b>A-</b>	64.9 - 61.0 %	<b>D+</b>
88.9 - 85.0 %	<b>B+</b>	60.9 - 57.0 %	<b>D</b>
84.9 - 80.0 %	<b>B</b>	56.9 - 54.0 %	<b>D-</b>
79.9 - 77.0 %	<b>B-</b>	Below 54.0%	<b>F</b>

Dr. Bairu reserves the right to change or modify the grade scale at any point during the spring quarter. You must receive a passing lab grade in order to pass this course.

**Tentative Lab and Lecture Schedule for Chem 25: *Subject to Change*****Spring 2024 De Anza College**

Week	Week of	Lab (W only) Topic	Lecture Topic (MW)
1	April 7	Introduction, Safety, & Check in	Periodic Table & Measurements
2	April 14	Lab 1: Taking Measurements	Atomic Theory & Properties
3	April 21	Lab 2: Density and Gravity	Compounds and Naming
4	April 28	Lab 3: Atomic Structure and periodic Table	Mole & Empirical Formula
5	May 5	Lab 4: Ionic Compounds	<b>Exam I (May 8<sup>th</sup>)</b> Chemical Reactions
6	May 12	Lab 5: Empirical Formula	Stoichiometry & Limiting Reagents
7	May 19	Lab 6: Chemical reactions	Concentration & Titration
8	May 26	Lab 7: Molar volume	Lewis Structures
9	June 2	Lab 8: Covalent Compounds	<b>Exam II (June 12<sup>th</sup>)</b> Idea Gas Law & IMF
10	June 9	Lab 9: Vinegar Analysis	Acid, Bases & pH
11	June 16	JUNETEENTH	Review
12	June 23	Lab Exam / Check Out	<b>Cumulative Final Exam (June 24<sup>th</sup>)</b>

**Important Drop Dates**

*April 21(Sunday) - Deadline to drop this class with a refund and without grade.*

*May 31 (Friday) - Deadline to drop this class with a grade W.*

**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:**

W	11:30 AM	12:30 PM	In-Person	In-Person
M	12:45 PM	01:45 PM	Zoom	