

Chemistry 1B: General Chemistry

Syllabus

Las Positas College

Spring 2011, Section V01, CRN 30219

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Office hours:

Mondays 10:30-11:30 am

Room 4237

Tuesdays 12:30-1:20pm

Room 4237

Wednesdays 10:30-11:30 am

Room 2401 (Tutorial Center)

Fridays 8:00-8:50 am & 12:00-1:00 pm

Room 4237

Course Description

Chemistry 1B is the 2nd Semester of a *rigorous*, year-long course in college chemistry. This semester will consist of chemical energetics and equilibria, solutions and ionic equilibria, acid-base chemistry, electrochemistry, coordination chemistry, kinetics, nuclear chemistry, organic chemistry, and the chemistry of family groups of the periodic table. Laboratory emphasizes quantitative techniques, including instrumentation, and qualitative analysis and will emphasize safety. 5.0 Units.

Meeting Times

<u>Lecture:</u>	M and W	12:30 PM – 1:45 PM	Room 4213
<u>Laboratory:</u>	T and Th	1:30 PM – 4:20 PM	Room 1802

Books and Supplies

A. *REQUIRED MATERIALS*

Text: Zumdahl and Zumdahl, Chemistry, 8th Edition

Chemistry 1B: Laboratory Manual, Drs. Brennan, Ansell and Grow

Laboratory Notebook with duplicating pages

Safety Goggles for Chemistry must seal to face for full protection.

Permanent Marker, Very fine point, (“Sharpie”)

Scientific Calculator: non-programmable, inexpensive

Large “Green Book” for quizzes

ACS Exam Study Guide (order in class or online)

B. *RECOMMENDED MATERIALS*

Study Guide, Zumdahl, 8th Edition

Student Solutions Manual, 8th Edition

Rubber gloves, physician-style, box of 50

Laboratory coat or apron

Prerequisites: Chemistry 1A (completed with a grade of “C” or higher) or equivalent.

Dates to Remember

February 4th Last day to add or **drop** “NGR” (no grade of record) in person.
April 8th Last day to withdraw with an automatic “W” grade

ATTENDANCE

You are expected to attend all class and laboratory sessions. You may be **dropped or failed for missing a total 4 consecutive or 6 total hours of lecture and/or lab.** It is your responsibility to make sure that you are dropped from the course. It is wise to inform the instructor of an illness or other circumstance that causes absence of more than a day or two. The instructor will keep track of students who are absent or late and your final course grade may be affected by your attendance.

Reading

A tentative lecture and laboratory schedule is provided. It is crucial that both reading and pre-laboratory work be completed *before* you come to class or lab. Come to class prepared to answer question related to the reading. If you are unsure whether the schedule has changed, it is your responsibility to ask. For a 5 unit course, you are expected to dedicate an average of 10 hours per week outside of class to reading, studying, homework, lab work, etc.

VIII. Basis for Evaluation

A. Weighting factors:

Homework	5%
Lab	25%
Quizzes	10%
Midterms (4)	40%
Final Exam	20%

B. Distribution of Grades:

> 90%	A
80-89%	B
67-79%	C
55-66%	D
< 55%	F

Testing

There will be four (4) mid-term exams. See the tentative lecture schedule. The tests will include problems, short answer questions, multiple-choice and short explanations. There will be no make-up tests. Missed tests will receive a grade of zero. The lowest test score will be dropped when final grades are prepared. No credit is given for only answers to the problems (except multiple choice); all supporting calculations that lead to the answer must be presented in order to receive full credit.

Final Exam

The Final Exam will be the American Chemical Society (ACS) National Standardized Exam. It will be cumulative for 1A and 1B. The exam will be given **Monday, May 23rd from 11:30am - 1:20pm in Room 4213.** The Final Exam will be given neither early nor late.

Quizzes

Brief, unannounced quizzes will be given at frequently the beginning for class. You must bring a large “Green book” to class every day for your quizzes. The lowest quiz score will be dropped.

Homework

Homework will be assigned for each chapter and will be collected at the beginning of the next lecture period after the lecture/discussion is completed for that chapter (see tentative dates on the homework schedule). Homework will be checked for completeness and will be returned with a solution set. **No late homework will be accepted for credit**, but you are encouraged to finish late homework in order to prepare for the exams and quizzes.

Laboratory

Chemistry is a lab science. Therefore lab is perhaps the most important learning tool in the course. You will experience chemistry first-hand.

-Come prepared! Be sure to always bring your lab manual, text, supplement, and calculator.

-Be sure to be on time and allow for traffic, parking, eating, etc. If you are late to lab, points will be deducted from your lab score. Pre-lab work will be checked at the beginning of lab and you may be asked to leave the lab for safety reasons if it is not complete.

-Lab reports are due at the beginning of the next lab period after the completion of the experiment. Study the labs ahead of time and ask questions beforehand. There is no such thing as a stupid question.

There are no make-up labs and no lab scores will be dropped. Safety is of primary importance.

Dropping the course.

It is your responsibility to file the proper paperwork if you decide to drop the class. If you withdraw without informing the instructor or after the "W" date, a grade of "F" may be assigned for the course. **If you miss four consecutive or 6 cumulative hours of instruction, you may be dropped from this course.** If this happens after the automatic "W" date, a course grade of "F" may be assigned.

Academic Honesty

Honesty and integrity are highly cherished and very necessary attributes in scientific endeavors. You are expected to do your own work and report your data honestly. Plagiarism (copying another person's work) or falsifying data or dishonest work will be dealt with harshly. Punitive response may include assigning a failing grade for the work or for the entire course or expulsion from the course.

Personal Responsibility

Chemistry 1B is a college-level course. It transfers to a number of universities for full college credit. I expect you to treat everyone in the class with respect, both me and other students. This means

- **All electronic devices should be turned off.**
- arriving on time for class (allow enough time for traffic jams and to find parking)
- remembering to bring pens, goggles, **CALCULATORS**, etc with you
- not leaving class unless you have a personal physical emergency
- not talking or sleeping during class
- not bringing children or visitors to class.

Please note that this schedule is tentative -- the class may not necessarily follow the schedule exactly.

	DATE	MON	TUE (LAB)	WED	THU (LAB)
1	Jan 18-20	<i>No Classes MLK Day Holiday</i>	Introduction & Safety (Lab 1)	Chapter 13 Chemical Equilibrium	Lecture: Chapter 13 Chemical Equilibrium
2	Jan 24-27	Chapter 13 Chemical Equilibrium	Lab 2 Forensics Chemistry	Chapter 13 Chemical Equilibrium	Lab 3 Chemical Equilibria
3	Jan 31- Feb 3	Chapter 12 Kinetics	Lab 4 Determination K by Spect.	Chapter 12 Kinetics	Lab 5 Factors Affecting Rates of Chemical Reactions
4	Feb 7-10	Chapter 12 Kinetics	Lab 6 Rate of a Chemical Reaction: Kinetics	Chapter 12 Kinetics	EXAM 1
5	Feb 14-17	Chapter 14 Acids and bases	Lab 7 pH and Acid-Base Titrations (Day 1)	Chapter 14: Acids and bases	Lab 7 pH Scale and Acid-Base Titration (Day 2)
6	Feb 21-24	<i>No Classes President's Day</i>	Lab 8 Determination of MM and K _{sp}	Chapter 15 Aqueous Equilibria	Lab 9 Tap Water Analysis (Day 1)
7	Feb 28- Mar 3	Chapter 15 Aqueous Equilibria	Lab 9 Tap Water Analysis (Day 2)	Chapter 15 Aqueous Equilibria Topics Due	Lab 10 K _{sp} of Calcium Iodate
8	March 7-10	Chapter 16 Solubility/Complex Ions	Lab 11 Analysis of Cations in Seawater	Chapter 16 Solubility/Complex Ions	EXAM 2
9	March 14-17	Chapter 17 Thermochemistry	Lab 12 Analysis of Anions in Seawater	Chapter 17 Thermochemistry	Lab 11 and 12 Continued
10	March 21-24	Chapter 17 Entropy Free Energy	Lecture: Chapter 18 Electrochemistry	Chapter 18 Electrochemistry	Lab 14 Electrochemical Cells
11	March 28-31	Chapter 18 Electrochemistry	Lab 15 Electrochemical Puzzles	Chapter 18 Electrochemistry	FLEX DAY (No Classes)
12	Apr 4-7	Chapter 19 Nuclear Chemistry	Lab 16 Half-Life of KCl	Chapter 19 Nuclear Chemistry	Lab 18 Equilibria of Coord. Compounds
13	Apr 11-14	Chapter 19 Nuclear Chemistry	EXAM 3	Chapter 21: Transition Metal Chemistry	Chapter 21 Transition Metal Chemistry
14	April 18-21- Spring Break (No Classes)				
15	Apr 25-28	Chapter 21: Transition Metal Chemistry	PRESENTATIONS	Chapter 21: Transition Metal Chemistry	PRESENTATIONS
16	May 2-5	Chapter 22 Organic Chemistry	Chapter 22 Organic Chemistry	Chapter 22 Organic Chemistry	Lab 19 Green Chemistry (Day 1)
17	May 6-9	Chapter 22 Organic Chemistry	Lab 19 Green Chemistry (Day 2)	Chapter 22 Organic Chemistry	EXAM 4
18	May 16-19	Chapter 20 Rep. Elements	Lab 20: UV, Sun- screens & checkout	ACS Review	ACS Review

Final Exam: Monday, May 23rd, 11:30 AM – 1:20 PM, Room 4213