

Preparation Course for General Chemistry (Chem. 25.61,62)

Syllabus-Summer 2018-DeAnza College

Lecture (61,62): MTWR 5:30 PM – 7:20 PM -- Room S32

Lab (61): MTWR 2:30-3:45 PM -- Room SC2208

Lab (62): MTWR 4:00-5:15 PM – Room SC 2208

Instructor: Dr. James Maxwell, Mobile phone: (773) 454-7779 (texts also), email: maxwelljames@fhda.edu (Best)

Office Hours: TBA

Description: An Introduction to core theory and problem solving techniques of chemistry as preparation for Chemistry 1A at DeAnza College. The course will include an overview of many of the most important topics in general chemistry, including stoichiometry, atomic and molecular structure, solutions, scientific measurement, the periodic table, and chemical reactions. The course material will be approached from both a conceptual and mathematical standpoint.

Evaluation: Your grade will be based on your performance in the following:

9 Labs (20 pts. each) Reports due 1 week after lab	180
Lab Clean-Up	20
Lab Final	100
10 Best Quizzes	100
3 Exams (100 pts. each)	300
<u>1 Final (200 pts)</u>	<u>200</u>
Total	900 points

Letter grades will be assigned according to the *approximate* scale:

A	90%
B	80%
C	70%
D	50%
F	< 50%

Attendance: **If you do not attend class on the first day of the quarter you may be dropped from enrollment to allow someone on the waitlist to enroll.** Your attendance is urged for all lectures and required for all quizzes, exams and labs. Unexcused exam, quiz and lab absences score 0. It is the responsibility of the student to contact the professor regarding missed work. If an absence is anticipated, the student should make arrangements to complete the missed assignments prior to the absence. In an emergency, it is the student's responsibility to contact the instructor within one class period of an exam. *There are no laboratory make-up days.* Please sign the attendance sheet each class. Please contact our instructor as soon as possible if you anticipate an absence or you have missed a class, lab, quiz, or exam.

Homework: Homework will not be collected or graded. It is for your edification and you are strongly encouraged to work as many of the problems as possible.

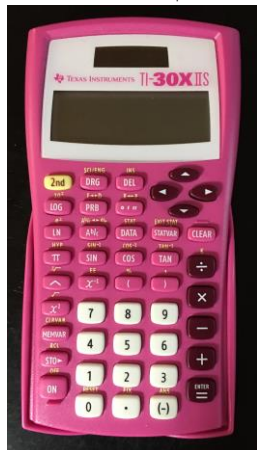
Exams: There will be three exams (100 pts each) and one comprehensive final exam (200 pts) . There will also be a Lab Final exam (100 pts). You will be graded on your all three exams and the final. You must bring your own calculator (if you need one), pencil and eraser for exams. You are permitted to bring a molecular model kit, the instructor must approve if it is assembled in any way. Cell phones may not be used at any time during the exam. Calculators may be used if approved by instructor. Once the exam begins you may not leave the room unless you turn in the exam, so plan to take a bathroom break *before* class. **No Cell Phones during Exam! Answer Keys will be available after the exam.**

Text: **Introduction to Chemistry**, Richard C. Bauer, James P. Birk, and Pamela S. Marks. 4th ed, 2014, McGraw-Hill. You may use another edition if you have it, but you are responsible for know the differences and what material may be omitted for your copy of the text. For textbook bargain prices check out textbooksrus.com, half.com or Amazon marketplace for used books. You can rent your text at www.coursesmart.com

Lab Text: **Laboratory Manual for Preparation for General Chemistry (Create version for DeAnza)**, 2017, Applegate, Neely, and Sakuta.

Labs: All 9 labs count towards your grade. No make-up labs. Late labs will incur a penalty. You **MUST** wear approved eye protection during lab!

Calculator: A scientific calculator, not our smart phone, will be necessary to complete quizzes and exams. You can purchase them for about \$20. Here is an example:



Gas Laws Lab: Use FireFox browser for this site:
http://highered.mheducation.com/sites/0073511250/student_view0/gas_laws_online_lab.html

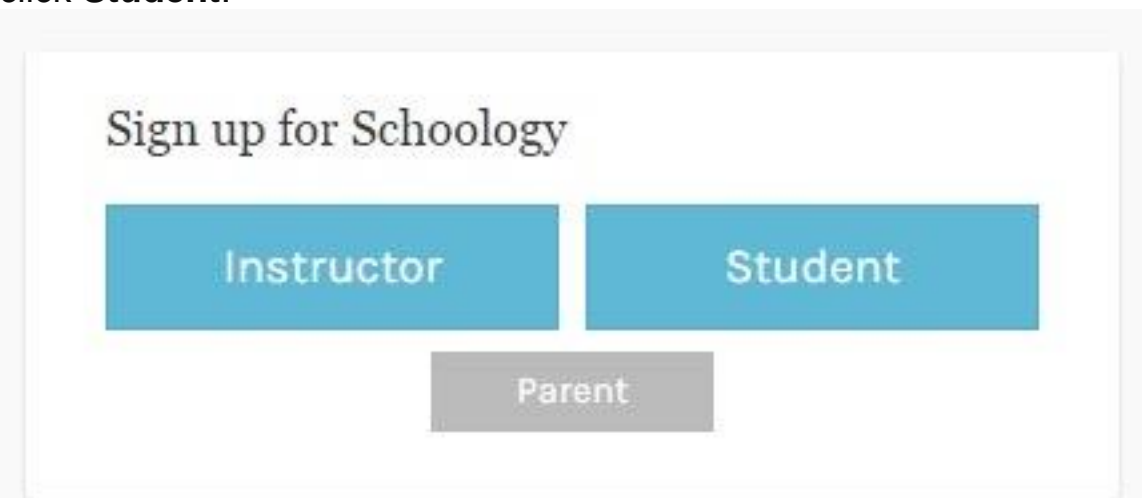
Academic Dishonesty: "Academic dishonesty is a serious offense, which includes but is not limited to the following: cheating, complicity, fabrication and falsification, forgery, and plagiarism. Cheating involves copying another student's paper, exam, quiz or use of technology devices to exchange information during class time and/or testing. It also involves the unauthorized use of notes, calculators, and other devices or study aids. In addition, it also includes the unauthorized collaboration on academic work of any sort. Complicity, on the other hand, involves the attempt to assist another student to commit an act of academic dishonesty. Fabrication and falsification, respectively, involve the invention or alteration of any information (data, results, sources, identity, and so forth) in academic work. Another example of academic dishonesty is forgery, which involves the duplication of a signature in order to represent it as authentic. Lastly, plagiarism involves the failure to acknowledge sources (of ideas, facts, charges, illustrations and so forth) properly in academic work, thus falsely representing another's ideas as one's own."

Word Processing: If you are looking for a **free** word processor compatible with WORD, checkout www.openoffice.org .

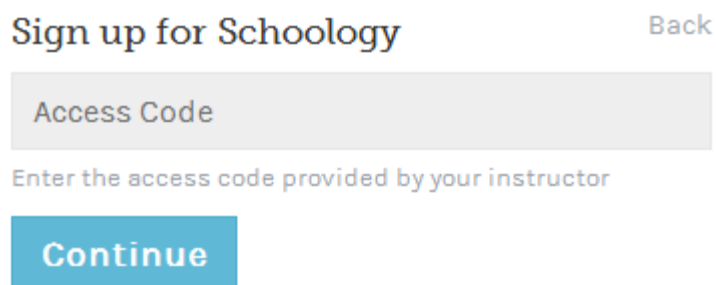
Help: If you need help with any aspect of this course, please contact your instructor first. You can also contact the Student Success Center at <http://www.deanza.edu/studentsuccess/> to get help with tutoring or with reading, and writing, tutoring or academic skills. Please use this resource.

Schoology: We will be using **Schoology.com** to communicate during this course. You will find PowerPoint presentations, the Syllabus, exam keys, quiz keys, and other important information here. Please sign up using the instructions below. Please let me know if you have any problems.

Following these instructions using the access code given to sign-up for Schoology for Chem 25.61,62, Instructor Maxwell. Go to <https://app.schoology.com/register.php> and click **Student**.



1 Enter your Access Code. This is a 10-digit code in **M6CHT-QXPXF**

A screenshot of the Schoology registration form. The title is "Sign up for Schoology" with a "Back" link. Below the title is a text input field labeled "Access Code". Below the field is the instruction "Enter the access code provided by your instructor". At the bottom is a blue "Continue" button.

- 1
- 2 Fill out the form with your information.
- 3 Click **Register** to complete.

When you use a course access code to create an account, you are automatically enrolled in the course. To join additional courses in Schoology, click on the **Join** link in the **Courses** dropdown menu at the top of the page.

Eye Protection: You must wear full goggles and not safety glasses. Without them, you may not participate in lab and will receive a grade of zero for that lab. See illustration below. They are available ONLY at the DeAnza bookstore.



DeAnza Tutoring: On campus you can meet with tutors and attend workshops in the Student Success Center, <http://www.deanza.edu/studentuccess/>, or you can use the free online tutoring available to all DeAnza students. For more tutoring information go to <http://www.deanza.edu/studentuccess/onlinetutoring/>. Unfortunately, chemistry tutors are in short supply. I would recommend making a study group with your classmates.

Lab Reports: Use the report form in your lab text. NEATNESS counts. Neatly remove the reports using the perforation provided. The Pre-laboratory Assignment must be completed before lab and receive a **stamp** from your instructor. The remainder of the report is due at the end of part 2 after the experiment is complete. Lateness will be penalized. The report must be neat and in ink. No white-out or obliteration of mistakes. A simple strike through will be proper. Please record your name and section number. Staple the report together.

Chem 25:61,62 Summer 2018

Lecture (Black); Lab (Blue); Quizzes, Exams & Deadlines (Red); Holidays (Green)

Monday	Tuesday	Wednesday	Thursday
2 July Lecture: Ch1: Matter and Energy Lab: Check-In Quiz/Exam:	3 July Lecture: Ch1: cont. Ch2: Atoms, Ions and the Periodic Table Lab1 pt1: Measurements, Significant Figures, Calculations (p21) Quiz: Math Review	4 July Holiday 	5 July Lecture: Ch2: cont. Ch3: Chemical Compounds Lab1 pt2: Measurements, Significant Figures, Calculations (p21) Quiz 1: Ch1
9 July Lecture: Ch3: cont. Ch4: Chemical Composition Lab2 pt1: Density and Specific Gravity (p39) Quiz 2: Ch 2	10 July Lecture: Ch4: cont. Ch5: Chemical Reactions and Equations Lab2 pt2: Density and Specific Gravity (p39) Quiz 3: Ch3	11 July Lecture: Ch5: cont. Lab3 pt1: Atomic Structure and Periodic Properties (p53) Quiz 4: Ch4	12 July Lecture: Ch1: Matter and Energy Lab3 pt2: Atomic Structure and Periodic Properties (p53) Quiz 5: Ch5
16 July Exam 1: Ch1-5 Lab4 pt1: Ionic Compounds: Their Names and Formulas (p69)	17 July Lecture: Ch6: Matter and Energy Lab4 pt2: Ionic Compounds: Their Names and Formulas (p69) Quiz/Exam:	18 July Lecture: Ch6: cont. Ch7: Matter and Energy Lab5 pt1: Covalent Compounds: Their Names, Formulas, and Shapes (p85) Quiz 6: Ch6	19 July Lecture: Ch7: cont. Ch8: Matter and Energy Lab5 pt2: Covalent Compounds: Their Names, Formulas, and Shapes (p85) Quiz 7: Ch7
23 July Lecture: Ch8: cont. Ch9: The Gaseous State Lab6 pt1: Empirical Formulas of Compounds (p117) Quiz 8: Ch8	24 July Lecture: Ch9: cont. Ch10: The Liquid and Solid States Lab6 pt2: Empirical Formulas of Compounds (p117) Quiz 9: Ch9	25 July Lecture: Ch10: cont. Review Exam 2 Ch 6-10 Lab7 pt1: Chemical Reactions (p101) Quiz 10: Ch10	26 July Lecture: Ch11: Solutions Lab7 pt2: Chemical Reactions (p101)
30 July Lecture: Ch11: cont. Ch12: Reaction Rates and Chemical Equilibrium Lab8 pt1: Gas Laws (p131) Quiz 11: Ch11	31 July Lecture: Ch12: cont. Ch13: Acids and Bases Lab8 pt2: Gas Laws (p131) Quiz 12: Ch12	1 August Lecture: Ch13: cont. Ch14: Oxidation-Reduction Reactions Lab9 pt1: Titration of Acid content of Vinegar (p143) Quiz 13: Ch13	2 August Lecture: Ch14: cont. Ch15: Nuclear Chemistry Lab9 pt2: Titration of Acid content of Vinegar (p143) Quiz 14: Ch14
6 August Lecture: Ch15: cont. Review for Exam 3 Quiz 15: Ch15 Lab: Check-Out Lab Final	7 August Exam 3: Ch11-15	8 August Lecture: Review for Final	9 August Final Exam: Ch1-15

INSTRUCTIONS for the Laboratory:

1. Print out, read, sign and return to your instructor the safety statement in the link below. This must be returned by the second laboratory period 18 April, 2018. It is available for download at the Schoology site under Lab Safety Statement.
2. You must do your laboratory work at the time assigned. Attendance will be taken. Study the experiment carefully before coming to class so that you don't waste time going through the procedure during the lab. **NO MAKE UP LABS.**
3. You must do your own work unless you are told to work in pairs for an experiment. If you need guidance, let the instructor know.
4. Always think through the next step you are going to perform before starting it.
5. **Record all data in ink while you work.** Do not write data on paper towels or other pieces of paper, even temporarily. Make sure your data is complete. **Do not forget to write your name or record any unknown number.** Pay attention to significant figures and units. If you make a mistake, cross it out neatly with a **single** line.
6. All laboratory reports are due one week after the experiment is performed.
7. Children are not allowed in the lab.
8. No eating or drinking in the lab.
9. **ALWAYS WEAR YOUR EYE PROTECTION.** Failure to wear your eye protection will lead to dismissal from lab and a lowered grade for that experiment.
10. You **MUST WEAR LONG PANTS** and **SENSIBLE CLOTHING** when we are doing any lab that required Safety Goggles as discussed during the safety lectures. This is a school policy. If you wear shorts, sandals, or other clothing that is not consistent with safety, you will **not** be admitted to the laboratory. Wear a lab apron if you have one. **You can NEVER WEAR SHORT PANTS or SKIRTS during LABORATORY PERIODS.**
11. Always work with clean equipment. Clean also means **DRY**.
12. Carefully measure the quantity of each material to be used in the experiment.
13. Always place reaction vials, test tubes or flasks in a clean beaker when standing them on a laboratory bench.
14. **Do not** take reagent bottles to your laboratory work area. Use test tubes, beakers, or paper to obtain chemicals from the dispensing area. Take small quantities of reagents. You can always get more if you run short.
15. Check carefully the label on each reagent bottle to be sure you have the correct reagent. The names of many substances appear similar at first glance.
16. To avoid possible contamination, never return unused chemicals to the reagent bottles. Never interchange spatulas or droppers.
17. **Do not** insert droppers into large reagent bottles. Instead pour a little of liquid into a small beaker.
18. Be neat in your work; if you spill something, clean it up immediately.
19. **Wash your hands** anytime you get chemicals on them and at the end of the laboratory period.
20. Keep the mass balances and the area around them **clean**. Follow the directions given by the instructor on the proper weighing technique to use. Otherwise, do not place chemicals directly on the balance pans; place a piece of weighing paper or a small container on the pan first, and then weigh your material. **Never weigh an object while it is hot.**
21. **Do not heat** graduate cylinders, burettes, pipettes, or bottles with a burner flame.
22. **Do not look** down into the open end of a test tube in which the contents are being heated or in which a reaction is being conducted.
23. **Do not** perform unauthorized experiments.
24. After completing the experiment, clean and put away your glassware and equipment. Clean your work area and make sure the gas and water are turned off. A clean lab is a safe lab.
25. Dispose solid waste such as filter paper, litmus paper, and matches in the wastebasket, not in the sink. Dispose broken glass in the broken glass waste boxes. Dispose all other solid chemicals as directed by your instructor. Pour all the toxic liquids into the appropriately labeled waste container provided or as directed by instructor.
26. Clean-up Crew: Each experiment there will be an assigned crew to clean up the laboratory. A list of duties will be supplied. Participating in the Clean-up crew is worth 20 pts, as part of the total points of the course. A sign-up list will be provided.

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.