

Chemistry 10: Introduction to Chemistry W20

LECTURE: MW 5:30PM - 7:20PM S-32
LAB: M 7:30PM - 10:20PM SC2208

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Office Hours: W: 7:20-7:50 PM in S-32

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: An introduction to the discipline of chemistry, including chemical laboratory techniques and methods and a survey of important chemical principles. The course emphasizes chemistry as a subject of scientific inquiry and is designed to give the student a gen

eral appreciation for chemistry as a science as well as a degree of general scientific literacy. We will be examining some of the central themes of chemistry as well as how an understanding of chemistry can impact our view of 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

Catalyst The Pearson custom library for chemistry.

ISBN: 9781256615583. 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. 13th Edition. New York, NY. Macmillan, 2013.

Lab

Laboratory Manual.

John Suchocki, Donna Gibson "Conceptual Chemistry" lab manual, 5th Edition, Prentice Hall.(2011) or ISBN: 0-321-68171-1

Course Materials (Optional):

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

Latex or Nitrile gloves and goggles 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: Homework will consist of about 10-20 assigned problems per assignment. Homework will be graded based on completeness and accuracy. As we learn by doing, "practice makes perfect" and as exam questions may be similar to the homework, it is obviously to your advantage to take the homework seriously. Copying another student's homework problems is counterproductive. If you're not working it out, you won't get the benefit.

Quizzes: There will be a quiz given at the beginning of each Wednesday lecture period, with the exception of exam days. Quizzes will be distributed at the beginning of class and you will be given 5 minutes to complete them. Students arriving after the quiz period will NOT have an opportunity to make up the quiz.

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

Exams: There will be couple of exams worth 10% of your grade each. Exams will be a combination of

Grading Scheme:	Points
Homework	10 pt each
In Class Quizzes	10 pt each
Lab Reports	10 pt each
Exams	100 points each
Final Exam	100 points
Subjective Lab and Lecture	20 points

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 Monday, March 23 from 6:15 pm – 8:15 pm

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

Subjective Grade: A subjective evaluation will be assessed by your instructor at the end of the quarter to reward you for: your good and punctual attendance; active participation, preparedness for the lecture and laboratory, ability to follow written and verbal instructions, adherence to the safety rules, cleanliness practices, and overall respect for the laboratory through the proper care and use of all laboratory apparatus and instruments. These are NOT free points 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 appx. 4 hours of lecture and appx. 3 hours of lab per week. 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.

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.

Class Behavior: 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. If you are unavoidably late, please enter quietly and find your seat as quickly and quietly. Please do not disrupt class with irrelevant conversations, either in the form of inappropriate comments or private conversations. I would always prefer you show up a little late as opposed to skipping the class entirely.

Please turn your cell phone OFF when you enter the class or lab. You may NOT take calls or texts during either, except for emergencies. Students caught abusing this rule may be docked points or expelled from class or lab.

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: 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)

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

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.

Questions/Help: I am available to answer questions during office hours, by email, 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 resources.

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:

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 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 common glassware system in which you will check out the necessary items for each experiment on the day of the lab. It is your responsibility to make sure 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 for it. If you drop this course, you are still responsible for any accrued charges. 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 to lab on time and to come to lab prepared to carry out the experiment scheduled for that session. This means that you have studied the experiment for the day, have a basic understanding of its purpose and procedure, the chemistry involved and have prepared your laboratory notebook for the experiment prior to the start of lab. I ask that all students do a conscientious and thorough job of cleaning up after themselves, whether it is in their own work area in the lab, or shared areas 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 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 not be allowed to do the 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 will 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 lecture and are thus not allowed to complete the experiment. Additionally, do not plan on leaving lab early. Labs will regularly take the total amount of time allotted.

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 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 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).

It is the student's responsibility to know when labs are due based on the provided class schedule. Labs are always due the following lab period after the lab session in which they are completed.LAB POLICIES (CONTINUED):

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.

Chemistry Department-approved safety goggles purchased from the De Anza College bookstore (NOT safety glasses) must be worn at all times once laboratory work begins, including when obtaining equipment from the stockroom or removing equipment from student drawers, and may not be removed until all laboratory work has ended and all glassware has been returned to student drawers.

Shoes that completely enclose 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 that will be performed this quarter. Prior to

Date	Topic	Page Number
01/06	Introduction and Check-in	
01/13	Taking measurements	11
01/20	MLK Day - No Lab	
01/27	Electron Dot Structures (No Prep)	61
02/03	Molecular Shapes (No Prep)	67
02/10	Solutions	75
02/17	Presidents Holiday - No Lab	
02/24	How Much Fat	91
03/02	Organic Molecules (No prep)	135
03/09	DNA Capture	145
03/16	LAB FINAL/CHECK OUT	
03/23	FINALS	

start of a particular lab, you must complete the pre-lab exercise and must have read the lab manual completely.

Pre-lab Assignment: Prior to coming to lab, you must complete a numbered outline of the procedure for the experiment that will be performed on the particular day. You must also enter a blank data table for the data to be obtained in the laboratory. Failure to

complete the pre-lab assignment will result in a loss of a minimum of 5- points.
 Additionally, the instructor may disallow you from continuing in lab on that day.

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

TENTATIVE LECTURE AND EXAMINATION SCHEDULE

Homework problems

Chapter 1 –Chemistry	Pr.1, 5, 9, 13, 17, 21, 25, 29, 33, 37, 41, 45, 49, 53, 57, 61, 65, 69, 73, 77, 81, 85	01/06/20
Chapter 2 –Atoms	Pr. #1- 51-odd	01/06-01/08
Chapter 3 – Atomic Structure	Pr. 1, 2, 4-19, 21, 23-31 all	01/13-01/15
Last day to add		01/18
Last day to drop for a refund		01/19
MLK Holiday - No Lecture		1/20
Chapter 4 – Chemical Bonds	Pr. 2-46 even	1/22-01/27
MIDTERM #1 CHAPTERS 1- 4		01/29
Chapter 5 – Chemical Accounting	Pr. 1-59 -odd	02/03-02/05
Chapter 7 – Acids and bases	Pr. 1-59-odd	02/10-02/12
Presidents Holiday - No Lecture		02/17
Chapter 8 – Oxidation and reduction	Pr. 1-49 odd	02/19-02/24
Last day to drop with a "W"		02/28
MIDTERM #2 CHAPTERS 5-9		02/26
Chapter 9 – Organic Chemistry	Pr. 1-57 odd	03/02-03/04

Chapter 10 – Polymers

Pr. 2-38 even

03/09-03/11

Chapter 11 – Nuclear Chemistry

Pr. 1-57 odd

03/16-03/18

FINAL EXAMINATION -- CHAPTERS 1-11
Room: S32

03/23 @6:15PM-8:15PM

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.