Chemistry 1B/1BL Winter Quarter 2009

Chem. 1A (05413) MWF 9:00 – 9:50 AM Chem. 1179

Instructor: Petra van Koppen Office: PSBN 3670 B vankoppen@chem.ucsb.edu
Office Hours: Mon 12-1:30 PM, Wed 10-11AM, or by appointment

Textbook: Steven S. Zumdahl, Chemical Principles, 6th Edition, Houghton Mifflin (2009)

Exams: There will be 2 midterms, 1 quiz and a final. No make-up exams will be given.

Grades: Grades are determined from your homework, quizzes and exams as follows:
Homework: 10%, Quizzes: 10%, Exam 1: 20%, Exam 2: 20%, Final: 40%

Final Exam: Thursday March 19 8 – 11 AM Chem. 1179

APPROXIMATE LECTURE SCHEDULE **LAB SCHEDULE**

Week	*Date*	*Topic*	*Chapter*	*Chem. 1BL Lab Assignment*
1	Jan. 5 – 9	Energy,Enthalpy, and Thermochemistry	**9**	Check-In / Syllabus / Safety
2	Jan. 12 – 16 **Quiz**	Spontaneity,Entropy, and Free Energy **Quiz Fri. Jan. 16**	**9** **10**	Experiment 8: Acid-Base Equilibria
3	Holiday Jan. 19 Jan. 21 – 23	Spontaneity, Entropy, and Free Energy	**10**	Experiment 9: Thermochemistry Monday labs do Exp. 9 next week.
4	Jan. 26 – 30 **Exam 1**	Free Energy Electrochemistry **Exam 1 Fri. Jan. 30**	**10** **11**	Experiment 10: Oxidation of Vitamin C. Monday Labs do Exp. 9
5	Feb. 2 – 6	Electrochemistry	**11**	Experiment 11: Electrochemistry Monday Labs do Exp. 10
6	Feb. 9 – 13 **Quiz**	Chemical Kinetics **Quiz Fri. Feb 13**	**15**	Expt. 12: Electrochemical Cells Monday Labs do Exp. 11
7	Holiday Feb. 16 Feb. 18 – 20	Holiday Feb. 16 Chemical Kinetics	**15**	**NO LABS THIS WEEK**
8	Feb. 23 -27 **Exam 2**	Quantum Mechanics Atomic Theory **Exam 2 Fri. Feb. 27**	**12**	Experiment 13 Chemical Kinetics Monday Labs do Exp. 12
9	Mar. 2 – 6	Quantum Mechanics Bonding	**12** **13**	Experiment 14 Atomic Spectroscopy, Check-out Monday Labs do Exp. 13
10	Mar. 9 - 13	Bonding:General Concepts	**13**	Lab Final Review Monday Labs do Exp. 14, Check-Out

WebAssign: This class will make extensive use of the WebAssign System. WebAssign allows us to retrieve and submit homework assignments online, to give instant feedback as you work problem sets, and gives a discussion forum for you to ask questions and discuss the material. All homework assignments will be conducted through WebAssign.

HELP: Free Assistance Services (CLAS):
http://www.clas.ucsb.edu/CLAS_schedules.htm

For CLAS Drop In Schedule, see:
http://www.clas.ucsb.edu/schedule/schedbio.pdf

CHEM 1BL GENERAL CHEMISTRY LABORATORY

Chemistry 1BL is designed to demonstrate and reinforce the basic concepts of thermochemistry, electrochemistry, chemical kinetics, and atomic spectroscopy. Laboratory techniques such as the use of a voltmeter, ammeter, spectroscope and calorimetry will be introduced. The analytical methods learned in Chem. 1BL are applicable to many other scientific disciplines including Biology, Medicine, Environmental Science, Physics and Engineering.

Laboratory Coordinator: Petra van Koppen, PSBN 3670 B. Email: vankoppen@chem.ucsb.edu
Office hours: Mon 12-1:30 AM, Wed 10-11AM or by appointment

Lab Final Exam: Monday, March 16, 4 – 6 PM* Rooms to be announced

*If you are scheduled to take a foreign language final at this time, or if you have another conflict, you can take the lab final early: Friday, March 13, 4-6 PM, Room to be announced

Lab Manual: General Chemistry 1AL/1BL/1CL, Laboratory Manual by Petra van Koppen, Hayden-McNeil Pub. (2008-2009)

Also Required: Safety Glasses and a Bound, quadrille-ruled, duplicate-page notebook. Both are available in the bookstore.

Safety glasses must be worn by all students in the laboratory at all times. You will not be allowed into the laboratory unless you have safety glasses to protect your eyes. You must check out of your lab (check all contents of your lab drawer) at the end of the course (or if you drop the course before the end). Failure to do so may result in a charge for equipment not checked in and for your technique grade you will receive zero points.

NOTE: Chem. 1B and 1BL may not be taken P/NP by science and engineering majors because these courses are required in preparation for the major. REQUIRED LAB FEE: A non-refundable $32.00 Lab Fee is required for this Course. It will be charged to your BARC account upon confirmation of your enrollment.

Studying for Chemistry 1B

This is not necessarily a difficult course, but most students find that they have to spend time studying to understand the material. It is important to keep up with the schedule. Read the chapter as scheduled. As you read the chapter, stop and work all the exercises as they appear in the text. This is the only way to be sure you understand the material as you proceed through the chapter. After you have finished the chapter, work all the assigned problems given below. This is a minimum list of problems that all students should do. The solutions manual, available in the bookstore, has the answers to the problems. Use the solutions manual to check your work. If you get stuck solving a problem, it may be useful to read and review the material in the text. **Help is available: CLAS** discussion sections and drop-in all day every day, **TA Office hours** (PSBN 2637) **your instructor** is also available during office hours and by appointment.

Learning to solve Chemistry problems requires you to work the problems yourself. Watching others (e.g. instructors, tutors or other students) work problems or reading the solutions in the solution manual is no substitute for working them yourself. You must go through the reasoning process yourself until you understand each type of problem. Sufficient practice is important. If you need more practice solving problems, do other problems in addition to those assigned.

Assigned Problems 6th Edition (Minimum List of Problems – Work More Problems on Your Own)

Chapter 9: 1,10,11,13,14,16,18,21,29,30,31,32,33,34,35,37,38,43,44,45,46,47,49,50,51,55,56,57,59,60,62,65, 69,70,71,73,85,87
Chapter 10: 7,21,22,25,27,28,30,31,33,37,38,40,44,45,47,50,53,55,57,58,60,64,65,66,67,74,77,78,81,91
Chapter 11: 3,10,11,17,19,20,22,23,24,25,26,27,35,37,38,39,47,48,49,51,55,60,61,62,65,67,68,71,76,78,79,80
Chapter 12: 13,14,21,22,23,25,26,27,29,35,36,37,38,39,41,53,54,55,57,58,59,63,65,67,70,71,72,77,79, 80,81,85, 86,87,88,90,94,99,100,121,124,129
Chapter 13: 10,13,14,17,19,20,21,22,23,24,27,37,38,39,40,51,52,55,59,67,68,69,70,71,72
Chapter 15: 4,8,11,15,17,18,19,20,21,23,28,29,30,31,33,36,37,42,43,44,45,51,52,55,60,67,69,71,73,74,75,76,78,82

Chem. 1B/1BL Website: www.chem.ucsb.edu Go to Undergrads, Course Web Pages