Chemistry 10: Introduction to Chemistry S25

LECTURE:	TR	8:30 am - 10:20 am	SC1102
LAB:	Sec 23 T	11:30 am - 2:20 am	SC2204
	Sec 24 R	11:30 am - 2:20 am	SC2204

I**nstructor: Dr. Valeria Martinovic** email: martinovicvaleria@fhda.edu

Office Hours: W: 10:30 am - 11:30 am in SC 1102

This course syllabus is a contract:

One purpose of this syllabus is to provide you with the guiding principles on which the class operates. Another purpose is to ensure that you have easy access to answers for common questions that may arise. This document is always available on the class website. Please read it thoroughly before asking me any questions about the course schedule, requirements, grading, etc. It also serves as a contract between you, the student, and me, the instructor of record. Make sure you fully understand its contents, especially the sections related to testing and the computation of your grade, because as long as you remain enrolled in the course, you are implicitly agreeing to comply with these terms.

Course Description: This course introduces the discipline of chemistry, covering essential laboratory techniques and methods alongside a survey of key chemical principles. It emphasizes chemistry as a fundamental area of scientific inquiry, aimed at fostering a general appreciation for chemistry as a science and enhancing overall scientific literacy. We will explore central themes in chemistry and examine how an understanding of the subject can shape our perspectives on historical and current events.

Prerequisites: Advisory: English Writing 211 and Reading 211 (or Language Arts 211), or English as a Second Language 272 and 273; Mathematics 212 or equivalent.

Course Materials (Required):

Lecture

1. Course material in PDF posted in Canvas

2. Catalyst: The Pearson custom library for chemistry.
John W. Hill, Terry W. McCreary, Doris K. Kolb "Chemistry for Changing Times", Fourth Custom Edition for De Anza College, Chem 10 or Hill, John W. and Kolb, Doris K. Chemistry for Changing Times. 15 th Edition. New York, NY. Macmillan,

3. **Supplemental Text:** *Chemistry-Atoms Firs*t. This **free** text is available at https://openstax.org/details/books/chemistry-atoms-first-2e

Lab

List of labs posted in Canvas

Course Materials (Optional):

Students must bring **OSHA-approved laboratory goggles** to the first laboratory meeting. Other types will not be permitted.

Latex or Nitrile gloves and goggles are available from the bookstore.

Regular Scientific math calculator.

Resources

Tutoring: De Anza's tutorial center is in L47. This and many other campus services can be found as part of the student success center: http://www.deanza.edu/studentsuccess

Disability Support Program and Services: DSPS can help you get the right tools to succeed.

Their website is http://www.deanza.edu/dsps/

Homework: You will be assigned about 10-20 problems for each assignment. Homework will be graded on completeness and accuracy. As we learn by doing, "practice makes perfect," and since exam questions may resemble the homework, it is clearly to your advantage to take the homework seriously. Copying another student's homework problems is counterproductive. If you're not working through the problems, you won't receive the full benefit.

Quizzes: A quiz will be administered at the beginning of each Thursday lecture period, except on exam days. Quizzes will be handed out at the start of class, and you will have 5 minutes to complete them. Students arriving after the quiz period will NOT have the opportunity to make up the quiz.

Laboratory Work: You will be expected to participate in the lab, complete lab worksheets and reports, and pass lab exams. The laboratory section provides more details on these items.

Exams: A couple of exams will be 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: The Final Exam is cumulative and will have the same format as the chapter exams. The exam will be given on June 24 from 6:15 pm – 8:15 pm

If you cannot make your assigned time, you should not enroll in this class.

Subjective Grade: Your instructor will evaluate your performance subjectively at the end of the quarter based on: your punctual and regular attendance; active participation; preparedness for lectures and laboratory sessions; ability to follow both written and verbal instructions; adherence to safety rules; cleanliness practices; and overall respect for the laboratory by properly caring for and using all laboratory equipment and instruments. These points are not given for free and must be earned.

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, homework, or lab reports/assignments.

In particular, failure to complete the homework usually results in a failing grade in the course.

Class Policies.

Time Requirement: This class includes approximately 4 hours of lecture and approximately 3 hours of lab each week. To receive a "C" or higher grade, you should allocate 8 to 12 hours for studying, reading, and preparation outside of class each week. Ensure you do your best by making time to keep up with the reading and homework. If this time commitment is not feasible given your current situation, please consider enrolling in this class at a later date when you have more time available.

Lecture Attendance: Attendance is a vital part of the learning process, and the lecture will cover material that may not be included in your textbook while also helping to clarify the material that is included. Learning Chemistry successfully relies on establishing a solid base of knowledge. If you do not create a strong foundation, you will struggle to build your understanding of the field effectively. In other words, if you miss too many classes, you'll likely not pass the class.

Class Behavior: Be ready to start class at the scheduled time. Please arrive on time and plan to stay for 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 as possible. Please refrain from disrupting class with irrelevant conversations, whether through inappropriate comments or private discussions. I would always prefer you arrive a little late rather than skip the class entirely.

Please turn off your cell phone when entering the class or lab. You may not take calls or texts during either, except in emergencies. Students who violate this rule may lose points or face expulsion from the class or lab.

Academic Dishonesty: Cheating or plagiarizing another student's work, in whole or in part, will result in a zero for the assignment, a

referral to the dean, and my immense displeasure. Any attempt to gain an unfair advantage over other students or to pass off another's work as your own is considered cheating. Please see me if you have any questions. You implicitly agree to abide by the Honor Code as a condition of your enrollment in this class: https://www.deanza.edu/policies/academic_integrity.html

Grading: This class is not graded on a curve. The grades are preset in Canvas Gradebook.

A+ (100), A (94), A- (90), B+ (87), B (84), B- (80), C+ (77), C (74),!

D+ (67), D (64), D- (61), F (60-0)

Grading Scheme:

Homework	10%
Exams/Quizzes	50%
Lab Reports	20%
Final Exam	10%
Participation	10%

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 grades while not allowing others that same opportunity. Some extra credit problems may appear at the end of exams and homework.

Dropping the Class: If you wish to drop the class after the first two weeks, it is your responsibility to do so. If you fail to drop the class, you will be assigned a grade in accordance with your submitted work.

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

Attendance Note

You are responsible for all the material covered in this course, and you are expected to attend and participate in all lecture and laboratory sessions. If you must be absent, it is in your best interest to contact your instructor as soon as possible 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

**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 the 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 standard glassware system, allowing you to check out the necessary items for each experiment on the lab day. You are responsible for ensuring that all glassware is returned clean and unbroken at the end of the lab period. Failure to do so may result in your student account being charged. You are still responsible for any accrued charges if you drop this course. Any person who has not settled their account balance by the end of the last scheduled lab period for the quarter will have an administrative fee added to their student account and a hold put on their registration.

LABORATORY PROCEDURES AND POLICIES

All students are expected to arrive at the lab on time and come prepared to conduct the experiment scheduled for that session. This means that you should study the experiment for the day, have a basic understanding of its purpose and procedure, the chemistry involved, and prepare your laboratory notebook for the experiment before the start of lab. I ask that all students take care to thoroughly clean up after themselves, whether in their own work area in the lab or in shared spaces 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 to perform the scheduled experiment. The instructor will use this lecture period to outline important details of the procedure, overview theory, and calculations, and emphasize safety hazards and proper chemical disposal. If you are more than 10 minutes late for lab lecture, you will not be allowed to 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 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 lectures and are thus not allowed to complete the experiment. Additionally, do not plan on leaving the lab early. Labs will regularly take the total amount of time allotted.

CHEMICAL DISPOSAL

Proper chemical disposal is essential to protect the environment and follow county, state, and federal law. Students who do not comply with directed procedures may be expelled from the lab or fail 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 cannot complete a lab, the instructor may direct you to use another’s data 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).

According to the provided class schedule, students are responsible for knowing when labs are due. Labs are always due during the next lab period following the 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.

The following mandatory minimum safety requirements must be followed by all students and be rigorously enforced by all Chemistry faculty at De Anza College:

From the American Chemical Society Safety In Academic Laboratories Guidelines, 7th Ed.

Safety goggles approved by the Chemistry Department, purchased from the De Anza College bookstore (NOT safety glasses), must be worn at all times once laboratory work begins. This includes obtaining equipment from the stockroom or taking equipment from student drawers. Goggles may not be removed until all laboratory work has concluded and all glassware has been returned to the student drawers.

Shoes that enclose entirely the foot are to be worn at all times; NO sandals, open-toed or open-topped shoes, or slippers, even with socks on, are to be worn in the lab.

Shorts, cut-offs, skirts or pants exposing skin above the ankle, and sleeveless tops may not be worn in the lab: ankle-length clothing must be worn at all times.

Hair reaching the top of the shoulders must be tied back securely

Loose clothing must be constrained

Wearing "...jewelry such as rings, bracelets, and wristwatches in the laboratory..." should be discouraged to prevent "...chemical seepage in between the jewelry and skin...".

Eating, drinking, or applying cosmetics in the laboratory is forbidden at ALL times, including during lab lecture

Use of electronic devices requiring headphones in the laboratory is prohibited at ALL times, including during lab lecture

Students are advised to inform their instructor about any pre-existing medical conditions, such as pregnancy, epilepsy, or diabetes, that they have that might affect their performance.

Students are required to know the locations of the eyewash stations, emergency shower, and all exits

Students may not be in the lab without an instructor being present

Students not enrolled in the laboratory class may not be in the lab at any time after the first lab period of each quarter.

Except for soapy or clear rinse water from washing glassware, NO CHEMICALS MAY BE POURED INTO THE SINKS; all remaining chemicals from an experiment must be poured into the waste bottle provided.

Students are required to follow the De Anza College Code of Conduct at all times while in lab: “horseplay”, yelling, offensive language, or any behavior that could startle or frighten another student is not allowed during lab;

Strongly recommended: Wear Nitrile gloves while performing lab work; wear a chemically resistant lab coat or lab apron; wear shoes made of leather or polymeric leather substitute.

Rules for Safe and Efficient Chemistry Laboratory Operation Safety Rules:

Prepare for each experiment by reading all of the directions before lab starts.

Locate the Safety Equipment. Know the locations of the eye wash, safety shower, fire extinguishers, fire blankets, first aid kit, fume hoods, telephone and all exits that are to be used in an emergency. Your laboratory instructor will describe the use of the safety equipment.

Protect your eyes. Wear approved eye protection at all times. Your laboratory instructor will inform you which of these you must have. Goggles provide maximum safety. Prescription glasses, if you need them, must be worn under approved eye protection. Contact lenses should not be worn in the laboratory because fumes may accumulate under the lenses and injure your eyes and the lenses make it difficult to flush chemicals from your eyes.

Tie long hair back. This precaution will keep your hair out of burner flames and harmful chemicals.

Do not wear clothing with loose, flowing sleeves. This precaution will keep your sleeves out of burner flames and harmful chemicals.

Wear shoes that cover all of your feet. Broken glass on the laboratory floor and spilled chemical reagents are all too common. Shoes that cover your feet completely will protect them from broken glass and chemical splashes. The best types of shoes are closed-toe made out of leather.

Wear clothes that cover your torso and your legs to the knees. Clothing will give your body needed protection. Good clothing can be protected with a lab apron or coat.

Do not eat or drink in the laboratory.

Do not taste any chemical reagent.

Do not smell chemical reagents directly. When you are instructed to smell a chemical, do so by gently wafting the vapors toward your face. Do not inhale deeply.

Do not pipette solutions by mouth. Use a rubber suction bulb to fill the pipette.

Do not work with flammable liquids near a flame.

Do not engage in games or horseplay in the laboratory. Never run in the laboratory.

Do not attempt unauthorized experiments in the laboratory.

Do not work in the laboratory in the absence of your instructor or his or her authorized representative.

Use a fume hood when required.

Handle glass tubing and thermometers carefully. When inserting glass tubing or thermometers through a rubber stopper, always hold the glass close to the stopper and use a lubricant such as glycerin to help the glass slide through the stopper. Do not continue to try to force glass through a stubborn stopper, get a new stopper and/or get help. When inserting a pipette into a pipette bulb, hold the pipette near the bulb and GENTLY insert the pipette.

When diluting, never pour water into concentrated reagents. Always pour the reagent into the water.

If you spill a chemical reagent on yourself, immediately flood the exposed area with water and then summon the laboratory instructor. Inform the instructor immediately about any other accidents or spills.

Be aware of your neighbors. Are they obeying the safety rules? A neighbor's accident may injure you.

Avoid touching your face and rubbing your eyes while in the laboratory. If you must do so, first wash your hands.

Wash your hands before leaving the laboratory.

Never heat a closed container. Pressure build up can cause the container to explode.

Assume any chemical is hazardous if you are unsure.

Do not violate any other safety rule issued by your laboratory instructor.

Housekeeping Rules:

Clean up broken glass immediately with a broom and dustpan. Do not use your hands. Dispose of broken glass in the special container that is provided, never in a regular trash can.

Chemical spills must be cleaned up immediately. Immediately notify your instructor who will advise you how to clean it up and/or assist you. Dispose of the collected contaminated chemical properly as instructed.

Do not pour any chemical down into the sink or in the trash without authorization. Clearly labeled disposal bottles will be provided when needed.

Take containers to the stock of chemical reagents. Do not bring stock chemicals to your laboratory bench.

Read the label on a reagent bottle carefully. Is it the correct chemical? Is it the correct concentration?

Do not insert your own pipette, medicine dropper or spatula into a stock bottle.

Use special care with stoppers or tops of stock bottles. Do not allow them to pick up contamination. Your instructor will provide additional instructions for handling the stoppers or tops found in your laboratory.

Always replace the stopper or top of a stock bottle when you are finished taking some of the reagent. Make sure that you put the stopper or top back onto the correct bottle.

When pouring liquid from bottles, hold the bottle with the label against the palm of your hand so that the liquid is poured from the side opposite the label. If any liquid runs down the outside of the label, immediately wipe off the liquid.

Do not take any more of a reagent than is required. Many of the chemicals used in the laboratory, including deionized water, are costly.

Never return any unused reagent to a stock bottle. If you take too much of a chemical, dispose of it as directed by your instructor or offer it to a classmate who needs it.

Set up your glassware and apparatus away from the edge of your laboratory bench.

Thoroughly clean the area around your laboratory bench and the top of your laboratory bench before leaving lab.

Keep shared areas of the laboratory clean. This includes areas such as the balance room and where the stock bottles are stored. It is especially important to keep the balances clean and free of chemical spills.

Keep your laboratory equipment clean. Good results depend on clean equipment.

If a piece of equipment containing mercury is broken, inform your laboratory instructor immediately. Keep the area blocked off to avoid scattering the mercury.

Follow any other housekeeping rules given by your laboratory instructor.

Lab Schedule:

Safe lab practices are of utmost importance. Please read the section in your laboratory on safety issues carefully. The following rules are applicable while in the lab:

- You may not be in the laboratory unless an instructor is present
- Sealed safety goggles must be worn at all times
- Eating and drinking are strictly prohibited inside the lab
- Open-toed shoes and shorts are not permitted in the lab; protective ankle length clothing is required
- Dispose of waste material and broken glassware as per instructions from your Instructor

The following is a schedule of experiments to be conducted this quarter. Before beginning a specific lab, you must complete the pre-lab exercise and thoroughly read the lab manual.

Pre-lab Assignment: Before attending lab, you must complete a numbered outline of the procedure for the experiment to be conducted that day. Additionally, you need to fill out a blank data table to record the data during the laboratory session. Failure to complete the pre-lab assignment will result in a deduction of at least 5 points. Furthermore, the instructor may prevent you from continuing in lab on that day.

Lab report: Complete the data analysis and answer the post-lab questions in your report sheet.

Date Tuesday	Lecture 23 & 24 Laboratory 23	Date Thursday	Lecture 23 & 24 Laboratory 24
4/8	Intro to Course and Lab Lecture: Basic Definitions, Measurements 23 Lab: Check-in	4/10	Lecture: Ch 1 cont. Ch2. Atoms, Atomic Structure and Periodic Table 24 Lab: Check-in
4/15	Lecture: Ch 2 cont. 23 Lab 1: Taking Measurements Lab Safety Statement DUE	4/17	Lecture: Ch3 : Chemical Bonds 24 Lab 1: Taking Measurements
4/22	Lecture: Ch 3 cont. 23 Lab 2: Percent Water in Popcorn	4/24	Lecture: Ch. 4 Molecular Electronic and Geometric Structure 24 Lab 2: Percent Water in Popcorn
4/29	Lecture: Ch 4 23 Lab 3: Electron Dot Structures	5/1	Exam 1: Chaps 1-4 24 Lab 3: Electron Dot Structure
5/6	Lecture: Ch 5: Chemical Accounting Ch 6: Gases, Liquids, Solids . . . Intermolecular forces 23 Lab 4: Molecular Shapes	5/8	Ch 6: Gases, Liquids, Solids . . . Intermolecular forces 24 Lab 4: Molecular Shapes
5/13	Lecture: Ch 7: Acids and Bases Ch 8: Oxidation and Reduction 23 Lab 5: Solutions	5/15	Ch 8: Oxidation and Reduction 24 Lab 5: Solutions
5/20	Lecture: Exam 2: Chaps 5-8 23 Lab 6: Upset Stomach	5/22	Lecture: Ch 9: Organic Chemistry 24 Lab 6: Upset Stomach
5/27	Lecture: Ch 9 cont. 23 Lab 7: How Much Fat	5/29	Lecture: Ch 11: Nuclear Chemistry 24 Lab 7: How Much Fat
6/3	Lecture: Ch 11 cont. Ch 16: Biochemistry 23 Lab 8: Organic Molecules	6/5	Lecture: Ch 16 cont. 24 Lab 8: Organic Molecules
6/10	Lecture: Review of Exam 3 23 Lab 9: DNA Capture	6/12	EXAM 3: Chaps 9, 11, 16 24 Lab 9: DNA Capture
6/17	Lecture: Final Review Chaps. 1-9, 11, 16 Lab Check-Out	6/19	Lecture: Final Review Chaps. 1-9, 11, 16
6/24	Final Exam: Chaps 1-9, 11, 16		

Student Learning Outcome(s):

• Develop problem solving techniques by applying the "Scientific Method" to chemical data.
• Analyze and solve chemical questions utilizing information presented in the periodic table of the elements.
• Evaluate current scientific theories and observations utilizing a scientific mindset and an understanding of matter and the changes it undergoes.

Office Hours:

Chemistry office space	T,TH	10:30 AM - 11:30 AM
S46	T,TH	5:30 PM - 6:00 PM