

# Chemistry 25: Prep for General Chemistry

## Synchronous Zoom Hours:

<b>Lecture:</b>	M/W	2:30 PM – 4:20 PM	Canvas/ConferZoom
<b>Lab-03</b>	T	2:30 PM – 4:20 PM	“
<b>Lab-04</b>	Th	2:30 PM – 4:20 PM	“

**Instructor:** Dr. Sol Puenzo      **E-mail:** parajonpuenzosol@fhda.edu  
**Office Hours:** M: 1:30 - 2:30 pm and by appointment for personal questions      **Office:** ConferZoom

## **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, at your fingertips, answers to common questions that might arise. This document is available at all times on the class website. Make sure you 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 the 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 the following classes.

**Prerequisites:** MATH 114A or equivalent

## **Course Materials (Required):**

1. **Text Book:** *Introduction the Chemistry, 5e*, by Bauer, Birk, Marks (McGraw Hill: 2019; ISBN 978-1-307-23515-9). Directions for obtaining the electronic version of this book are found in the Getting Started module. ISBN: 9781307601633 (\$30). You can also try to find a used version of the book on Amazon or any used book retailer.
2. **Lab Textbook:** Not required.
3. **Chem101** Subscription (\$19.95) This is an on-line homework system that we will be utilizing for the course. Directions for logging into and purchasing a subscription are found in the Getting Started module.
4. A **scientific calculator** that has at least log and exponential functions is required (~ \$25). Graphing calculators are fine also, but not required.
5. Household material for Lab activities posted in Canvas

## Resources

**Tutoring:** This and many other campus services can be found as part of the student success center and their are in zoom: <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/>

## Grading

**Grading:** This class is not graded on a curve. Grade cut offs are as follows:

**A+ (98), A (92), A- (89), B+ (85), B (82), B- (79), C+ (75), C (68), D+ (64), D (60), D- (56), F (56-0)**

**Dr. Puenzo reserves the right to change exam and quiz dates as well as modify the grade scale at any point during the quarter.**

<u>Grading Scheme:</u>	<u>Percentage</u>
<b><u>Lecture portion</u></b>	
*Homework & in-class activities	20
*Online Discussions	10
<b><u>Lab portion</u></b>	
*Pre-Lab Work	10
*Laboratory Work	10
*Post-Lab Activity	10
<b><u>Evaluation portion</u></b>	
Midterm Exams (2)	20
Final Exam	10
Lab Exam	10
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<b>Total</b>	<b>100%</b>

\*Lowest score dropped and 24h automatic extension for 50% of the points

**Homework (20%):** Homework will consist of problems around per assignment and will be posted on the Canvas/CHEM 101. Homework will be graded based on completeness and accuracy, every homework will require you show your work in a pdf in Canvas. Copying another student's homework problems is counterproductive. If you're not working it out, you won't get the benefit. **Plagiarism of homework assignments will result in a score of Zero** being assigned to all involved students. Feel free to work in groups, but be sure to show all your own work and not just copy answers. Your lowest homework assignment and in-class activity (one of each) will be dropped from your grade at the end of the quarter.

**Online discussion (10%):** active participation in discussion, preparedness for the lecture and laboratory material to discuss, adherence to the respectful rules. These are NOT free points and must be earned. Your lowest discussion assignment will be dropped from your grade at the end of the quarter.

**Laboratory Work (30%):** You will be expected to be prepare for Lab, participate in lab, complete lab reports, and pass lab activities/quizzes. More details on these items can be found on the laboratory section.

**Midterm Exams (20%):** There will be 2 chapter exams worth 10% of your grade each. Exams will be a combination of any of the following: multiple choice, short synthesis or mechanisms, and vocabulary questions. Show your work will be requiere for any math question. 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 (10%):** The Final Exam is cumulative and may have the same format as the chapter exams or be an oral exam. The exam will be given **Thursday, June 22<sup>th</sup> from 1:45 PM – 3:45 PM**. If you cannot make this time, you should not enroll in this class.

Exams: **The instructor reserves the right to require alternative and/or additional forms and/or locations of assessments.** Webcam and open mic are mandatory for lecture quizzes/midterms/and Final. **The instructor reserves the right to disregard a grade of student taking test without a webcam or open mic.**

**Special Note:** If your average percentage is failing (<55%) in any **ONE** or more of the following portions of the course, you will not receive a passing grade:  
**exams or lab reports/assignments.**

Additionally, you must complete **all** of the lab experiments/reports in order to pass the class.

## Lab Section

**Pre-Lab Activity (10%):** Pre-lab assignments should be completed in your notebook prior to your arrival in class and turned in at the beginning of the lab period. Any changes to the procedure will be announced in advance. Your lowest pre-lab will be dropped from your grade at the end of the quarter.

**Laboratory Assignments/Reports (10%):** **Lab reports in this course will be a mixture of Worksheets and Discussion submissions.** Laboratory reports are due on the weekend after the completion of the lab, with the exception of the final lab, as specified in the class schedule. Please see the Lab Report guide for tips on this as well. *For some experiments you may be collecting and sharing data with a partner, however you must do your own calculations and formulate your own conclusions for each experiment.* **If students are found to have copied from one another, points will be deducted from the grade or a grade of zero will be given for ALL students involved!** Your lowest lab report will be dropped from your grade at the end of the quarter.

**Post-Lab Quizzes (10%):** Post-lab activities will open on Fridays and due on Sunday of the week when the lab activity was completed. Your lowest post-lab will be dropped from your grade at the end of the quarter.

**Lab Exam (10%):** There will be one lab exam in this course. It is **open lab notebook/Canvas** and will cover material and calculations related to your lab experiments. This includes the purpose of each experiment, safety and waste guidelines, the procedure, proper data recording, calculations and theoretical questions related to the technique or purpose of the lab.

**Note on Extension:** **All the activities in Lecture and lab portion, with the exception of in-class activities, have an automatic extension of 24 h. The total points that you can collect during this extension is 50% of the original amount.** It is the student's responsibility to know when the activities are due based on the provided class schedule.

## Class Policies.

- A. Time Requirement:** This class includes appx. 4 hours of lecture and appx. 3 hours of lab per week (between Sync and Async). 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 show up on time and plan on staying the entire session as late arrivals and early departures distract everyone. I would always prefer you show up a little late as opposed to skipping the class entirely. Please do not disrupt class with irrelevant conversations, either in the form of inappropriate comments or private conversations.
- D. Please silence your cell phone during our zoom meetings.** You may **NOT** take calls during either, except for emergencies and please silence your zoom.
- E. 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: <http://www.deanza.edu/studenthandbook/academic-integrity.html>
- F. Extra Credit:** Extra credit assignments are offering in class, but not 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 extra activities.
- G. 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, usually an F.
- H. Questions/Help:** I am available to answer questions during office hours, by Canvas, 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 resource.

### **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:**

### **LABORATORY**

During this quarter, the lab experience will be develop on computer and hand-ons activities that will require for you to obtain certain material. The list of material is publish in Canvas and it is your responsibility to have those items on time. Contact me for special situations.

### **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 have to compensate for the loosen knowledge.*

### **ATTENDANCE**

Attendance is required at all scheduled laboratory sessions. NEVER plan on missing a lab. *You will receive a zero on the second lab you miss and will fail the course on the third.* These absences include those in which you arrive too late for lab lecture and are thus not allowed to complete the experiment. I may allow for emergencies and other complications in life.

### **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 they discretion. The source of your data must always be cited in lab reports.

## Tips for Success

- **Come to class having read the assigned chapter, some videos and short explanations are in Canvas modules**, and be ready with questions about the concepts you didn't understand.
- In case you didn't read the first one, **really**, come to class with the assigned chapter already read. I cannot stress how big a difference this will make for you.
- **Take notes during class and reread your notes before the next class.** If something is still unclear, write down your question so you can ask about it during the next class or in office hours or via email.
- **Work every day.** The longer the time that passes between doing chemistry problems, the more knowledge you have to rebuild. Do some homework problems and some problems from the book every day as this will help you understand where you need help, and it will help prepare you for the exams. Schedule some time each day to work on chemistry. Treat this subject like a foreign language. Use it or lose it.
- **Do the suggested chapter problems in the book**, particularly for concepts you're having trouble with.
- **Don't try to memorize EVERYTHING.** This is a common trap that many students fall into. While there are certain topics that must be committed to memory, strive to develop an intuitive understanding of the underlying framework of the material. Once you have that you will often be able to derive answers from a much smaller pool of "memorized" data.
- **Join a study group**, exchange phone numbers/emails of classmates whom you can call or meet by internet for help. In the group, take time to present concepts to one another. The BEST way to solidify a topic in your mind is to have to teach it to someone else.
- **Don't wait** until the night before to finish that lab report or homework assignment. You'll get more out of it (and do better) if you give yourself the time to understand the concepts and ask questions when you get stuck.
- Start studying for the exams **at least a week before.** Cramming for an exam is like playing Russian Roulette! Cramming is superficial knowledge only, and when you are nervous, superficial knowledge is very unreliable.
- Work through old quizzes and homework problems before exams.
- **Give yourself TIME!** Plan on spending at least 2 hours studying outside of class for each hour we spend together in class or lab lecture. Do this every week, not just the week before the exam. Start early and it will be much easier later.
- If you consider yourself a poor test-taker, then you should complete and turn in all of the labs on time in order to pass the class. Also, utilize any practice exams or chapter reviews as they contain the same types of questions which you will encounter on the exams.
- **Stay well rested and healthy.** This is always a challenge in college specially in this quarantine, but do not neglect your basic needs. Poor sleep and diet have been shown to have a temporary negative impact on I.Q. Schedule study breaks as needed to keep up your mental health as well. Sometimes a night off is the right answer. Just don't make blowing off your studying a habit.
- As you listen, take notes, read, or work problems, try to keep an open mind, be curious, and think about the implications of the concepts and problems. Chemistry makes the world around us work and understanding why the world works will impress your friends at parties and help you grasp the material. The more connections you can make between the material in the book and the world around you, the more sense this class will make.

**Tentative Lecture Schedule for Chem 25: *Subject to Change***  
**Winter 2020 De Anza College**

**Dr. Puenzo**

Week	Date	Section	Topics
1	01/4	1.1-1.4	Classifying Matter and its Changes. Measurements
	1/6	2.1-2.2	Atomic Theory. Atomic Properties.
2	1/11	2.3-2.5	The Periodic Table.
	1/13	3.1-3.3	Ionic Compounds. Naming ionic Compounds
3	1/18	<b>Holiday</b>	
	1/20	3.4-3.7	Naming Acids and Bases. Percent Composition
4	1/25	4.1-4.4	The mole: Calculations and Conversions. Solutions
	1/27	Review - <b>Exam 1</b>	<b>Chapter 1, 2, 3</b>
5	2/1	5.1-5.3	What is a Chemical Reaction? How do we identify them? How do we write them?
	2/3	5.4-5.5	Classifying types of chemical reactions.
6	2/8	6.1-6.3	Equations and Moles: Stoichiometry and Conversions
	2/10	6.4-6.5	Limiting Reactants and Percent Yield. Solutions.
7	2/15	<b>Holiday</b>	
	2/17	6.6-6.7, 7.1-7.2	Changes in Energy and Heat. Energy and Atomic structure
8	2/22	7.3 7.4-7.7	Modern Atomic Theory. Electron configuration and the Periodic Law. Periodic Trends
	2/24	Review - <b>Exam 2</b>	<b>Ch 4, 5, 6</b>
9	3/1	8.1-8.3	Ionic and Covalent bonds. Lewis Structures.
	3/3	8.4-8.5, 9.1-9.2	Hydrocarbons. Molecular Geometry. Intro to Gasses.
10	3/8	9.2-9.5, 10.1	The Ideal Gas Law. Gasses in Chemical Reactions Intro to Phase Changes.
	3/10	10.1-10.3, 13.1-13.2	Phase Changes and Intermolecular forces Intro to Acids and Bases.
11	3/15	13.2-13.5, 11.5	Strong & Weak Acids. The pH Scale. Titrations
	3/17	14.1-2, 14.4 <b>Review</b>	Oxidation Numbers and Balancing Redox Reactions
11	3/25	<b>FINAL EXAM</b>	<b>7:00 AM-9:00 AM</b> Cumulative

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

**January 17**

**February 26**

**Last day to Drop classes for Winter quarter**

**Last day to drop classes with a "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.