Preparation Course for General Chemistry
(Chem. 25.62)
Syllabus-Spring 2019-DeAnza College

Lecture (62): MW 5:30 PM – 7:20 PM – Room SC2208
Lab (62): W 7:30 -10:20 PM – Room SC2208

{Be Kind}

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

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
1 Final (200 pts)	200
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 your have missed a class, lab, quiz, or exam. **Your absence must be validated with documentation if requested for Exam or Quiz make-up.**

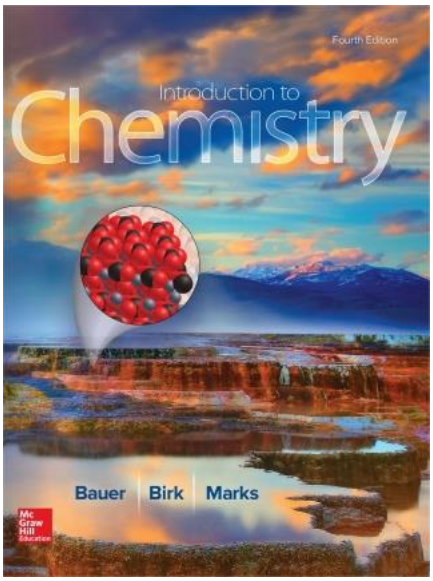
Homework: Homework will not be collected or graded. It is for your edification and you are strongly encouraged to work as many of the problems as possible.

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.**

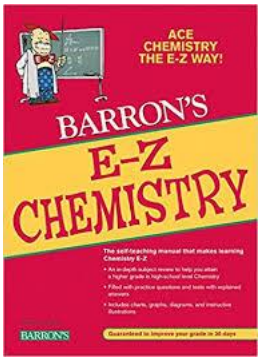
Important Dates:

April 8 First day of spring quarter
April 20 Last day to add classes for spring quarter
April 21 Last day to drop classes for spring with no record of "W"
May 3 Last day to request "Pass/No Pass" for spring classes
May 25-27 Memorial Day Weekend - Campus Closed
May 31 Last day to drop classes with a "W"
June 24-28 Final exams
June 28 Last day of spring quarter

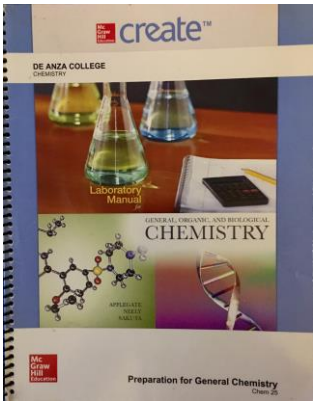
Text: **Introduction to Chemistry**, Richard C. Bauer, James P. Birk, and Pamela S. Marks. 4th ed, 2016, McGraw-Hill. You may use another edition if you have it, but you are responsible for know the differences and what material may be omitted for your copy of the text. For textbook bargain prices check out textbooksrus.com, half.com or Amazon marketplace for used books. You can rent your text at vitalsource.com.



Help Text: If you would like to purchase a text for extra help, consider "E-Z Chemistry (Barron's Easy Series)" Paperback – August 1, 2009 by Joseph A. Mascetta M.S. (Author), Mark Kernion M.A.

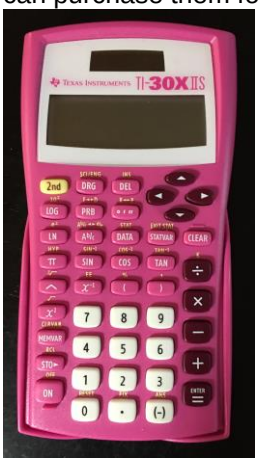


Lab Text: **Laboratory Manual for Preparation for General Chemistry (Create version for DeAnza)**, 2017, Applegate, Neely, and Sakuta.



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

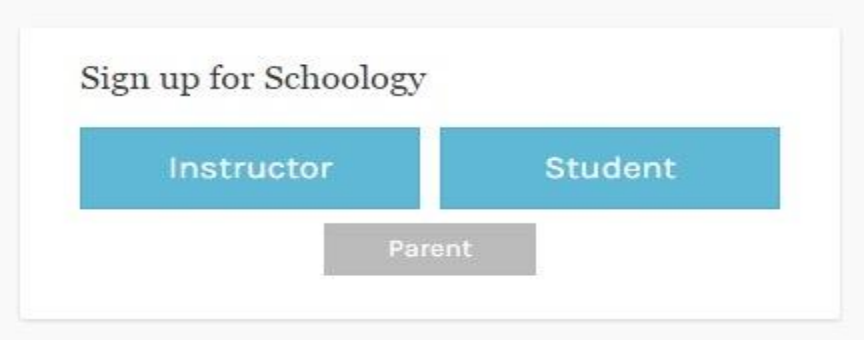
Academic Dishonesty: "Academic dishonesty is a serious offense, which includes but is not limited to the following: cheating, complicity, fabrication and falsification, forgery, and plagiarism. Cheating involves copying another student's paper, exam, quiz or use of technology devices to exchange information 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 .

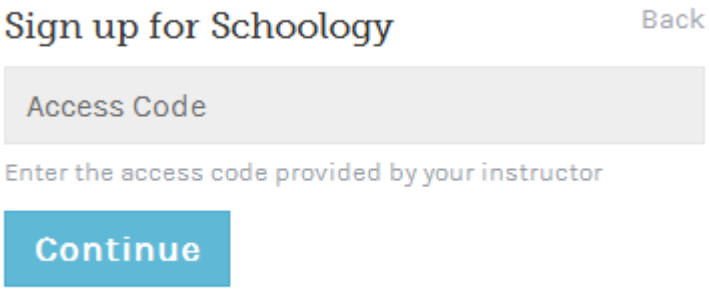
Help: If you need help with any aspect of this course, please contact your instructor first. You can also contact the Student Success Center at http://www.deanza.edu/studentsuccess/ to get help with tutoring or with reading, and writing, tutoring or academic skills. Please use this resource.

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, Sp 19: Section 62. Go to https://app.schoology.com/register.php and click **Student**.



1 Enter your Access Code. This is a 10-digit code in **NKB5Z-R6JR2**



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/studentsuccess/ , or you can use the free online tutoring available to all DeAnza students. For more tutoring information go to http://www.deanza.edu/studentsuccess/onlinetutoring/ Unfortunately, chemistry tutors are in short supply. I would recommend making a study group with your classmates.

Lab Report: All 9 labs count towards your grade. **No make-up labs.** Late labs will incur a penalty. You **MUST** wear eye protection during lab! You may work with a lab partner. Requirements of the Lab Report are given below.
Need 2 Brand **New** Composition Notebooks (*no used books*) (Will alternate experiments in to notebook. This will assist in grading. Your notebook will be graded during lab and returned to you before you leave lab. Write Labs 1,3,5,7,9 in **Book 1** and Labs 2,4,6,8 in **Book 2**. Notebooks to be sewn binding, available at office supply, grocery stores or drug stores, about $3 each (shown here).
Pages can be lined, unlined or graph. Choose a color that is **NOT** black. See images below. **Labs will be due for grading the week following the completion of the experiment. I will grade them during lab and return them to you.**

1. Name and Contact Information, include an email or phone number on the cover, inside front cover.
2. **Number each page** and every page, both front to back in upper right hand corner. All pages in the notebook. Number each side of the page.
3. Table of contents on First Page: Experiment name and Page Number. You will fill this in as the Quarter proceeds. I recommend recording Labs 1,3,5,7,9 in Book I and Labs 2,4,6,8 in Book II. I will grade one book as you work in the other.
4. Experiment Name
5. Experiment Goals (can summarize)
6. Materials list
7. Brief Discussion or Theory
8. Experimental Procedures: Summarize, but must be able to follow in class to perform the experiment.
9. Pre-Lab Questions
10. Data Tables as they appear in the lab book.
11. Problems and Questions
12. Discussion of Results including possible sources of error
13. After each page is completed, sign and date the bottom of **each** page.

14. Errors are simply lined through and the correct information written in the available space. No *white-out*, no messy crossing out errors. Must write in INK. No pencil. Must be neatly recorded.
→Steps 1-10 MUST be completed before coming to Lab. Receive a Red Star Stamp from Instructor to verify.
Labs are due One Week after the completion of the lab. Late labs may incur a penalty.
If you miss a lab and have an excused, verified absence, talk to me, preferably before your absence or ASAP afterwards.

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 **17 April, 2019**. 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 supplies. 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.

Chem. 25:62 Spring 2019
Class Calendar

Date Mon Lecture Lab		Date Wed Lecture Lab	
8 Apr	Intro to Course and Lab Ch. 1: Introduction to Chemistry	10 Apr	Ch. 1: Prerequisite Science Skills **Quiz PSS Take Home** **Lab: Check-In**
15 Apr	Chap 2: The Metric System **Quiz PSS Due**	17 Apr	Ch. 3: Matter and Energy **Quiz 1: Ch. 1 & 2** **Lab 1: Measurements, Significant Figures, Calculation** **Lab Safety Statement Due in Lab**
22 Apr	Ch. 4: Models of the Atom **Quiz 2: Ch. 3**	24 Apr	Ch. 5: The Periodic Table **Quiz 3: Ch. 4** **Lab 2: Density and Specific Gravity** **Signed Lab Safety Document due**
29 Apr	Review for Exam 1 **Quiz 4: Ch. 5**	1 May	Ch. 6: Language of Chemistry **Lab 3: Atomic Structure and Periodic Properties**
6 May	**Exam 1: Ch. 1-5**	8 May	Ch. 7: Chemical Reactions **Quiz 5: Ch. 6** **Lab 4: Ionic Compounds: Their Names and Formulas**
13 May	Ch. 8: The Mole Concept **Quiz 6: Ch. 7**	15 May	Ch. 9: Chemical Equation Calculations **Quiz 7: Ch. 8** **Lab 5: Covalent Compounds: Their Names, Formulas, and Shapes**
20 May	Ch. 10: Gasses **Quiz 8: Ch. 9**	22 May	Review for Exam 2 **Ch. 9: Ch. 10** **Lab 6: Empirical Formulas of Compounds**
27 May	**Memorial Day Holiday: No Class**	29 May	**Exam 2: Ch. 6-10** **Lab 7: Chemical Reactions**
3 June	Ch. 11: Liquids and Solids	5 June	Ch. 12: Chemical Bonding **Quiz 10: Ch. 11** **Lab 8: Gas Laws**
10 June	Ch. 13: Solutions **Quiz 11: Ch. 12**	12 June	Ch. 14: Acids and Bases **Quiz 12: Ch. 13** **Lab 9: Titration of the Acid Content in Vinegar**
17 June	Ch. 17: Oxidation and Reduction Review for Exam 3 Review for Final **Quiz 13: Ch. 14** **Quiz 15: Ch. 17-Take Home**	19 June	**Exam 3: Ch. 19-24** **Lab: Check-Out** **Lab Final**
24 June	**Final Exam: Chap 1-14, 17 @ 6:15-8:15 pm**	26 June	**No Class**

Student Learning Outcome(s):

*Solve stoichiometric problems by applying appropriate molar relationships.
*Identify the differences between elements and compounds and describe the chemical bonding in compounds-ionics vs. covalent.