De Anza College - winter 2009 (01/05/09– 03/27/09)

INSTRUCTOR: Elena Zlatogorov

CHEMISTRY 1A

HOURS**:** LECTURE Mon., Wed., Fri. 8:30AM – 9:20AM SC1102
OFFICE HOURS Mon., Wed 10:50AM - 11:20AM SC2202
Instructor Zlatogorov-- Chem 1A-03 LAB LECTURE Mon., Wed 11:30AM - 12:20AM SC-2202
LAB Mon., Wed. 12:20AM – 2:00PM SC-2202
Instructor Fisher-- Chem 1A-04 LAB LECTURE Tu., Th. 11:30AM - 12:20AM SC-2202
LAB Tu., Th. 12:20AM – 2:00PM SC-2202

I. COURSE DESCRIPTION: 5 Units

Prerequisite: High School Chemistry or Chemistry 50 and Mathematics 105 or 114, or high school equivalent. Advisory: English writing 100B and Reading 100, or English as a Second Language 172 and 173.

Chemistry 1A course includes: the study of atomic and molecular structure, quantum theory, thermo chemistry, gases, solutions, and qualitative analysis with the classical study of properties of atoms and molecules and their reactivity.

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This course will consist of lectures, interactive multimedia, problem solving, lab lectures, laboratory experiments, exams and quizzes.

LECTURE:

The class will meet in Room SC1102 for lecture M., W., F. No one is excused from attending the lecture. **If you fail to show up for two lectures you will be dropped from the class.** If you have a medical or other documentable emergency, you are expected to provide written proof. You are expected to **arrive** to lecture and lab **on time.** Each **two** late arrivals count as an unexcused absence. **The textbook should be read and notes from the textbook should be written before lecture.** The first part of class will be lecture and discussion. The remaining class time will be problem solving. An advanced education **requires active and polite** participation in class activities. Your Chem 1A grade is influenced by attendance and participation. I encourage you to ask chemistry questions during lecture no matter how trivial, silly or boring they are. Simply **write down your question and pass it to me or bring it to office hours.** You are encouraged to interact with each other in a collegial manner.
Problem-solving • When time permits we will also work problems in lecture. Sometimes problems are intended to be worked individually and in other instances, the class will be divided into groups to solve a problem. Sometimes a student may be called up to the board to answer a question. This is not meant to intimidate you; it is instead meant to better prepare you academically by giving you an opportunity to solve a problem your own unique way. It may be difficult at first to get in front of the class, but it will help you in long terms.

The assigned homework problems are due the meeting after completion of the chapter. You must have the questions and problems fully worked out to receive credit. These questions must be answered on a program "MasteringChemistry" as well as on a separate sheet of paper and neatly done. EXAM dates are listed on your schedule. NO EXAMS WILL BE GIVEN AT ANY OTHER TIME. FAILURE TO TAKE THE EXAM AT THE SCHEDULED TIME WILL RESULT IN A ZERO FOR THAT EXAM.
There will be 3 exams on the material covered worth 100 points each and final comprehensive exam, worth 200 points. Two scheduled quizzes, 30 points each, will be given during the semester. Quizzes will cover all work up to the time of quiz. No make-up quizzes will be given.

Homework.

Students need to do the on-line "masteringchemistry" homework assignments to get the full 110 points. A "masteringchemistry" access code can be purchased on-line or from the bookstore. The on-line "masteringchemistry" assignments provide answers on the spot and is the most effective way to thoroughly understand all the concepts. It is recommended that the student also review the problems at the end of each chapter with the keys provided to fully master the concept. Students should try to finish the assignment on time. 5 points will be deducted for each extension requested by individual student.

LABORATORY:
Student must bring a combination padlock to the 1st laboratory meeting.
Labs will be done in the room SC-2202. Lab reports are due **ONE WEEK** after the scheduled laboratory exercise is completed. **The lab manual should be read and pre-lab notes for the experiment should be written before the experiment.** On each day that a new experiment begins, the **pre-lab** for the experiment **will be checked** at the very beginning of lecture, **post-lab** for the experiment **will be checked** at the same day. Each lab test will begin at the very beginning of the lab lecture.
If you fail to show up for two labs or present and do not perform lab assignments /experiments you will be dropped from the class. All lab work must be in **PEN** for **credit.** You must complete **all labs** to receive a grade in the class.
When you are working in the room SC-2202 you must wear **Safety GOGGLES. No SHORTS or OPEN TOE SHOES will be allowed in the lab**. **NO FOOD OR DRINKS ARE ALLOWED IN THE CHEMISTRY LAB. Hair longer than the bottom of your neck must be securely tied back.**

The first part of class will be lecture and discussion. The remaining class time will be experiments and / or problem solving .
Tests dates are listed on your schedule.
NO TESTS WILL BE GIVEN AT ANY OTHER TIME. FAILURE TO TAKE THE TEST AT THE SCHEDULED TIME WILL RESULT IN A ZERO FOR THAT TEST.

Being late for class will result in a failure on any test you miss, and you will not be allowed extra time to complete a testbecause of tardiness.

Being late for, or missing , **laboratory lecture**, will result in your not being allowed to perform the laboratory for that day**, because of safety reasons**. (An important part of lab lecture is being sure that students understand the experiment enough to be safe in their

work). **Since there are no possibilities for making up a laboratory**, this will result in a zero for that lab.

The labs to be performed are outlined with expected completion dates.
There will be 2 tests on all material covered in the lab worth 50 points each. Laboratory experiment reports are worth **15** points, prelab notes **5** points for a total of 220 points. Total points possible for the lab are 320. Participation in the class 15 points.

Chemistry requires time and effort to understand and learn.
Between reading, writing notes for lecture and lab procedures, and working pre lab/post lab problems, it is expected that you will set aside at least two hours for studying chemistry for every hour of lecture and lab lecture.

Total points possible for the course are 910. Assigned grades are:
A; 90-100%, B; 80-89%, C; 70-79%, D; 55-69%.

II. RECOMMENDED TEXT:

Lecture:
R. Petrucci, W. Harwood, F. Herring and J.Madura. General Chemistry. Principles and Modern Applications, 9th Edition, Pearson Education Publishing (2007).
Optional: 1) R. Petrucci. Student Solutions Manual for General Chemistry. Principles and Modern Applications, used book.
2) Study Guide for General Chemistry. Principles and Modern Applications.

Laboratory:
General Chemistry Laboratory Manual: Experiments and Exercises. Microscale & Macroscale Experiments. Wiley Custom Services (2005)
Chemistry 1A Vernier Laboratory Experiments -1st Edition- Adapted by Cincia Muzzi, David Gray.

III. REQUIRED CLASS MATERIALS:

Safety glasses/goggles – sold at the bookstore
Scantron forms 882E
Scientific calculator.
Permanently bound laboratory notebook; either 6x9 or 8.5x11 sizes acceptable; **No spiral bound lab notebook may be used.**

Disruption• Any student disrupting class may be asked to leave. DeAnza College will enforce all procedures set forth in the Student Standards of Conduct and the appropriate remedial and/or disciplinary steps will be taken when violations occur.

The use of cell phones or pagers is strictly prohibited during lecture and lab. Turn them **OFF** before you arrive or you will be **dropped** from the class.

Academic Integrity• Giving or receiving unauthorized aid in any form is not tolerated and will result in dismissal from the course with a grade of F. Academic dishonesty includes, but not limited to, the following:

1) Looking at another student's test and copying from it or allowing another student to copy from your test during an exam or quiz.

2) Talking to another student inside the classroom during an exam or quiz.
3) Using data or formulas stored in a calculator or obtained from any communications device.
4) Copying of laboratory data or data analysis from another student, including from a lab partner, without prior permission of the instructor.

Chemistry 1A Win 2009
Elena Zlatogorov Lec: M., W., F. 8:30AM – 9:20AM SC1102

TENTATIVE LECTURE AND EXAMINATION SCHEDULE

CHAPTER AND LECTURE TOPIC	
Chapter 1 – Matter–Its Properties & Measurement	01/05/09-01/07/09
Chapter 2 –Atoms & the Atomic Theory	01/09/09-01/14/09
Chapter 3 –Chemical Compounds **Quiz 1.**	01/16/09-01/21/09
Last day to drop full-term class for a refund (resident stud.)	01/16/09
Last day to add Winter Quarter classes.	01/17/09
Holiday - Martin Luther King's Birthday	01/19/09
Chapter 4 – Chemical Reactions	01/23/09-01/26/09
Last day to drop a class with no record of grade	01/24/09
Review Chapter 1,2,3,4,	01/28/09
MIDTERM #1 CHAPTERS 1- 4	**01/30/09**
Chapter 5 – Intro. to Reactions in Aqueous Solution	02/02/09-02/04/09
Chapter 7 – Thermochemistry	02/06/09-02/09/09
Chapter 6 – Gases. **Quiz 2**	02/11/09-02/18/09
Holiday – Abraham Lincoln's Birthday	02/13/09
Holiday – George Washington's Birthday	02/16/09
Chapter 8 – Electrons in Atoms	02/20/09-02/23/09
Review Chapters 5-8	02/25/09
MIDTERM #2 CHAPTERS 5 – 8	**2/27/09**
Last day to drop with a "W"	02/28/09
Chapter 9 – The Periodic Table and some Atomic Properties	03/02/09-03/04/09
Chapter 10 – Chemical Bonding I; Basic Concepts.	03/06/09-03/09/09
Chapter 11 – Chem. Bonding II; Additional Aspects. Quiz 3	03/11/09-03/16/09
Review Chapters 9-11	03/16/09
MIDTERM #3 CHAPTERS 9 – 11	**03/18/09**
Review Chapters 1-11	03/20/09
FINAL EXAMINATION -- CHAPTERS 1-11	**3/24/09**
@ 7:00-9:00 AM Room: SC1102	

Notes: Please note that this is a **tentative** schedule. While I think it is a realistic one, we may not always proceed exactly according to the schedule. However, you are expected to have read each chapter before I begin to lecture on that material, and you are expected to be prepared for each lab experiment.

Chemistry 1A Win 2009
Zlatogorov: Lab: M., W 11:30AM-02:00PM Room: SC2202
Fisher: Lab: T., Th. 11:30AM-02:00PM Room: SC2202

LABORATORY SCHEDULE

Week	Experiment/Lab lecture	Date	Day
1.	Lab Check-In. Safety Lecture. Lab Notebooks/Reports	01/05/09	M
	Lab Check-In. Safety Lecture. Lab Notebooks/Reports	01/06/09	Tu
	Exp #1 Gravimetric Measurement & Data Treatment	01/07/09	W
	Exp #1 Gravimetric Measurement & Data Treatment	01/08/09	Th
2.	Exp #2 Melting and Boiling Point	01/12/09	M
	Exp #2 Melting and Boiling Point	01/13/09	Tu
	Exp #2 Melting and Boiling Point, continued	01/14/09	W
	Exp #2 Melting and Boiling Point, continued	01/15/09	Th
3.	Holiday - Martin Luther King's Birthday	01/19/09	M
	Exp #3 Conductivity (Vernier Experiment)	01/20/09	Tu
	Exp #3 Conductivity (Vernier Experiment)	01/21/09	W
	Exp #3 Conductivity (Vernier Experiment), continued	01/22/09	Th
4.	Exp #3 Conductivity (Vernier Experiment), continued	01/26/09	M
	Exp #4 Empirical Formula of a Hydrate.	01/27/09	Tu
	Exp #4 Empirical Formula of a Hydrate.	01/28/09	W
	Exp #4 Empirical Formula of a Hydrate, continued.	01/29/09	Th
5.	Exp #4 Empirical Formula of a Hydrate, continued.	02/02/09	M
	Exp #5 Acid – Base Titration	02/03/09	Tu
	Exp #5 Acid – Base Titration	02/04/09	W
	Exp #5 Acid – Base Titration	02/05/09	Th
6.	Exp #5 Acid – Base Titration	02/09/09	M
	Exp #6 Hess's Law (Vernier Experiment)	02/10/09	Tu
	Exp #6 Hess's Law (Vernier Experiment)	02/11/09	W
	Quiz#1. Exp #6 Hess's Law (Vernier Experiment), continued	02/12/09	Th
7.	Holiday – George Washington's Birthday	02/16/09	M
	Exp # 7 Molar Volume of a Gas	02/17/09	Tu
	Quiz#1. Exp #6 Hess's Law (Vernier Experiment), continued	02/18/09	W
	Exp # 7 Molar Volume of a Gas, continued	02/19/09	Th
8.	Exp # 7 Molar Volume of a Gas	02/23/09	M
	Exp #8 Vapor Pressure (Vernier Experiment)	02/24/09	Tu
	Exp # 7 Molar Volume of a Gas, continued	02/25/09	W
	Exp #8 Vapor Pressure (Vernier Experiment),continued	02/26/09	Th
9.	Exp #8 Vapor Pressure (Vernier Experiment)	03/02/09	M
	Exp #9 Redox Titration	03/03/09	Tu
	Exp #8 Vapor Pressure (Vernier Experiment), continued	03/04/09	W

	Exp #9 Redox Titration, continued	03/05/09 Th
10.	Exp #9 Redox Titration	03/09/09 M
	Exp #10 Molecular Geometry.	03/10/09 Tu
	Exp #9 Redox Titration, continued	03/11/09 W
	Exp #10 Molecular Geometry.	03/12/09 Th
11.	Exp #10 Molecular Geometry.	03/16/09 M
	Exp #11 Line Spectra .	03/17/09 Tu
	Exp #11 Line Spectra	03/17/09 W
	Quiz #2. Lab Check out.	03/18/09 Th
12.	Quiz #2. Lab Check out.	03/23/09 M

Notes: Please note that this is a **tentative** schedule.